A

GENERAL HISTORY

OF THE

DICHLAMYDEOUS PLANTS,

COMPRISING COMPLETE

DESCRIPTIONS OF THE DIFFERENT ORDERS;

TOGETHER WITH THE

CHARACTERS OF THE GENERA AND SPECIES, AND AN ENUMERATION OF THE CULTIVATED VARIETIES;

THEIR PLACES OF GROWTH, TIME OF FLOWERING, MODE OF CULTURE, AND

USES IN MEDICINE AND DOMESTIC ECONOMY;

THE SCIENTIFIC NAMES ACCENTUATED, THEIR ETYMOLOGIES EXPLAINED, AND THE CLASSES AND ORDERS

ILLUSTRATED BY ENGRAVINGS,

AND PRECEDED BY INTRODUCTIONS TO THE LINNÆAN AND NATURAL SYSTEMS,

AND A GLOSSARY OF THE TERMS USED:

THE WHOLE

ARRANGED ACCORDING TO THE NATURAL SYSTEM.

BY GEORGE DON, F.L.S.

IN FOUR VOLUMES.

VOL. I.—THALAMIFLORÆ.

LONDON:

PRINTED FOR J. G. AND F. RIVINGTON; J. AND W. T. CLARKE; LONGMAN AND CO.; T. CADELL; J. RICHARDSON; JEFFERY AND SON; BALDWIN AND CRADOCK; J. BOOKER; J. BOOTH; HARVEY AND DARTON; S. BAGSTER; SHERWOOD AND CO.; HARDING AND LEPARD; J. F. SETCHEL; WHITTAKER AND CO.; SIMPKIN AND MARSHALL; AND E. HODGSON.

MDCCCXXXI.

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LONDON :

GILBERT & RIVINGTON, PRINTERS,

ST. JOHN'S SQUARE.

INTRODUCTION.

In consequence of the increasing demand which has for some time existed for standard works upon Botany, Horticulture, and Agriculture, occasioned by the growing taste of the age for the study of these sciences, the proprietors of "Miller's Gardener's and Botanist's Dictionary" have caused to be prepared the "General System of Gardening and Botany" contained in the following pages, which, together with the information comprised in the Dictionary of Miller, will combine the improvements and discoveries which the labours of modern writers have so amply contributed to the advancement of these sciences.

In the formation of this work it was found necessary to deviate from the alphabetical arrangement adopted in the Dictionary of Miller, in consequence of the numerous and almost daily changes which have taken place in the Botanical Nomenclature of late years, which have rendered that arrangement wholly useless as a mode of reference. It only remained, therefore, to choose between the Linnæan artificial method, and the Natural System of Jussieu; but the numerous advantages of the latter, particularly in an extensive work like the present, were too apparent to leave any doubt in the mind of the Editor as to which he ought to adopt. In a work, professedly intended to form a *Complete System of Vegetables*, including the practical parts of Gardening and Agriculture, that plan of arrangement must undoubtedly be the best which brings under one view the genera and species of plants according to their relations of affinity, and therefore of their properties. In the Linnæan artificial method, it often happens, that genera, intimately related, are separated far apart into different classes and orders, merely on account of the difference in the number of their stamens and pistils; a circumstance now found in many instances scarcely to be of sufficient importance, even to separate species, still less genera; and with regard to an alphabetical arrangement, it must be evident to every one conversant with the subject, that it cannot be employed with advantage in any branch of Natural History. The plan of the present work is founded on that of M. de Candolle, in his invaluable works entitled *Regni Vegetabilis Systema Naturale* and *Prodromus*, with such alterations as were rendered necessary by the rapid increase of science, and with numerous additions of new genera and species, amounting to more than a third of those enumerated by that learned botanist; so that, when finished, the work will be found to be the most complete system of Vegetables yet

published; comprehending, besides all the genera and species which have been published up to the present time, descriptions of numerous plants *never before published,* and derived chiefly from the *Lambertian Herbarium.* The characters of all the genera and species are derived either from the plants themselves, or from the original authorities where authentic specimens could not be procured.

The object of the present work is to give a complete history and description of every species of plant hitherto known, in an easy and intelligible form, so as to enable even beginners in the science to understand it fully, and to ascertain without difficulty not only the name and history, but also the characters and affinities of any genus or species, together with its properties and best modes of culture and propagation. The first two pages of the present volume contain an outline of the System, with explanatory drawings by Mr. Hart, engraved on wood by Mr. Sly; and a complete account of each order will be found in its proper place, illustrated also by drawings; while the peculiar features which separate the different families, genera, and species from each other have been carefully pointed out, with their respective qualities and properties. A synopsis of the genera, with their essential characters, follows the description of each order, and where the genera are numerous, they have been divided into tribes, which will greatly assist the reader in his examination of them. In a subsequent part of the work, a full and comprehensive description of each genus will be found, including the derivation of the names; and when these are derived from the Greek language, the original is given both in Greek and Roman letters, for the assistance of such of our readers as are unacquainted with the Greek characters. The proper accentuation of each name is also given. Where the species are numerous, they have, for the sake of convenience, been distributed into sections marked thus, Sect. I. Sect. II. &c.: they are occasionally divided again into subsections, marked thus, § 1., § 2., &c.: and sometimes they are still further distinguished by sub-divisions marked by stars, thus, * * * signifying 1, 2, &c. The names of the species are given with their original authorities, which are followed by their distinguishing characters, and with the usual signs indicative of the habit or duration of each species, whether tree, shrub, perennial, biennial, or annual; their habitation in the garden, whether hardy, frame, greenhouse, or stove, &c.; their native countries, and, as far as possible, the districts in which they are found, are noticed; followed by the synonymes, and any other particulars which are likely to assist the student, such as the colour of the flower, &c. The description of each species is followed by a line containing the literal translation of the name in italic characters, and the English name (where such exists); the time of flowering; and the date of the introduction of such as are grown in the British gardens; the height to which the plant, shrub, or tree commonly grows, and if a climber or twiner; thus:

Long-leaved Rock-rose. Fl. June, August. Clt. 1790. Shrub 3 feet high.

The culture and propagation is given at the end of each genus, while the culinary and agricultural plants, and those employed in medicine or used for economical purposes, together with the fruits, are treated at large under their respective species.

According to the system now universally followed of natural affinity, all plants are separated into two great divisions, namely, the *Vasculares* and *Cellulares*. The first of these divisions is again separated into two classes, the *Dicotyledoneæ* and the *Monocotyledoneæ*, distinctions which refer to the number of *cotyledons* of the *embryo*. The second division also comprehends two classes, the *Foliaceæ* and the *Aphyllæ*, characterised, as their names import, by their *leafy* or *leafless* habit. The first class, *Dicotyledoneæ*, is divided into four subclasses, namely, the *Thalamifloræ*, *Calyciflorœ*, *Corolliflorœ*, and *Monochlamydeæ*; of which the three first are distinguished by a *double floral envelope*, that is, by their flowers having both a *calyx* and *corolla*; and also by the insertion or situation of the *stamens*; while the fourth is distinguished by a *simple floral envelope*, which, by later writers, has been denominated a *perianth*, and frequently rivals a *corolla* in its colour. For farther details on these points the reader is referred to the first pages of the present volume. In the subclass *Thalamifloræ* the orders or families are subdivided into four groups or sections, depending on the number of the *carpels* and the situation of the *placentas*, see pages 2. 127. 379. and 814 of the present volume. By attending to these particulars the student will readily acquire a knowledge of the class, subclass, order, genus, and, finally, the species, to which any plant belongs. A beginner should first ascertain the volume comprising the *subclass* in which the plant he wishes to know is included, by dissecting a flower and observing the situation or insertion of the *stamens*; as, for instance, if a plant belongs to the *Dicotyledoneæ*, and possesses both *calyx* and *corolla*, and has its *stamens* inserted in the *receptacle*, the plant will be found in the First Volume; if the stamens are fixed in the *calyx*, or in a *disk* which adheres to the *calyx*, in the Second Volume; if in the tube of the *corolla*, in the Third Volume, which will also contain those plants possessing a *simple floral envelope*, with the *stamens* inserted in it. The second class, *Monocotyledoneæ*, comprising the Grasses, Reeds, Palms, Lilies, Pine-apples, Orchideous and Scitamineous plants, and all those having the veins of their leaves *simple (see page* 1. *f.* 1. 7-8.) and not branched, as in the *Dicotyledoneæ (see page* 1. *f.* 1. 3.) will be found in the Fourth Volume; which will also include the Ferns, the only family of the *Cellulares*, or *Cryptogamia*, which will be included in the work. Therefore, when the name and history of any particular plant are wanted, the *grand division* to which it belongs should be ascertained first; next the *class*, *sub-class*, *order*, and *genus*, and, finally, the *species*; for which purpose the numerous wood-cuts inserted throughout the work will be found of great assistance, as giving the peculiar features of the plants contained in the different orders.

Having thus endeavoured to give some idea of the nature of the arrangement adopted in the following pages, it now only remains for us to point out the nature of those characters on which the distinctions of ORDERS, GENERA, and SPECIES depend. The *orders* or *families* are founded on the same principles as the genera, being merely genera of a more comprehensive nature, as a genus is a group of species having a close relationship or affinity to each other, but whose characters are of a less important nature, than the order itself. When the *genera* of a particular order are numerous, they have been grouped into *sub-orders* or *tribes*, whose characters are of less importance than those of the *orders*, but greater than those of the *genera;* the characters on which all these are founded, are usually derived from the fruit, flowers, and seed, and the appearance of the leaves, whether *stipulate* or *exstipulate*, *alternate*, or *opposite;* but *species* differ from each other in the shape, nature, or position of the *leaves*, *petals*, *bracteas*, &c., and in the situation and disposition of the flowers. *Genera*, whereof the species are numerous, have been separated into sections and divisions, which may be termed *sub-genera*, being distinguished by characters of a lesser importance. *Varieties* are either minor distinctions depending upon soil, situation, habitation, culture, or colour of the flowers, but when they possess features of a more permanent nature they have been termed *sub-species*. ***Hybrids*** are plants arising from the commixture of two species, and which by impregnation partake of the nature and properties of both parents.

We shall conclude these introductory observations with an outline of the Linnæan artificial method, a knowledge of which may be of advantage to some readers of the system, as the Linnæan class and order are given at the beginning of each generic character in the body of the work: and with instructions for the management of hothouse plants, &c.

INTRODUCTION TO THE ARTIFICIAL SYSTEM OF LINNÆUS.

CLASSES.

FIRST GRAND DIVISION.

PLANTS with conspicuous flowers, that is to say, having the parts of fructification evident.

§ 1. Flowers hermaphrodite.

* *Stamens not united.*

Class I. MONANDRIA (from *μονος, one*, and *ανηρ ανδρος, a male*). Stamen one. Example *Canna.*

Class II. DIANDRIA (from *δις, twice*). Stamens two. Example *Veronica.*

Class III. TRIANDRIA (from *τρεις, three*). Stamens three. Example *Crocus* and *Valeriana.*

Class IV. TETRANDRIA (from *τετρας, four*). Stamens four. Example *Galium.*

Class V. PENTANDRIA (from *πεντε, five*). Stamens five. Example *Solanum.*

Class VI. HEXANDRIA (*ἕξ, six*). Stamens six. Example *Narcissus.*

Class VII. HEPTANDRIA (from *ἑπτα, seven*). Stamens seven. Example *Æsculus.*

Class VIII. OCTANDRIA (from *οκτω, eight*). Stamens eight. Example *Erica* and *Fuchsia.*

Class IX. ENNEANDRIA (from *εννεα, nine*). Stamens nine. Example *Rheum.*

Class X. DECANDRIA (from *δεκα, ten*). Stamens ten. Example *Rhododendron* and *Baptisia.*

Class XI. DODECANDRIA (from δωδεκα, *twelve*). Stamens twelve. Example *Sempervivum*.

Class XII. ICOSANDRIA (from εικοσι, *twenty*). Stamens indefinite, but usually twenty, inserted in the calyx. Examples *Prunus* and *Pyrus*.

Class XIII. POLYANDRIA (from πολυ, *many*). Stamens indefinite, inserted in the receptacle. Examples *Papaver* and *Ranunculus*.

Class XIV. DIDYNAMIA (from δις, *twice*, δυο, *two*, and νημα, *a filament*). Stamens twice two, four, two long, and two short. Examples *Lamium* and *Digitalis*.

Class XV. TETRADYNAMIA (from τετρα, *four*, δυο, *two*, and νημα, *a filament*). Stamens six, four long, and two short. Examples *Brassica* and *Sinapis*.

* * *Stamens united by the filaments.*

Class XVI. MONADELPHIA (from μονος, *one*, and αδελφος, *a brother*). Stamens united by the filaments in one body. Example *Malva*.

Class XVII. DIADELPHIA (from δις, *twice*, and αδελφος, *a brother*). Stamens united by the filaments into two bodies; in diadelphous pea-flowers the whole are usually connected in one body, with a single one only free. Examples *Fumaria* and *Pisum*.

Class XVIII. POLYADELPHIA (from πολυ, *many*, and αδελφος, *a brother*). Stamens united by the filaments into more than two bodies. Example *Hypericum*.

* * * *Stamens united by the anthers or tops into a cylinder.*

Class XIX. SYNGENESIA (from συν, *together*, and γενεσις, *origin;* in allusion to the flowers rising from a common receptacle.) Example *Leontodon*.

* * * * *Stamens attached to, and standing upon the pistil.*

Class XX. GYNANDRIA (from γυνη, *a female*, and ανηρ, *a male;* in allusion to the stamens being attached to the pistil). Example *Orchis*.

§ 2. Flowers of distinct sexes.

Class XXI. MONŒCIA (from μονος, *one*, and οικος, *a house*). Male and female flowers on the same plant. Examples *Begonia* and *Quercus*.

Class XXII. DIŒCIA (from δις, *twice*, and οικος, *a house*). Male and female flowers on different plants. Examples *Populus* and *Bryonia*.

Class XXIII. POLYGAMIA (from πολυ, *many*, and γαμος, *a marriage*). Male and female flowers on the same or on different plants along with hermaphrodite ones. Examples *Atriplex Acacia* and *Fraxinus*.

SECOND GRAND DIVISION.

Plants with inconspicuous flowers, that is to say, with the parts of fructification not evident.

Class XXIV. CRYPTOGAMIA (from κρυπτος, *concealed*, and γαμος, *marriage*). Reproductive organs hardly visible. Examples *Polypodium*, *Hypnum*, *Jungermannia*, *Conferva*, *Fucus*, *Lichen*, *Agaricus*, &c.

ORDERS.

Orders are principally formed from the number of styles, as the Classes are from the number of stamens, especially those in the first thirteen Classes, viz. MONOGYNIA, from μονος, *one*, and γυνη, *a female*, (and so on with the other orders). Style one. DIGYNIA, Styles two. TRIGYNIA, Styles three. TETRAGYNIA, Styles four. PENTAGYNIA, Styles five. HEXAGYNIA, Styles six. HEPTAGYNIA, Styles seven. OCTOGYNIA, Styles eight, &c. POLYGYNIA, Styles numerous.

The 14th Class, DIDYNAMIA contains two orders; the first is called GYMNOSPERMIA (from γυμνος, *naked*, and σπερμα, *a seed*). Seeds naked, not inclosed in a capsule. Example *Lamium*. The second ANGIOSPERMIA (from αγγειον, *a vessel*, and σπερμα, *a seed*). Seeds inclosed in a capsule. Example *Digitalis*.

The 15th Class, TETRADYNAMIA, also contains two orders. First, SILIQUOSA (from *siliqua*, a long pod). Pods long, as those of *Sinapis* and *Brassica*. The second SILICULOSA (from *silicula*, a short pod). Pods short, as those of *Lepidium* and *Biscutella*.

The 16th, 17th, 18th, 20th, 21st, and 22nd classes have their order formed from the number of stamens, exactly upon the same principles as those of the first thirteen classes, as MONANDRIA, DIANDRIA, TRIANDRIA, TETRANDRIA, PENTANDRIA, HEXANDRIA, HEPTANDRIA, OCTANDRIA, DECANDRIA, DODECANDRIA, and POLYANDRIA.

The 19th class, SYNGENESIA, contains five orders. First ÆQUALIS (from *æqualis*, equal). Florets of the disk and ray all hermaphrodite. Second SUPERFLUA (from *superfluus*, superfluous). Florets of the disk hermaphrodite, of the ray female. Third FRUSTRANEA (from *frustra*, in vain). Florets of the disk fertile, of the ray sterile. Fourth NECESSARIA (from *necessarius*, necessary). Florets of the ray female, of the disk male. Fifth

SEGREGATA (from *segregatus*, separated). Each floret having its own peculiar involucrum.

The 23rd class, POLYGAMIA, contains two orders, formed exactly on the same principles as the 21st and 22nd classes, called MONŒCIA and DIŒCIA.

The 24th class, CRYPTOGAMIA, contains nine orders, chiefly formed from the reproductive organs, which it is unnecessary to describe here further than to give the names and examples. First, FILICES, Ferns. Examples, *Polypodium*, *Osmunda*, *Aneimia*, *Ophioglossum*, &c. Second, EQUISETACEÆ, Horsetails. Example, *Equisetum*. Third, LYCOPODINEÆ, Club-mosses. Example, *Lycopodium*. Fourth, MARSILEACEÆ. Examples, *Isoetes* and *Pilularia*. Fifth, MUSCI, Mosses. Examples, *Phascum Hypnum*, &c. Sixth, HEPATICÆ. Examples, *Jangermannia* and *Marchantia*. Seventh, ALGÆ, Sea-weeds. Examples, *Exilaria*, *Nostoc*, *Conferva*, *Ulva*, *Sphærococcus*, *Fucus*, &c. Eighth, LICHENES. Example, *Lichens*. Ninth, FUNGI. Examples, *Agaricus*, *Clavaria*, *Morchella*, *Peziza*, *Sphæria*, &c.

GENERAL MANAGEMENT OF PLANTS GROWN UNDER GLASS.

Although we have given an account of the propagation and culture of the various GENERA in the body of the work, we think it expedient to describe the general management of ornamental plants grown under glass, such as *greenhouse*, *stove*, or *hothouse*, as well as *alpine plants*.

1. *Alpine plants* are such as will not grow in the open ground to any perfection, and must be protected during winter by a frame; they are mostly natives of high situations, among rocks and on the tops of mountains, and consequently of low growth, seldom, if ever, exceeding six inches. They should be grown in small pots, and will all thrive well in a mixture of loam, peat, and sand, the pots to be always well drained with potsherds; they should be shifted at least twice every season, and divided if the plant has grown too large; the mould which has been shaken from the pots, if not exhausted, to be mixed with new earth, and the plants potted afresh, after which they require a little water. If these instructions are attended to, alpine plants will always look healthy and neat.

2. *Greenhouse plants* are such as are natives of the Canary Islands, New Holland, and the Cape of Good Hope, and other countries in the same latitudes, which only require to be protected from frost in this country; therefore they are kept under glass during the winter. No fire is requisite, unless a strong frost is expected during the night. In winter they should have plenty of air given them upon fine days, as early in the day as the weather will permit; the house to be shut up very early in the afternoon, if cold. If the weather continues damp and wet, then a little fire is requisite to expel the damp, as greenhouse plants are more likely to be injured by damp than cold. The plants should be looked over every day, taking off any dead leaves, and watering those that are dry; this should be done early in the forenoon, and if the surface of the mould in the pots becomes green, it should be removed with a flat stick, but not so deep as to injure the roots, and a little fresh mould laid on instead. Towards spring they require a more plentiful supply of air and water, and when frost is not apprehended some of the sashes should be left a little open all night, and the air gradually admitted as the weather advances towards summer, until the time of setting the plants out of doors: in some seasons this may be about the middle of May, in others not until the end. Calm cloudy weather is the best time for setting them out, when the most sheltered situation should be chosen, where a bed of ashes should be previously prepared for them. There are various opinions as to the best time of shifting greenhouse plants into fresh pots and mould, but we think that the earliest spring time should be pre-

ferred; some shift them before they are set out of doors, some when they first set them out, others in the autumn, which last time is of all the most improper. The pots should be always well drained with sherds. If any of the plants have grown too straggling or tall, they should be cut back early in the spring, that they may become good bushy plants before autumn. In summer, while the plants are out of doors, if the weather is dry, they should be regularly and plentifully supplied with water, as late as possible every afternoon. The mould intended for shifting or potting off plants should never be sifted, but merely chopped up finely with a spade with the turf, for the turf and its roots are the best parts of the mould, keeping the soil light and loose, and allowing the roots of the plants to spread and the water to penetrate; sifted mould, on the other hand, hardens and becomes sour. The cuttings of greenhouse plants require to be put in at various seasons. From Christmas to the end of May is generally the best time, but this will depend entirely upon the state of the shoots required to make cuttings; for instance, if the cuttings require to be ripened, they should be planted early in the spring; but if they require to be young, the time to plant them is when the shoots have grown a sufficient length for that purpose. In potting off plants raised from cuttings, care is requisite not to injure the young fibres; at first they should be placed in very small pots, and afterwards shifted into pots of increasing size, as they grow, but care should be taken not to plant them in too large pots, or to give them too much water. The seeds of greenhouse plants should always be sown in pots as early as possible in the spring, placed in a little bottom heat; and the seedlings should be potted off separately when they have grown about an inch in height.

3. *Frame plants* require exactly the same treatment as greenhouse plants, excepting that they do not require any fire during winter, but only to be protected by mats from the frost.

4. *Stove plants* are such as are natives within the tropics, therefore require a great degree of heat and plenty of moisture at certain seasons of the year. They are usually of easy culture. The house in which they are grown should be very closely glazed, in order that the temperature may be very regular during winter, or in cold windy nights. The temperature of the house should never be allowed to fall below 60° of Fahrenheit in winter; and in fine days, when it rises to 70°, a little air may be given; but early in the afternoon it should be shut up close. Formerly the pots of stove plants were plunged in tan, but this method is now entirely exploded, and a bed of gravel or sand is substituted, which is greatly preferable for the health of the plants, as well as the diminution of expense. The houses may be either heated with hot water, or with steam conveyed through pipes, or by means of fires; but we consider the two first methods preferable, as giving a more congenial heat. As stove plants are apt to be infested by insects, such as the green fly, the red spider, and the mealy bug, the first may be destroyed by the smoke of tobacco, the second by sulphur-vivum, mixed up in a pail of quick lime, with which the flues should be washed all over, which is a certain means of exterminating them. The mealy bug and scaly bug are only to be got rid of by removing them with a small hair brush; for this purpose the plants should be examined as often as possible. The plants should be washed from an engine in fine weather, and the house kept warm, by which means they will be always kept clean and healthy. Air should be admitted as early as possible in the morning, in warm weather, taking care to shut up early in the afternoon, that the house may be kept to a proper temperature during the night. The time for re-potting them is early in the spring, and the pots always require to be drained with sherds, which keeps the mould loose and free from being soddened with water. The time at which cuttings should be planted is

the same as that for greenhouse plants when the wood is fit, but these require heat. Seeds of stove plants should be sown immediately on their arrival from abroad, although the general time of sowing should be early in spring. A gentle hot-bed is the best for raising tropical seeds, but some few will come up better on a shelf or flue in the hothouse, and the sooner seedlings are potted off separately the better.

5. *Succulent* plants, so called, are such as have a fleshy nature; these are called dry greenhouse or dry stove plants, and consequently require to be grown in the same temperature as greenhouse and stove plants, being natives of the same latitudes. In some gardens there are houses entirely appropriated for these plants, where they are placed on stages or shelves, and kept rather dry throughout the winter; but in gardens where there are not houses entirely appropriated for them, they should be kept on shelves erected for this purpose in a stove or greenhouse.

6. *Cuttings* are slips cut from the mother plant for the purpose of setting, in order that they may make roots, and form young plants. A small house should be appropriated to the propagation of these, but if this cannot be had, a frame may be used, situated so as to have the morning sun only; otherwise, shading with mats will be necessary. Those requiring heat should be plunged in a bed of tan, or placed in a hot-bed. Cuttings of woody plants take root best in fine sand, as they both strike more freely in it, and are safer to pot off after being rooted, as the sand shakes clean from their roots, which is not the case when they have been planted in mould. But some of the soft wooded kinds will not strike well in sand, therefore they must be planted in mould. In making cuttings no leaves should be taken off or shortened, except in that part which is to be buried in the ground, where they should be cut off as close to the stem as possible. The more leaves a cutting has on it the sooner it will root, and the shallower they are planted the better, but they must be well fastened in the ground. The pots in which they are planted should be well drained with sherds, and kept rather moist, but not too wet, and the hand or bell-glasses with which they are covered, should be taken off and wiped occasionally. When the cuttings are rooted and have been potted off, they require to be placed in a frame for a few days and shaded; after this they should be hardened by degrees.

Where plants cannot be easily raised from cuttings or layers, budding, inarching, and grafting must be resorted to, on some other plant nearly related. To describe all the different methods of grafting, budding, inarching, and layering, would occupy considerable space, and would be of little service, since all practical men are acquainted with the most useful methods, and it would be quite impossible to describe these to others without drawings.

In procuring loam and peat for potting plants, the top spit is always to be preferred, with the turf on it, and as fresh as possible. Where peat cannot be had, decayed leaves or wood may be substituted. The lighter and more sandy loam is the better, as it will require to have less peat and sand mixed with it. A certain quantity of sand is always a proper ingredient in mould intended to be used in potting or shifting plants.

The culture and propagation of hardy trees and shrubs, herbaceous, perennial, biennial, and annual plants, epiphytes and bulbs, are amply detailed at the end of their respective genera.

A LIST OF THE ABBREVIATIONS AND SIGNS USED.

Cult. Culture and propagation.
Clt. Cultivated since.
Fl. Flowering.
Tr. Tree.
Sh. Shrub.
Pl. Plant.
Var. Variety.
cl. climbing.
tw. twining.
ft. foot or feet.
fl. floating on water.
tr. or *trail.* trailing.
pr. procumbent.
Lin. syst. Linnæan system.
Hort. or *Hortul.* signifying of the gardens or of gardeners.
Sect. Section, a division of species.
v. s. herb. Lamb. See Specimen in the Lambertian herbarium.
l. c. in loco citato, signifying in the place or work cited above.

D. Dry, succulent plants requiring a dry atmosphere.
S. Stove or hothouse.
G. Greenhouse.
F. Frame.
H. Hardy.
W. Aquatic.
B. Bog.
ħ. Tree or shrub.
♃. Perennial herbaceous.
♂. Biennial.
⊙. Annual.
◡. Climber.
◠. Twiner.
† Doubtful, not ascertained.
?. Expresses a doubt.
§ Indicating subsections or divisions of orders, genera, and species.
* Stars indicate divisions of species founded on slight characters.

GLOSSARY

OF

BOTANICAL AND MEDICAL TERMS USED THROUGHOUT THE WORK.

A.

A in composition signifies without, as aphyllus, without leaves; acaulis without a stem.

Abbreviate, used in comparative descriptions, indicates that one part is shorter than another.

Aberrant, deviating from the natural or direct way; applied in natural history to species or genera that deviate from the usual characters of their neighbours.

Abortion, signifies an imperfect development.

Abruptly-pinnate, leaves pinnate without a terminal or odd leaflet.

Abstergent, cleansing; having a cleansing quality.

Accessory, something added to the usual number of organs.

Accrete, grown together.

Accumbent, lying on, prostrate, supine; this term is employed in *Cruciferæ* to signify a radicle which lies upon the edge of the cotyledons.

Acerose, needle-pointed, fine, and slender, with a sharp point.

Acetarious, any thing belonging to the salad tribe of vegetables.

Acicular, needle-shaped, shaped like a needle.

Acinaciform, shaped like a scimitar.

Acutangular, having sharp or acute angles.

Acumen, a taper point.

Acuminate, acuminated, having a taper point.

Acuminately-cuspidate, taper-pointed, and ending in a bristle.

Adglutinated, glued together, or to any thing else; usually applied to filaments and anthers.

Adnate, adhering to any thing; anthers are said to be adnate when they are attached to the filament by their whole length.

Adult, the full grown of any thing; full grown leaves are adult leaves.

Æruginous, having a colour like that of ærugo, or verdigris.

Æstivation. The calyx and corolla of a flower is said to be in æstivation when in the bud, before expansion.

Agglomerate, *Agglomerated*, collected into a heap or head.

Aggregate, *Aggregated*, gathered together, usually applied to the inflorescence.

Agrumi, a name given by the Italians to any kind of lemons.

Akenium, an indehiscent pericarp, containing a single seed, which does not adhere to it; it is synonymous with seed in the Linnæan language.

Albumen, the substance under the inner coat of the testa of seeds, surrounding the embryo; it is sometimes absent.

Albuminous, furnished with albumen; see that term.

Alburnum, the young wood before it comes to a proper consistence.

Alembick, a vessel used in distilling, or acting like a still.

Alkalescent, having the properties or effects of alkali.

Alkali, any substance which, when mingled with acid, produces fermentation.

Alternating, alternate with any thing mentioned.

Alveolate, resembling a honey-comb.

Alvine, of or belonging to the intestines.

Ament, *Amentum*, a catkin, mode of inflorescence, as the hazel and the willow.

Amylaceous, having the properties of starch.

Anastomosing, uniting of vessels, veins, or nerves.

Androgynous, producing both male and female blossoms on the same plant, or in the same spike or head.

Anfractuous, full of turning and winding passages.

Angular, having angles, or forming angles.

Angularly-toothed, being toothed in such a manner as to form angles.

Annulations, rings or circles.

Annular, circular, producing a ring or circle.

Anterior, growing in front of some other thing.

Anthelmintic, capable of killing worms.

Antheriferous, bearing anthers.

Anthophorum, an elongated receptacle on which the petals, stamens, and ovary are seated.

Anthers, the male parts of a flower containing the fecundating matter.

Anti-pestilential, efficacious against pestilence.

Anti-phrasis, the use of words in a sense opposite to that of some neighbouring parallel sentence.

Anti-scrophulous, anti-scorbutic, efficacious against scurvy.

Anti-septic, efficacious against putrefaction.

Aperient, having a slight purgative quality.

Apetalous, without petals.

Apex, the summit of any thing.

Aphthous, resembling something covered with little ulcers.

Apiculate, *Apiculated*, terminating in a little point, terminated.

Apophysis, a swelling beneath the theca of mosses.

Appendages, that which is attached, in *Caryophylleæ*, the crown of the petals.

Appendent, *Appendant*, hanging, an approach to pendulous.

Appendiculate, *Appendiculated*, having appendages.

Appendix, any thing that is attached, a process.

Appressed, *Adpressed*, pressed close to any thing. When hairs lie flat upon the surface of a leaf or stem, they are said to be appressed.

Approximate, *Approximated*, *Approximating*, near together.

Apterous, without wings, or the membranous margins, which botanists call wings.

Aquatic, growing in water.

Arboreous, being a tree as distinguished from frutescent.

Arborescent, having a tendency to become a tree.

Arcuate, *Arcuated*, curved or bent like a bow, forming an arch.

Arched. See *Arcuate*.

Areolæ, little spaces or areas on the surface of any thing; the spaces between the cracks in lichens are the areolæ.

Areolate, *Areolated*, having areolæ; the adjective of the last word.

Aridity, dryness.

Aril, *Arillus*, a process of the placenta adhering to the hilum of seeds, and sometimes enveloping them; a peculiar substance covering the seeds.

Arillate, having that peculiar appendage called arillus; the term is only applied to seeds.

Aristate, *Aristated*, having a beard or awn, as the glumes of barley.

Aroma, the spicy quality of a thing.

Articulate, *Articulated*, jointed, having joints.

Articulations, the places where one thing is jointed with another; another word for joints.

Ascendant, *Ascendent*, *Ascending*, at first trailing on the ground, then rising erect, forming a curve.

Asci, small tubes in which the sporules of cryptogamic plants are placed.

Ascigerous, having asci.

Assurgent, rising upwards.

Attenuate, *Attenuated*, tapering gradually to a point.

Auriculate, *Auriculated*, *Auricled*, having ear-like appendages.

Auricles, ear-like appendages.

Auriculately-sagittate, eared at the base, so as to give the leaf the appearance of the head of an arrow.

Auriculately-stem-clasping, having auricles at the base clasping the stem; applied to leaves.

Awl-shaped, narrow-pointed, resembling an awl.

Awned, terminating in an awn or sharp point.

Awnedly-acuminated, tapering to a point, and terminating in an awn.

Awns, the beard of corn or any thing else.

Axil, *Axillæ*, literally the arm-pit; in plants applied to the angle formed by the union of the leaf and stem.

Axil-flowering, flowering in the axils of the leaves.

Axillary, placed in the axils or axillæ.

Axis, the line, real or imaginary, that passes through any thing, usually applied to the central placenta of fruit; the axis of a spike of flowers is the stem to which the flowers are attached.

B.

Baccate, berried, fleshy.
Barred, crossed by a paler colour in spaces resembling bars.
Basilar, situated at the base of any thing, usually applied to the embryo when situated at the bottom of the seed.
Beak, any thing which resembles the beak of a bird, hard, sharp points; in *Aconitum* the point which ends the helmet or upper sepal.
Beaked, having a beak.
Bearded, having long hair like a beard.
Beardless, destitute of a beard.
Berry, a fleshy fruit, containing many seeds, as the gooseberry and grape.
Biauriculate, having two auricles.
Bibracteolate, furnished with two small bracteas; which see.
Bibracteate, furnished with two bracteas. See *Bracteas*.
Bicallose, *Bicallous*, having two small callosities or protuberances.
Bicrenate, twice crenate. See *Crenate*.
Bicuspidate, having two points.
Bidentate, having two teeth.
Biennial, a plant is biennial, which requires two years to bear its fruit, and then dies.
Bifarious, any thing placed in two opposite rows.
Bifariously-imbricated, any thing placed in two opposite rows, as well as being laid over each other, like the tiles of a house.
Bifid, divided at the top in two parts, two cleft.
Bifidly-umbelliferous, having an umbel of flowers divided into two parts or divisions.
Bifoliate, having two leaves or leaflets.
Bifoveolate, having two hollows.
Bifurcation, the division of a stem when it is divided like a fork into two branches.
Bifurcate, twice forked, or having two forks.
Bigeminate, twin, each division bearing a pair of leaflets.
Bigibbous, *Bigibbose*, having two protuberances.
Biglandular, having two glands.
Biglobose, formed into two round heads.
Bilabiate, having two lips.
Bilamellate, *Bilammellate*, having two plates or divided into two parts.
Biligulate, having two ligulæ, or strap-shaped appendages.
Bilocular, containing two cells, or divided into two cells, or departments.
Bimaculate, having two spots of any colour.
Binate, having two leaflets, twin.
Biovulate, containing two ova, or young seeds; seeds before they are mature are called ova.
Bipartite, divided into two parts.
Bipinnate, twice pinnate. See *Pinnate*.
Bipinnate-parted, divided in a bipinnate manner but not to the base.
Bipinnatifid, twice pinnatifid. See *Pinnatifid*.
Biplicate, having two plaits.
Birimose, having two longitudinal chinks, or fissures.
Bisaccate, having two little sacks, bags, or pouches.
Biscutate, resembling two bucklers.
Biserrate, *Biserrate-toothed*, twice cut, like the teeth of a saw.
Bistipulate, furnished with two stipulas. See *Stipulas*.
Bisulcate, having two furrows.
Biternate, twice ternate. See *Ternate*.
Bivalved, two valved. See *Valved*.
Blanching, made white by being grown in a dark place, or by being covered with any thing.
Bland, fair, beautiful.
Blight, a vague term, signifying a pestilence among plants, caused by the attack of insects, or of parasitical fungi.
Blistered, having the surface raised, as the skin is when blistered.
Brachiate, having arms or branches, usually placed opposite to each other nearly at right angles with the main stem, and crossing each other alternately.
Bracteate, having bracteas.
Bracteolate, having small bracteas.
Bracteoles, small bracteas.
Bracteas, small leaves placed near the calyx on the peduncle or pedicel.
Bractless, destitute of bracteas.
Branchlets, small branches.
Bristles, stiff hairs.
Bristly, covered with stiff hairs.
Bristly-toothed, having teeth like bristles, or with the teeth ending each in a bristle.
Bud, the flower or leaves before expansion are said to be in the bud.
Bulbiferous, bearing bulbs.
Bulbs, underground buds, resembling roots, consisting of numerous fleshy scales, placed one over the other.
Burry, covered with hooked stiff hairs, like the heads of the burdock.

C.

Caducous, falling off soon.
Cæsious, grey.
Cæspitose, growing in little tufts.
Calcarate, spurred, or having a spur.
Calceiform, formed like a little shoe.
Calli, small callosities, or little protuberances.
Callose, callous, hardened.
Callously-glandular, having hardened glands.
Callously-serrated, having hardened serratures.
Calyciform, formed like a calyx.
Calycine, of or belonging to the calyx.
Calyculate, *Calyculated*, having bracteas so placed as to resemble an external or additional calyx.
Calyptra, literally an extinguisher, applied to the body which covers the theca in mosses; any thing in the shape of an extinguisher.
Calyptrate, resembling an extinguisher.
Calyptriform, shaped like an extinguisher.
Calyx, the outer envelope of a flower, as the corolla is the inner.
Campanulate, shaped like a bell.
Canaliculate, channelled or furrowed.
Cancellate, latticed, resembling lattice-work.
Canescent, hoary, approaching to white.
Capillary, very slender, resembling a hair.
Capillaceous, very slender, resembling a hair.
Capillaceously-multifid, *Capillary-multifid*, divided into many slender hair-like segments.
Capitate, growing in a head; a stigma is said to be capitate when it is large, round, and blunt.
Capitately-glomerate, growing in a clustered head.
Capitellate, *Capitular*, *Capitulate*, growing in small heads; a stigma is said to be so when it is small, round, and blunt.
Capituli, small heads.
Capsule, a dry fruit.
Capsular, like a capsule.
Carbonized, burned to coal.
Carina, a keel like that of a boat; also the lower petal of a pea-flower.
Carinate, keel-shaped.
Carinately-winged, having a wing resembling a keel.
Carinately-concave, hollowed in such a manner as to resemble a keel externally.
Cariopsis, or *Cariopsides*, a 1-celled, small, indehiscent pericarp, adhering to the seed which it contains, as the grain of grasses and clematis.
Carminative, medicines which promote perspiration.
Carnose, fleshy, thick substance.
Carpel, *Carpels*, *Carpella*, the small parts of which compound fruits are formed, as those of *Ranúnculus*, *Pæònia*, and *Aconìtum*.
Carpelled, having carpels.
Carpology, the science which treats of the structure of fruits and seeds.
Cartilaginous, gristly.
Cartilaginously-toothed, having gristly teeth.
Cartilaginously-serrated, having gristly serratures.
Caruncle, a small protuberance.
Carunculate, having a caruncle.
Cataplasm, a plaster.
Catarrhal, of or belonging to a cold.
Cathartic, purgative.
Catkin, inflorescence of the natural order *Amentàceæ*, as the willow.
Caudate, tailed, having a process like a tail.
Caudex, the trunk or stem of palms and ferns.
Caudicula, a small membranous process, on which the pollen of orchideous plants are fixed.
Caulescent, acquiring a stem, having a kind of stem.
Caulicule, the little stem in the embryo which unites the cotyledons with the radicle.
Cauline, of or belonging to the stem.
Caustic, having a burning quality.
Cautery, that which burns.
Cellular, composed of cells.
Cell, the hollow part of a capsule, in which the seeds are lodged, and the part of anthers which contains the pollen.
Celled, having cells, 1-2-3 or 4-celled, having 1-2-3- or 4 cells or departments, and so forth.
Central-angle, *Central-axis*, *Central-column*, the column in the centre of fruits to which the seeds are sometimes attached, and sometimes the partitions.
Central-placenta, the column in the centre of fruits to which the seeds are attached.
Cephalic, medicinal to the head.
Ceraceous, wax-like.
Cernuous, nodding, drooping, or pendulous.
Chaffy, bearing processes resembling chaff.
Chalaza, a spot on the seed, indicating where the vessels of the raphe terminate.
Channel-leaved, folded together, so as to resemble a channel for conducting water.
Channelled, having a channel or channels.
Charred, blackened by fire.
Chlorosis, the green sickness, a disease so called.
Chinks, longitudinal fissures.
Chinked, having longitudinal fissures.
Chrysalis-like, like the chrysalis of an insect.
Ciliæ, hairs like those of the eye-lash.
Ciliated, *Ciliary*, surrounded by hairs like those of the eye-lash.
Ciliately-toothed, having teeth like the hairs of the eye-lash.
Ciliary-scabrous, having rough ciliated margins.
Ciliary-serrated, *Ciliately-serrated*, having serratures like ciliæ.
Ciliately-jagged, having unequal notches like ciliæ.
Ciliately-plumose, having long hairs on the edges like the feathers of a quill.
Cinereous, ash-coloured, or coloured like ashes, grey.
Cinereously-canescent, between white and ash-coloured.
Cinereously-glaucous, between sea-green and ash-coloured.
Cinereously-pubescent, covered with grey pubescence.
Cinereously-tomentose, covered with grey tomentum.
Cinereously-villous, covered with grey villi.
Cingalese, inhabitants of or belonging to Ceylon.
Circinate, *Circinnate*, curled round like a sharp crook, to make a circle.
Circinal, resembling a circle.
Circinately-revolute, curled round like a circle.
Circinately-trochleate, curled round like a pully.
Cirrhose, *Cirrhous*, tendrilled, having tendrils or claspers, as the pea.
Cirrhiferous, bearing tendrils or claspers.
Clammy, viscid, sticky.
Clathrate, latticed, divided like lattice-work.
Clavate, *Clavated*, club-shaped, shaped like a club, the thick end uppermost.
Clavellose, having club-shaped processes.
Clavus, a name for the ergot, a disease in corn.
Claws, the unguis of petals, the narrow end.
Clawed, having claws.

Cleft, divided, but not exactly to the base, split.
Clinandrium, that part of the column of orchideous plants in which the anther lies.
Closed, that which is closed up, leaving no aperture; the throat of a flower with hairs or other processes; pressed together, not spreading
Close-pressed, when any thing lies quite close upon a surface it is said to be close-pressed.
Clustered, disposed in clusters.
Clypeate, shaped like a Roman buckler.
Coadunate, united together, soldered together.
Coarctate, pressed together.
Cobwebbed, covered as if with a cobweb.
Cochleate, *Cochleated*, twisted so as to resemble the shell of a snail.
Cocculiferous, bearing coccula.
Cocculum, a kind of cell which opens with elasticity; a kind of membranous spring.
Cohering, connected.
Coleorhiza, a little sheath which tips the radicle in cruciferous plants.
Collapsion, the act of closing or falling together.
Columella, the axis of the fruit in mosses.
Columnar, formed like a column.
Compact, close, crowded.
Complanate, flattened.
Complicate, *Complicated*, folded together.
Compound, used in botany to express the union of several things in one; thus a compound umbel is formed by several simple umbels; if above one it is always called compound; a compound flower by several simple flowers; a compound leaf by several smaller leaflets.
Compressed, pressed together, and flattened.
Concave, hollow.
Concave-cucullate, hollowed out in the form of a hood.
Concentric, points or lines at equal distances from a common centre.
Concrete, formed into one mass, or joined together.
Conduplicate, twice doubled, or twice folded.
Cone. See *Strobile*.
Conferruminate, *Conferruminated*, united together, so as to be undistinguishable.
Confluent, running into one another at the base or apex.
Conglutinate, glued together into one mass.
Conico-cylindrical, form of a cylinder, but tapering to a point.
Conico-subulate, awl-shaped and conical, tapering to a point.
Conical, resembling a cone in shape.
Conically-subulate, between cone-shaped and awl-shaped, thickest at the base.
Conic-ovate, between egg-shaped and conical.
Conjugate, joined by pairs, chiefly applied to leaves.
Connate, joined together at the base. When two opposite leaves are joined together at the base, with the stem running through the centre of the joined part, it is called a connate leaf.
Connivent, *Conniving*, converging, lying close together.
Conoid, shaped like a cone.
Constricted, tightened or contracted in some particular place.
Continuous, uninterrupted connection.
Contiguous, so close as to touch one another.
Contortuplicate, twisted in plaits.
Contracted, narrowed in some particular place.
Convex, rising in a circular form.
Convolute, rolled together, or over each other.
Coralloid, like coral.
Cordate, formed like a heart in cards.
Cordate, when it is joined by a hyphen to another word, signifies a figure between the two, as *cordate-reniform*; *cordately-reniform*, a figure between heart-shaped and kidney-shaped; *cordate-triangular*, a form between heart-shaped and triangular; *cordate-roundish*, circular and cordate; *cordate-oblong*, oblong and cordate; *cordate-sagittate*, *cordately-sagittate*, between heart-shaped and arrow-shaped; *cordate-auriculate*, having auricles at the base, so as to give the leaf the figure of a heart; *cordate-orbicular*, a figure between a heart and a circle; *cordate-lanceolate*, *cordate-peltate*, a form between that of a buckler and a heart.
Coriaceous, the consistence of leather, thick and tough.
Corolla, the inner envelope of a flower; the coloured part of a flower, composed of a petal or petals. The term is only applied when the calyx is present; otherwise it is called a *perianth*, which see.
Corollaceous, like a corolla, a corolla.
Corollate, like a corolla.
Corneous, horny, of the consistence of horn.
Corniculate, *Corniculated*, having processes like small horns, or like horns.
Corona, literally a crown; applied in botany to the crown-like cup which is found at the orifice of the tube of the corolla in *Narcissus* or other flowers.
Corpuscle, a small body, a particle of any thing.
Corroborant, strengthening.
Corrosive, having the power to eat away.
Corrugate, *Corrugated*, wrinkled or shrivelled.
Cortical, of or belonging to bark.
Corticate, like bark.
Corymb, a raceme or panicle, in which the stalks of the lower flowers are longer than those of the upper, so that the flowers themselves are all on the same level.
Corymbiferous, bearing a corymb.
Corymbose, formed or arranged in the manner of a corymb.
Corymbosely-cymose, arranged in a manner between a corymb and a cyme.
Corymbosely-fastigiate, between fastigiate and corymbose.
Corymbosely-racemose, arranged between racemose and corymbose.
Corymbosely-umbellate, arranged in a manner between an umbel and a corymb.
Corymbulose, formed of many small corymbs.
Cosmetic, beautifying.
Costate, ribbed, any longitudinal elevations.
Cotyledons, seed-leaves, the first leaves from seed.
Creeping, spread upon the ground, and rooting at the joints.
Crenatures, the notchings.
Crenæ, round notches.
Crenate, or *Crenated*, having round notches.
Crenate-angular, crenate and angular.
Crenulate, full of small round notches.
Crenately-serrated, *Crenate-serrate* or *serrated*, with notched serratures; that is to say, something between crenated and serrated.
Crenately-lobed, so deeply crenated as to appear lobed.
Crenate-toothed, between crenate and toothed.
Crenately-denticulated, between crenate and toothletted.
Crenulate, *Crenulated*, having small round notches.
Crest, applied to some elevated appendage, terminating a particular organ; a stamen is crested when the filament projects beyond the anther, and becomes dilated; a petal is crested when it is terminated by a fringed appendage, or an appendage in any part.
Crested, having a crest.
Crestedly-toothed, toothed in a crested manner.
Cretaceously-pruinose, covered with white glittering spots or pustules.
Cribriform, riddled with holes like a sieve.
Cribrose, perforated like a sieve.
Crowned, terminated by any thing; in *Carophylleæ* the petals are said to be crowned when they are furnished with the appendages in the throat.
Cruciate, shaped like a Maltese cross. A flower is said to be cruciate, when four petals are placed opposite each other at right angles.
Cruciferous, the name of a particular family of plants, bearing cruciate flowers.
Cruciately-opposite, placed opposite, so as to form right angles.
Crustaceous, having a hard brittle crust.
Crystalline, consisting of or resembling crystals.
Cucullate, a leaf is said to be cucullate when its edge is curved inwards in such a manner as to represent the cowl or hood of a monk.
Cucullately-saccate, a form between cucullate and saccate.
Culm, the stem of grasses, scitamineous plants, and the like.
Culmiferous, producing culms.
Cultrate, *Cultriform*, shaped like a pruning knife.
Cuneate-obovate, *Cuneate-ovate*, a form between obovate and wedge-shaped, and between egg-shaped and wedge-shaped.
Cuneate, *Cuneated*, *Cuneiform*, wedge-shaped, the broadest end uppermost, tapering to the base.
Cuneiform-ovate, between wedge-shaped and egg-shaped.
Cuneately-lanceolate, between wedge-shaped and lanceolate.
Cup, the same as *Corona*, any thing in the shape of a cup.
Cupula, *Cup*, the cup of an acorn, and such like fruits.
Cupulate, *Cupuliform*, shaped like a cup or reversed bell.
Cuspidate, when a leaf suddenly tapers to a point it is so called.
Cuspidately-serrated, when serratures end abruptly in a point they are so called.
Cutaneous, relating to the skin.
Cuticle, the scarf, skin, or epidermis.
Cut-toothed, cut and toothed at the same time.
Cyathiform, cup-shaped, concave.
Cylindraceous, having the form of a cylinder.
Cylindrical, cylinder-shaped, round.
Cylindrically-campanulate, between bell-shaped and cylinder-shaped.
Cylindrically-conical, cylindrical and conical, tapering to the apex
Cylindrically-globose, a form between a cylinder and a sphere.
Cymbiform, having the shape of a boat.
Cyme, a mode of inflorescence resembling a flattened panicle, as that of the *Elder*.
Cymiferous, bearing cymes.
Cymose, flowering in cymes.

D

Decandrous, having 10 stamens.
Deciduous, falling off; leaves which are shed annually are said to be deciduous, as are also trees that annually lose their leaves.
Declinate, bending downwards.
Decompound, a leaf is said to be decompound when it is twice or thrice pinnate; a panicle, when its branches are also panicled, &c.
Decorticated, disbarked, the bark fallen off or taken off.
Decumbent, lying down on the ground.
Decurrent, running down; a leaf is said to be decurrent when it extends down the leaf-stalk or stem.
Decussate, *Decussated*, leaves and branches are said to be decussate, when two right lines cross each other at right angles, forming a kind of square, or four angles.
Decussately-opposite, applied to leaves when they are opposite and form right lines, cross each other at right angles and form a square.
Definite, that which may be counted, a regular number.
Deflexed, bent downwards.
Dehiscent, gaping, opening; an expression applied to the mode in which the anthers or the fruit burst open and discharge their contents.

Deliquescent, melting away on exposure to the air heat.
Deltoid, shaped like the Greek Δ.
Deltoid-ovate, having an outline between the shape of an egg and a Δ.
Demulcent, having the property of softening any thing.
Dentate, having the margin divided into incisions resembling teeth.
Dentately-ciliated, *Dentately-fringed*, having the margin toothed and tipped with hairs.
Dentately-lobed, toothed so deep as to appear lobed.
Dentately-pinnatifid, toothed so deep as to appear pinnatifid.
Dentately-runcinate, toothed so deep as to appear runcinate.
Dentately-serrated, having the margin divided into incisions, resembling the teeth of a saw.
Dentately-sinuated, having the margin scolloped and toothed.
Denticulate, *Denticulated*, having the margins finely and slightly toothed.
Denticulately-serrated, having the margins finely toothed, resembling a very fine saw.
Denticulately-ciliated, having the margin so finely toothed as to appear edged with hairs.
Denticulately-scabrous, having rough denticulations.
Denticulations, very small teeth.
Deobstruent, having the power of removing obstructions, a term in medicine.
Dependent, hanging down.
Depressed, pressed down, low, having the appearance of being pressed.
Depurated, purified, cleansed.
Despumate, to throw out a froth or scum.
Detergent, detersive, having the power of cleansing; a term in medicine.
Diadelphous, stamens are said to be so when they are connected into two bodies.
Diandrous, having two stamens.
Diaphanous, transparent.
Diaphoretic, promoting perspiration.
Dichotomous, ramifying in pairs.
Dichotomously-branched, branched in a dichotomous manner. See *Dichotomous*.
Dichotomously-panicled, having a panicle divided in a dichotomous manner.
Didymous, two, united, usually applied to the fruit when they appear twin.
Didynamous, having two long stamens and two short ones in the same flower, each pair being collateral.
Dietetic, relating to food or diet.
Difform, *Difformed*, two forms, used to express irregularity.
Diffuse, scattered, widely spread.
Diffusible, such as may be spread.
Digitate, *Digitated*, fingered; shaped like the hand spread open.
Digitately-lobed, lobed in a digitate manner. See *Digitate*.
Digitately-pinnate, pinnated in a digitate manner.
Digynous, having two styles or female organs.
Dilated, widened.
Diluent, something diluting.
Dimidiate, halved, divided into two parts.
Diœcious. When a plant bears female flowers on one individual and males on another, it is called diœcious.
Disciform, having the form of a disk. See *Disk*.
Discoid, when in compositæ the florets are all tubular, the head of flowers is said to be discoid. In other cases, when the florets of the centre of a head of flowers are more perfect than the rest, they are called discoid. Finally, when any thing is dilated into something which may be compared to a disk, the term discoid is also made use of.
Disk, the fleshy annular process that surrounds the ovary in many flowers; a receptacle which adheres to the calyx; also the surface of a leaf; also the centre of a head of flowers of compositæ.
Discutient, having the power to scatter the matter of tumours; a term in medicine.
Dissepiment, the partitions by which a seed-vessel is divided internally.
Distich, *Distichous*, producing leaves, flowers, or branches in two opposite rows.
Distinct, separate, not joined nor meeting together.
Di-trichotomous, divided in twos or threes; stems continually dividing into double or treble ramifications: the term is sometimes applied to a panicle of flowers.
Diuretic, having the power of promoting the flow of urine.
Divaricate, *Divaricated*, *Divaricating*, growing in a straggling manner.
Divergent, *Diverging*, going far from one point, or far asunder; applied to branches and leaves.
Dodecandrous, having 12 stamens.
Dolabriform, having the form of an axe or hatchet.
Dorsal, on the back, or growing on the back.
Dots, may be either pellucid, resinous, or hairy.
Doubly-serrated, twice serrated. See *Serrated*.
Down, soft short hairs like down.
Downy-villous, covered with long soft hairs like down.
Downy-pubescent, soft short down, closely pressed to the surface.
Drastic, applied to medicines which act violently.
Drupe, a kind of fruit consisting of a fleshy succulent rind, and containing a hard stone in the middle—olive, plum, cherry.
Drupaceous, form of a drupe, fleshy.
Dyspepsia, difficulty of digestion; a term in medicine.

E.

Eared, having ears or appendages.
Echinate, *Echinated*, covered with prickles, like a hedgehog.
Edible, eatable.
Effuse, applied to inflorescence, and means a kind of panicle, with a very loose 1-seeded arrangement.
Effusely-panicled, panicled in an effuse manner.
Electuaries, a medicine of conserves and powders, the consistence of honey.
Elephantiasis, a disease in which the limbs become prodigiously swollen and finally fall off.
Elevated, any thing that rises above the surface.
Ellipsoid, form of an ellipsis.
Elliptic, *Elliptical*, formed like an ellipsis, an oval figure.
Elliptic or *elliptical*, when joined by a hyphen to another word, signifies a form between the two words; thus, *elliptic-spatulate*, *elliptic-lanceolate*, *elliptically-spatulate*, *elliptical-ovate*, *elliptical-obovate*, &c.
Elongated, lengthened out.
Emarginate, having a small notch at the end or tip.
Emarginately-2-lobed, so deeply emarginate as to form two lobes.
Embossed, projecting in the centre like the boss, or umbo, of a round shield or target.
Embracing, a leaf is said to embrace a stem when it clasps it round with its base.
Embryo, the young plant in the seed.
Emetic, that which produces vomiting.
Emersed, applied to those leaves of water plants, which are above the water.
Emmenagogue, any medicine that promotes menstruation.
Emollient, softening.
Emulsions, medicines made of bruised oily seeds.
Endocarp, the inner membrane of fruit which forms the cells, usually under the sarcocarp. It is various in consistence.
Endopleura, the inner coat of seeds under the spermaderm.
Endosperm, the same as albumen.
Enlarged, grown large.
Ensate, *Ensiform*, shaped like a sword with a straight blade.
Entire, not notched.
Epicarp, the outside covering of a fruit.
Epidermis, the outer skin of the bark.
Epiphyllous, growing upon the leaves.
Epipetalous, growing upon the petals.
Epigynous, growing upon the style or ovary.
Epiphytes, plants which grow upon other plants without deriving any nutriment from them.
Equal, applied to petals and sepals when they are equal in size and shape with each other; to the calyx in *Cruciferæ*, when it is without pouches at the base.
Equidistant, a mode of vernation, or of arrangement of leaves with respect to each other, in which the sides or edges alternately overlap each other.
Erectly-spreading, between erect and spreading.
Erose, gnawed, bitten, a term used to denote a particular kind of irregular denticulation.
Erosely-toothed, when the teeth are gnawed or erose.
Erosely-serrated, when the serratures are gnawed.
Errhine, promoting a discharge of mucous from the nostrils.
Escharotic, having the power to burn the skin.
Esculent, good for food.
Even, applied to a surface when it is not wrinkled or curled, but smooth and even.
Evanescent, quickly vanishing.
Evolved, unfolded.
Exarillate, without aril. See *Aril*.
Exalbuminous, without albumen. See *Albumen*.
Excavated, hollowed out.
Excentral, out of the centre.
Excoriate, stripped of the bark or skin.
Excurrent, projecting or running beyond the edge or point of any thing.
Exotic, foreign.
Expectorant, any thing that promotes the discharge of mucous from the chest.
Exserted; projecting much beyond something else.
Exsiccated, dried up.
Extra-axillary, growing from above or below the axils of the leaves or branches.
Extra-foliaceous, away from the leaves, or inserted in a different place from them.
Exstipulate, without stipulas. See *Stipulas*.
Exuvia, whatever is cast off from plants.

F.

Fæcula, the nutritious powder of wheat or other things, the albumen of seeds.
Falcate, *Falciform*, bent like a sickle.
Falsely-2-valved, having two valves, which are not of the same nature as other valves.
Fan-nerved, the nerves disposed in the manner of a fan.
Farinaceous, full of flour.
Farina, meal.
Farinaceously-tomentose, *Farinosely-tomentose*, covered with a mealy kind of down.
Farinose, mealy.
Fasciated, faced, having white blotches or stripes.
Fascicled, in bundles or parcels.
Fascicles, parcels or bundles.
Fascicled-hairs, hairs in parcels.
Fasciculate, *Fascicular*, arranged in bundles or parcels.
Fascicled-whorles, arranged in parcels, but still forming a whorl or circle.
Fascicled-racemes, disposed in separate parcels, the whole forming a raceme.
Fasciculately-tuberous, *Fascicled-tuberous*, roots composed of a parcel or parcels of tubers.
Fastigiate, tapering to a narrow point like a pyramid.

Fastigiately-branched, branched in such a manner, the branches becoming gradually shorter from the base to the apex.
Fastigiately-corymbose, a corymb, whose branches gradually become shorter towards the top, like a pyramid.
Fauces, the jaws, the gaping part of monopetalous flowers.
Favose, pitted or excavated, like the cells of a honeycomb.
Favosely-scrobiculate, excavated in little pits or hollows.
Feathery, resembling a feather.
Feather-nerved, the nerves disposed like the feathers of a pen.
Febrifuge, *Febrifugal*, } efficacious in moderating fevers.
Feculent, muddy, thick with sediment.
Fecundation, the act of making fruitful.
Ferruginous, *Ferrugineous*, } iron-coloured, rusty.
Fibrillose, covered with little strings or fibres.
Fibrous, being composed of fibres.
Filamentose, thready.
Filiform, like a thread in form.
Fimbriate, fringed.
Finger-parted, divided into lobes, having a fanciful resemblance to the five fingers of a human hand
Firm, hardish, firm, not soft.
Fistular, *Fistulous*, *Fistulose*, } hollow, like a pipe.
Flaccid, feeble, weak.
Flagellæ, runners without leaves.
Flagellæform, form of runners, creeping along the ground.
Flat, plane.
Flexile, capable of being bent in different directions, pliable.
Flexuous, having a bent or undulating direction, zigzag.
Floccose, *Flocky*, } covered with little tufts like wool.
Floccosely-tomentose, down disposed in little tufts.
Floccullosely-scabrous, covered with rough hairs in tufts.
Floral, of or belonging to a flower, near the flower.
Floral-envelopes, the calyx, bracteas, and corolla, which envelope the inner parts of the flower are all so called.
Florets, little flowers, chiefly applied to compositæ and grasses.
Floriferous, that which bears flowers.
Flosculous, compound flowers, consisting of many tubular monopetalous florets.
Foliaceous, having the form of leaves.
Foliate, when a leaf is divided into leaflets it is called 1-2-3-10 or 12-foliate, according to the number of leaflets.
Follicle, a particular kind of two-valved seed-vessel, such as those of *Hakea* and *Pæonia*.
Follicular, resembling a follicle.
Footstalks, the stalks of leaves.
Fornicate, arched.
Foveate, *Foveolate*, } pitted, full of little pits.
Foveolæ, little pits or hollows.
Free, free from each other, not connected together, usually applied to stamens; the ovary or fruit is said to be free when it neither adheres to the corolla nor calyx.
Fringed, having a border like a fringe.
Fringe-toothed, having a border toothed so as to appear fringed.
Frond, the leaves of palms and ferns.
Front, in *Aconitum*, the front of the helmet or upper sepal.
Frosted, covered with glittering particles.
Fructiferous, that which bears fruit.
Fructification, all those parts composing the fruit of plants.
Frutescent, *Fruticose*, } shrubby.
Fruticulose, a little shrub.
Fugacious, that which lasts but for a short time.
Fulcra, scales and stipulas, &c.
Fulvous, tawny-yellow, or fox-coloured.
Fungous, having the consistence of fungi or mushrooms.
Funicle, a little stalk, by which the seed is attached to the placenta.
Furcate, forked.
Furcately-divided, divided in a furcate manner.
Furfuraceous, scaly, mealy, scurfy.
Furrowed, having longitudinal channels or furrows.
Fuscous, blackish-brown.
Fusiform, spindle-shaped, like the root of a carrot.

G.

Galeate, helmeted; the upper lip of a ringent corolla is the galea of that corolla.
Gamosepalous, when the sepals are joined together at the base, they are so called, improperly monosepalous.
Gelatine, jelly, a term in chemistry.
Gelatinous, consisting of jelly.
Geminate, twin.
Gemmæ, leaf buds, as distinguished from alabastra or flower-buds.
Gemmiferous, bearing buds.
Genitals, styles and stamina.
Germ or *Germen*, the old name of the ovary.
Germen-inferior, fruit below the flower.
Germen-superior, fruit above the flower.
Germination, the first act of vegetation in a seed.
Gibbo, in *Aconitum*, the swelling of the tube of the petals or nectaries.
Gibbous, protuberant, swelled.
Gibbosity, a protuberance or swelling.
Girded, surrounding any thing.
Glabrous, smooth, destitute of hairs.
Gladiate, shaped like a short straight sword.
Glandular, having glands.
Glandularly-crenated, *Glandularly-serrated*, } having crenatures or serratures tipped with glands.
Glandularly-muricated, covered with tubercles tipped with glands.
Glandularly-pilose, covered with glandular hairs.
Glandularly-toothed, margins toothed, with the teeth bearing glands.
Glanduliferous, bearing glands.
Glaucescent, having something of a bluish-green, hoary, or sea-green appearance.
Glaucous, having a decided hoary-grey surface.
Globose, *Globular*, } round or spherical.
Globosely-elliptical, between spherical and oval.
Globosely-ovate, between spherical and egg-shaped.
Globulose, a diminutive of globose.
Glochidate, having hairs, the ends of which are split and hooked back.
Glomerate, *Glomerated*, } gathered into round heaps or heads.
Glumaceous, plants are said to be glumaceous when their flowers are like those of grasses.
Glume, a part of the floral envelopes of a grass.
Gluten, glue.
Glutinous, *Glutinose*, } adhesive, gluey.
Gomopetalous, improperly monopetalous.
Graniform, formed like grains of corn.
Granular, *Granulated*, } covered as if with grains.
Granuliferous, bearing grains.
Greenish-glaucous, of a colour between grey and green.
Gregarious, herding together.
Grooved, furrowed, channelled, marked with grooves.
Grumose, clubbed, knotted, contracted at intervals into knots.
Gynandrous, having the stamens and style combined in one body.
Gynobase, a fleshy receptacle, bearing separate fruits.
Gynobasic, having a gynobase.
Gynophore, a lengthened receptacle, bearing the petals, stamens, and pistil, but not the calyx.
Gynous, flowers are said to be 3-4-5-6-7, &c. gynous, when they contain so many styles.
Gyrose, turned round like a crook.

H.

Habit, features or general appearance of a plant.
Habitat, habitation, native country.
Hæmorrhages, copious bleeding.
Hæmorrhoids, a kind of disease called the piles.
Hairy, covered with long hairs.
Hairy-canescent, covered with grey hairs.
Hairy-pubescent, covered with short soft hairs.
Hairy-tomentose, covered with dense, white, close, curled hairs.
Hastate, formed like the head of a halbert.
Hastately-cordate, between halbert-shaped and heart-shaped.
Hastately-kidney-shaped, a form between halbert-shaped and kidney-shaped.
Hastately-lanceolate, between halbert-shaped and lance-shaped.
Hastately-4-5-lobed, lobed in such a manner as still to appear somewhat halbert-shaped.
Hastately-2-eared, a leaf having two ears at the base, giving it the appearance of a halbert.
Haulm, dead stems of herbs.
Helmet, the same as *Galea*. See *Galeate*. The upper sepal in *Aconitum*.
Hemispherico-conical, a shape between a globe and a cone.
Herbaceous, a plant the stem of which perishes annually.
Hermaphrodite, a flower is so called when it consists both of male and female organs.
Hexagonal, six-sided.
Hexandrous, having six stamens.
Hibernaculum, any thing which serves as a protection to the young buds during winter.
Hilum, *Hylum*, { the scar or mark on the seed which indicates the place by which it adheres to the placenta.
Hirsutely-tomentose, covered with dense, close, white hairs.
Hispid, covered with stiff hairs.
Hispidly-ciliated, fringed with stiff hairs.
Hispidly-villous, covered with stiff villi.
Hoary, covered with grey or white down.
Hoary-pubescent, covered with white down, which is pressed to the surface.
Hoary-tomentose, covered with white tomentum; which see.
Hoary-velvety, covered with white velvety down.
Hoary-villous, covered with white villi.
Holosericeous, covered all over with silky down.
Hollow-leaf, form of a cowl, concave above.
Homogeneous, having a uniform nature, or principle, or composition.
Honey-combed, having pits like a honeycomb.
Honey-pore, the pore in flowers which secretes honey.
Honey-scales, the scales in flowers which secrete honey.
Hooded, being hollowed into the form of a hood.
Horn, any awl-shaped stiff process is called a horn.
Horny, hard, the consistence of a horn.
Hyaline, crystalline, transparent.
Hybrid, a mule, partaking of the nature of two species.
Hydragogue, that which removes dropsy.
Hygrometrical, indicating the approach of moisture.
Hypocrateriform, salver-shaped.
Hypogynous, situated below the ovarium.
Hypophyllous, situated under the leaf.

I.

Icosandrous, having 20 stamens or more.
Imbricate, *Imbricated*, laid over each other like tiles.
Immarginate, without a margin.
Immersed, buried in; applied to the leaves of water plants when they grow under water, also to the ovary when it is buried in the disk.
Impari-pinnate, leaves pinnate, with a terminal or odd leaflet.
Impressed, pressed into.
Inarticulated, without joints.
Inciso-repand, cut and repand.
Inclined, bending inwards, forming a curve.
Incomplete, not full.
Incumbent, lying upon any thing; in *Cruciferæ* when the radicle lies upon the back of the cotyledons.
Incurved, bending inwards.
Indefinite, that which cannot be counted, an irregular number.
Indehiscent, not dehiscent, not opening.
Induplicate, doubled inwards, folded inwards.
Indurated, hardened.
Indusium, the membrane that incloses the thecæ in ferns.
Inferior, any thing placed below the ovary is so called, the lowest of any thing; the ovary or fruit is said to be inferior when it is crowned by the calyx, petals, and stamens; a radicle is said to be inferior when it is situated at the lower end of the seed at the hylum.
Inflexed, bent inwards.
Inflorescence, disposition of the flowers.
Infra-axillary, below the axils of the leaves.
Infracted, bending inwards.
Inner-angle of the fruit or cells, the central placenta.
Inspissated, thickened, spoken of sap or other liquor.
Integument, the outer covering of seeds.
Intermediate, between two plants; the middle one of any thing. Intermediate is applied to the styles in *Oxalis* when they are longer than the outer stamens, and shorter than the inner ones.
Internodes, the space between the joints in stems.
Interpetiolar, between the petioles or leafstalks.
Interrupted, any thing which is not continuous, but is separated by gaps or vacancies.
Interruptedly-crested, crested at intervals.
Interruptedly-lyrate, lyrated with smaller lobes intervening between the larger ones.
Interruptedly-pinnate, pinnate with smaller leaflets intervening between the larger ones.
Interruptedly-pinnatifid, pinnatifid with smaller lobes intervening between the larger ones.
Interstices, spaces between one thing and another.
Intervalvular, in the middle of the valves.
Intra-axillary, within the axils of leaves.
Intricate, entangled.
Inverse, *Inverted*, upside down, opposed to direct.
Involucel, a small involucre.
Involucelled, having an involucel.
Involucre, *Involucrum*, the bracteas which surround the flowers or umbels, particularly in umbelliferous plants.
Involucrate, *Involucrated*, having an involucrum.
Involute, rolled inwards.

J.

Jagged, cut in a coarse manner.
Joints, the places at which the pieces of the stem are articulated with each other.

K.

Keel, when the mid-rib of a leaf or petal is sharp and elevated externally, it is called a keel; in papilionaceous flowers the lower petal is called the keel.
Keeled, having a keel.
Kneed, knee-jointed, bent like the knee joint.

L.

Labellum, the front segment of an orchideous or other flower, the lower petal, the lip.
Labiate, having a lip or lips.
Lacerate, *Lacerated*, torn, appearing torn.
Lacerately-toothed, toothed in a coarse irregular manner.
Laciniate, *Laciniated*, jagged, cut, or divided into unequal segments.
Lactescent, yielding milky juice.
Lacunæ, little pits or depressions, applied to vessels when they are full of air.
Lacunose, covered with little pits or depressions.
Lamellate, *Lamellated*, divided by little plates, or covered with little plates.
Lamellose, having little plates.
Lamina, generally applied to a leaf of a plant, considered without its petiole.
Lanceolate, lance or spear-shaped.
Lanceolate, when joined by a hyphen to another word, signifies a figure between the two words, as *lanceolate-linear*, *lanceolate-spatulate*, *lanceolate-oblong*, *lanceolate-obovate*, &c.
Lateral, on one side, or on the sides.
Lax, loose, not compact.
Leaflets, small parts of leaves of compound leaves.
Leafy, covered with leaves, or the consistence of a leaf.
Leathery, thick, the consistence of leather.
Legume, *Legumen*, a pod, the fruit of leguminous plants, a pea-pod, &c.
Leguminous, plants which bear legumes, such as the pea, the bean, &c.
Lenticular, shaped like a lens or pea.
Lentiform, shaped like a lens.
Lepidoted, covered with prominent dots.
Leprous, covered with spots or scales like leprosy.
Leprosy, covered with scales or dots resembling the leprosy.
Leprously-silvery, *Leprously-white*, covered with white or silvery dots, scales or scurf, resembling the leprosy.
Leprously-tomentose, covered with shaggy down, having the appearance of leprosy.
Liber, the inner bark.
Lid, the calyx which falls off from the flower in a single piece, or the lid of a fruit which separates in a single piece.
Ligula, *Ligulæ*, the membrane at the top of the petiole of grasses, and other plants, straps.
Ligulate, strap-like, having the form of a strap.
Ligulately-setaceous, between the form of a strap and a bristle.
Limbate, having a dilated surface.
Limb, the border of a flower, the spreading part.
Line, in length the eighth of an inch.
Linear, narrow, when the two sides are nearly parallel.
Linear, when joined by a hyphen to another word, signifies a form between the two words, as, *linear-filiform*, *linear-ensate*, *linear-subulate*, *linear-lanceolate*, *linear-spatulate*, *linear-setaceous*, *linear-triangular*, triangular and linear; *linear-elongated*, linear and elongated; *linear-sagittate*, sagittate and linear, &c.
Linearly-cuneated, between linear and wedge-shaped.
Lined, having lines or streaks.
Linguiform, *Lingulate*, tongue-shaped.
Lip, the lower petal of any irregular flower. In *Aconitum* the lower part of the tube of petals or nectaries.
Lipped, having lips.
Lithontriptic, having the power of breaking the stone.
Lobate, divided into lobes.
Lobately-crenated, having deep crenatures or indentations.
Lobately-winged, having lobed wings.
Lobe, a division.
Lobed, divided into lobes.
Lobulate, having small lobes.
Lobules, small lobes.
Located, placed.
Loculaments, partitions, or cells of a seed-vessel.
Locular, a fruit is called unilocular if it contains but one cell; bilocular if it contains two cells; and trilocular if it contains three cells; and so on.
Loculate, having cells.
Loment, a kind of pod, which falls in pieces when ripe at the joints.
Lomentaceous, bearing fruit called loments.
Long, applied to the styles in *Oxalis*, signifies that they are longer than all the stamens.
Long-acuminated, having a long taper-point.
Lorate, shaped like a thong or strap.
Lubricate, to make slippery.
Lucid, bright, shining.
Lunate, *Lunulate*, *Lunulately*, shaped like a half-moon.
Lurid, a colour between purple, yellow, and grey.
Lymphatic, of or belonging to the lymph or sap.
Lyrate, shaped like a lyre.
Lyrately-pinnate, pinnate in a lyrate manner.
Lyrately-pinnatifid, pinnatifid in a lyrate manner.

M.

Macerate, to decompose by steeping in water or other liquor.
Mammæform, formed like a nipple or nipples.
Marcescent, permanent, when withered not falling off.
Margin, edge or border.
Marginal, relating to the margin.
Marginated, *Margined*, having a margin.
Masticatory, grinding or chewing with the teeth.
Matrix, a place where any thing is generated or formed.
Medulla, the pith of a plant.
Medullary, relating to the pith of plants.
Melliferous, bearing honey.
Membranous, *Membraneous*, *Membranaceous*, having the texture of a membrane.
Menstruum, a liquor used as a dissolvent.
Meshes, the openings of any tissue.
Micacious, glittering or shining.
Micæ, glittering particles.
Mid-rib, the middle vein of a leaf which passes from the petiole to the apex.
Miliary, granulated, resembling many seeds.
Mitriform, formed like a mitre.
Monadelphous, having the filaments cohering into a tube.
Monandrous, having only one stamen.
Moniliform, formed like a necklace, that is to say, with alternate swellings and contractions, resembling a string of beads.
Monocotyledonous, having only one seed-leaf or cotyledon.
Monœcious, having the one sex in one flower, and the other in another on the same plant.
Monopetalous, having only one petal.
Monosepalous, having only one sepal.
Mordant, that which enables vegetable matter or tissue to receive dyes or colouring matter, and to retain them.
Mottled, marked with blotches of colour of unequal intensity, passing insensibly into each other.
Mucilage, a turbid slimy fluid.
Mucronate, *Mucronated*, sharp-pointed.
Mucronately-acuminated, with a taper-point ending in a mucrone.

Mucronately-crenate, *Mucronately-toothed*, } serrate or toothed, having the crenatures, serratures, or teeth ending in a sharp point.
Mucronately-pungent, having a sharp prickly point.
Mucrone, a small sharp point.
Mucronulate, *Mucronulated*, } having a little hard sharp point.
Mulch, a gardener's term for the placing manure about the roots of trees, on the surface of the ground.
Multifarious, very numerous, or arranged in many rows.
Multifid, cleft into many parts.
Multifidly-pinnatifid, a leaf is so called when it is pinnately-lobed, and these lobes are again divided into many parts.
Multipartite, divided into many parts.
Multiple, many times more; applied to numbers.
Multiplex, much multiplied.
Muricate, *Muricated*, } covered with short sharp points.
Muricately-hispid, covered with short, sharp, stiff bristles.

N.

Naked, without hairs, without leaves, or without branches, &c.
Nakedish, nearly destitute of hairs or leaves.
Napiform, formed like a turnip, tuberous.
Narcotic, producing sleep or torpor.
Narrowed, tapering.
Navicular, boat-shaped.
Neck, the upper tapering end in bulbs or other plants is called the neck.
Nectarial, of or belonging to the nectary.
Nectariferous, bearing honey or nectaries.
Nectariferous-tube, in *Pelargonium*, is the tube or swelled part at the top of the pedicel.
Nectarium, *Nectary*, } that part of a flower which produces honey.
Nervedly-furrowed, with furrows like nerves.
Nerveless, without nerves.
Nerves, the strong veins upon leaves or flowers.
Nervose, *Nervous*, } full of nerves.
Nervosely-furrowed or *streaked*, *Nervously-furrowed* or *streaked*, } having nerves like furrows or streaks.
Netted, having the veins reticulated.
Neuter, neither male nor female.
Nidulant, nestling, lying among any thing, as a bird in its nest.
Nidus, the nest of any thing.
Nodding, having a drooping position.
Nodi, the swelled articulations of stems; the place where one joint is articulated with another.
Nodose, having many nodi or knots.
Nodules, small hard nodi or knots.
Nucleus, the kernel of a nut.
Nucamentaceous, producing nuts.
Nuts, seeds covered with hard shells.

O.

Ob, is used in the composition of Latin technicals, to indicate the thing is inverted, such as *obovate* is inversely ovate, *obcordate* is inversely cordate, and *oblanceolate* inversely-lanceolate, &c.
Obconical, inversely conical.
Obcordate, inversely cordate.
Obcordately-two-lobed, inversely cordate, with the indentation very deep, so as to appear of two lobes.
Oblong, when joined by a hyphen to another word, signifies a form between the two words, as, *oblong-elliptical*, *oblong-linear*, *oblong-cuneate*, *oblong-lanceolate*, *oblong-spatulate*, *oblong-rhomboid*, *oblong-sagittate*, oblong and arrow-shaped.
Oblong-triquetrous, oblong and three-sided.
Obliquely-cordate, cordate in an oblique manner.
Obliquely-repand, a leaf having a margin undulated, and unequally and obliquely dilated, is said to be obliquely-repand.
Obliquely-truncate, cut off in an oblique manner.
Obovate, *Obovoid*, } inversely egg-shaped, with the broadest end uppermost.
Obovate, when joined by a hyphen to another word, signifies a shape between the two words, thus, *obovate-spatulate*, a shape between obovate and spatulate; *obovate-oblong*, *obovately-oblong*, between obovate and oblong; *obovate-lanceolate*, between obovate and lance-shaped; *obovate-cuneated*, a figure between obovate and wedge-shaped; *obovate-roundish*, a figure between circular and obovate; *obovate-rhomboid*, a figure between obovate and rhomb-shape, &c.
Obovate-cuneated, *Obovately-cuneated*, *Obovately-wedge-shaped*, } between obovate and wedge-shaped, with the broadest end uppermost.
Obsolete, hardly evident.
Obsoletely-toothed, scarcely toothed.
Obtuse-angled, having blunt angles.
Obvolute, having one part rolled upon another.
Occidental, coming from the west.
Ochraceous, having the colour of yellow ochre.
Octandrous, having eight stamens.
Octogynous, having eight styles.
Officinal, any thing that has been or is sold in shops.
Oleaginous, having the qualities of oil.
Oleraceous, esculent, eatable.
Opaque, want of transparency.
Operculate, *Operculated*, } covered with a lid.
Operculum, a lid.
Opiate, having the power of opium.
Orbiculate, *Orbicular*, } circular or spherical.
Orbiculately-depressed, spherical, but depressed on the top.
Orbiculately-elliptical, a form between circular and elliptical.
Orbiculately-obovate, a form between circular and obovate.
Orbicularly-rhomboid, a figure between circular and rhomb-shaped; *orbicularly-reniform*, a figure between circular and kidney-shaped.
Orchideous, of or belonging to the natural order of *Orchideæ*.
Orifice, an opening.
Oscillatory, moving like a vane or weather-cock.
Ossified, become like bone.
Ova, the eggs of any thing, the seeds before they are mature.
Oval, when joined to another word by a hyphen, signifies a figure between the two words, as, *oval-rhomboid*, between oval and rhomb-shaped; *oval-lanceolate*, between oval and lance-shaped; *oval-oblong*, a shape between oval and oblong, &c.
Oval, having the figure of ellipsis.
Ovate, the shape of an egg, with the broad end downwards.
Ovate-globose, *Ovate-spheroid*, } between egg-shaped and spherical.
Ovary or *Ovarium*, the germ, the part of the flower in which the young seeds are contained.
Ovate, when joined by a hyphen to another word, signifies a figure between the two words, thus, *ovate-cordate*, ovate and heart-shaped; *ovate-elliptical*, a figure between egg-shaped and elliptical; *ovate-oblong*, a figure between egg-shaped and oblong; *ovate-orbicular*, a figure between egg-shaped and circular; *ovate-lanceolate*, a figure between ovate and lance-shaped; *ovate-spatulate*, a figure between egg-shaped and spatulate.
Ovate-cylindrical, egg-shaped and cylindrical.
Ovately-trapeziform, a form between an egg and a trapezium.
Overlapping, when the margin of one thing lies upon that of another it is said to overlap.
Ovoid, egg-shaped.
Ovula, the seeds in the ovary before they are mature, the same as ova.
Ovulate, containing ova, 2-3-4-ovulate, containing 2-3 or 4 young seeds.
Ovules, the young seeds of plants contained in the ovary.

P.

Palate, the mouth of a ringent flower.
Paleaceous, abounding with chaffy scales.
Palmate, *Palmated*, } divided so as to resemble a hand spread open.
Palmate-lobed, *Palmately-lobed*, } lobed in a palmate manner.
Palmate-parted, *Palmately-parted*, } parted in a palmate manner.
Palmately-cleft, cleft in a palmate manner.
Palmately-multifid, palmate, having the leaflets finely-multifid.
Palmatifid, divided so as to resemble a hand.
Panicle, a loose disposition of inflorescence, as oats.
Panicled, *Paniculate*, } forming a panicle.
Paniculately-branched, branched in a loose manner.
Paniculately-corymbose, having a loose corymb.
Paniculately-dichotomous, having a panicle, dividing in a dichotomous manner.
Paniculately-racemose, having numerous racemes, forming a panicle.
Papilionaceous, butterfly-shaped flowers, as the common pea.
Papillæ, small soft excrescences.
Papillose, *Papillous*, } having small glandular excrescences like pimples.
Pappus, crown of the seeds of compositæ and similar plants.
Papulæ, round, soft, watery protuberances.
Papulose, covered with papulæ.
Papyraceous, the consistence of paper.
Parabolical, form of a parabola, longer than broad, tapering gradually to both ends.
Parenchyma, all the parts of plants which consist of cellular tissue.
Parietal, being attached to the sides or walls of the ovary.
Parietes, the sides of the ovary or capsule.
Parted, divided, but not to the base, 3-4 or 5-parted, divided into 3-4 or 5 parts.
Partition, a division.
Patent, spread out or expanded.
Patulous, slightly spreading.
Pectinate, *Pectinated*, } resembling the teeth of a comb.
Pectinately-ciliated, ciliated in such a manner as to resemble the teeth of a comb.
Pectinately-jagged, jagged in such a manner as to resemble the teeth of a comb.
Pectinately-pinnate-lobed, having leaflets or lobes finely pectinated.
Pectinately-pinnatifid, pinnatifid in a pectinate manner.
Pectoral, relating to the breast.
Pedate, leaves when they are cut in divisions; the outer divisions again lobed, are called pedate.
Pedately, divided in a pedate manner.
Pedately-many-parted, cut into many divisions in a pedate manner.
Pedately-multifid, divided into many parts in a pedate manner.
Pedatifid, cut into lobes, the lateral ones of which do not radiate from the petiole like the rest.
Pedicel, small footstalks of flowers; commonly applied to the partial footstalks of flowers.
Pedicellate, *Pedicelled*, } stalked, having pedicels.
Peduncle, flower-stalk, usually applied to the common footstalk of a number of flowers, sometimes only of one flower.
Peduncled, *Pedunculate*, *Pedunculated*, } having stalks or peduncles.
Pellicle, a thin skin, which envelopes certain seeds.
Pellucid, bright, transparent.
Peltate, a leaf is said to be peltate when the petiole

is fixed in the disk instead of the margin, like the handle of a shield.

Peltately-cordate, between heart-shaped and peltate.

Peltately-rayed, rayed in a peltate manner.

Peltate-nerved, the nerves of a leaf disposed in a peltate manner, radiating from the centre.

Pencilled, marked in lines as with a pencil, or having the appearance of hair pencil, as the stigmas of numerous species of *Oxalis*.

Pencil-formed, resembling a hair pencil.

Pendulous, drooping, hanging down.

Pentagonal, having five angles.

Pentagynous, having five styles.

Pentandrous, having five stamens.

Pentapetalous, having five petals.

Perennial, lasting many years without perishing.

Perfoliate, when the stem passes through the base of a leaf, the leaf is said to be perfoliate.

Perforated, bored, or apparently so, full of holes.

Perianth, *Perianthium*, the envelope which surrounds the flower. This term is applied when the calyx cannot be distinguished from the corolla, as in *Lilium*, *Allium*, &c.

Pericarp, the seed-vessel.

Perichætial, leaves which in mosses surround the base of the stalk of the theca.

Perigone, the calyx and corolla.

Perigynous, inserted in the calyx, or in the disk which adheres to the calyx.

Perisperm, the same as *albumen*, which see.

Peristome, the rim which surrounds the orifice of the theca of a moss.

Peripheric, circular, curved.

Perithecium, *Peridium*, different kinds of envelopes of the reproductive organs of *Fungi*.

Permanent, *Persistent*, } remaining, not falling off.

Pervious, having a passage through which any thing can be transmitted.

Petal-like-scales in Caryophylleæ, the scales which are fixed to the petals at the throat.

Petalled, having petals.

Petaloid, like petals.

Petals, divisions of a corolla.

Petiolate, *Petioled*, } having footstalks.

Petiolar, of or belonging to the petioles.

Petioles, footstalks of leaves.

Petiolulate, having little petioles.

Petiolules, little petioles.

Phænogamous, such plants as are visibly furnished with sexual organs.

Pharmaceutical, relating to the art of pharmacy.

Phthisis, relating to the lungs.

Phyllodium, a dilated petiole, with the consistence of a leaf.

Pili, long stiffish hairs.

Piliate, having a cap or lid like the cap of a mushroom.

Piliferous, bearing hairs.

Pilose, covered with long soft hairs.

Pilosely-hairy, covered with long hairs.

Pilosely-hispid, beset with stiff long hairs.

Pilosely-pubescent, covered with longish pubescence.

Pilosely-scabrous, covered with long stiff hairs.

Pilosely-strigose, beset with unequal stiff hairs.

Pilosely-tomentose, covered with longish tomentum.

Pimpled, covered with minute pustules, resembling pimples.

Pinnæ, *Pinnulæ*, the leaflets of a pinnate leaf.

Pinnate, a leaf is so called when it is divided into numerous smaller leaves or leaflets, as the leaves of the ash.

Pinnately-cut, cut in a pinnate manner.

Pinnately-decompound, compounded in a pinnate manner.

Pinnately-lobed, lobed in a pinnate manner.

Pinnate-parted, divided into lobes in a pinnate manner, but not exactly to the base.

Pinnately-multifid, pinnate, and having the leaflets finely-multifid.

Pinnately-quinate, having 5 leaflets disposed in a pinnate manner.

Pinnatifid, a leaf is so called when it is divided into lobes from the margin nearly to the mid-rib.

Pinnatifidly-sinuated, scolloped in a pinnatifid manner: *pinnatifidly-lyrate*, lyrate in a pinnatifid manner; *pinnatifidly-serrated*, serrated in a pinnatifid manner; *pinnatifidly-runcinate*, runcinate in a pinnatifid manner; *pinnatifidly-toothed*, toothed in a pinnatifid manner; *pinnatifidly-lobed*, lobed in a pinnatifid manner, &c.

Pisiform, formed like a pea or peas.

Pistil, *Pistillum*, { the columnar body in the centre of a flower, consisting commonly of three parts, viz. the ovary, styles, and stigmas.

Pitchers, hollow leaves, so called.

Pith, medulla, occupying the centre of a stem or shoot.

Placenta, that part of the capsule which the seeds are attached to.

Placentarious, having placentas, acting as a placenta, bearing the seeds.

Placentiferous, bearing placentas.

Plane, flat.

Plethoric, having a full habit.

Plicate, plaited, 4, 5, or 6-plicate, having 4, 5, or 6 plaits.

Plumose, feathery, resembling feathers.

Plumule, the centre bud between the cotyledons in the embryo of a plant.

Plurilocular, having many cells.

Pod, a kind of seed-vessel, such as that of the pea tribe.

Podosperm, the stalk on which some seeds are borne.

Pollen, powder contained in the anthers, composed of globules, containing the fecundating fluid; on leaves the bloom.

Polyandrous, having more stamens than 20 inserted in the receptacle.

Polygamous, a plant is said to be polygamous when some flowers are male, some female, and others hermaphrodite on the same plant.

Polygamo-Diœcious, having male and female flowers on the same plant.

Polymorphous, assuming various appearances.

Polypetalous, having many petals.

Polyphore, an elongated receptacle, which bears many ovaries, but not the petals nor stamens.

Polyspermous, containing many seeds.

Pome, an apple or pear, or such like fruits, crowned by the calyx.

Pores, apertures in the cuticle through which transpiration takes place, or apertures in the anthers through which the pollen is ejected.

Porrect, extended forward.

Pouch, a little sack or bag at the base of some petals and sepals.

Powdered, *Powdery*, } covered as if with powder.

Præmorse, appearing as if bitten off.

Precocity, ripe before the usual time.

Pressed, close, not spreading.

Primordial, usually applied to leaves, the first leaves.

Prismatic, formed as a prism.

Proboscis-like, having a beak, form of a trumpet, curved.

Process, *Processes*, } protrusions either natural or monstrous.

Proliferous, a plant is said to be proliferous when it produces young plants about its root in abundance.

Propendent, hanging forwards and downwards.

Pruinose, covered with glittering particles, as if fine dew had been congealed upon it.

Pruinosely-velvety or *pubescent*, covered with short glittering down.

Prurient, stinging.

Pseudospermous, a false seed, a small carpel, as those of Ranunculus and Clematis.

Puberulous, covered with spreading down.

Pubescence, down, short soft hairs.

Pubescent, covered with pubescence.

Pubescently-pilose, covered with soft pressed hairs.

Pubescently-tomentose, covered with dense short white down.

Pulverized, reduced to powder.

Pulvinate, become cushion-shaped.

Punctate, covered with dots.

Punctately-warted, covered with little warts like dots.

Punctiform, formed like little points or dots.

Pungent, stinging or pricking.

Pustular, *Pustulate*, } covered with glandular excrescences like pustules.

Pustules, pimples or little blisters.

Putamen, a nut of many cells.

Pyramidal, formed like a pyramid.

Pyramidately-subulate, thick at the base, and narrow at the apex.

Pyriform, shaped like a pear.

Pyxidiform, a capsule is called a pyxidium when it divides transversely into two cells.

Q.

Quadrangular, having four angles.

Quadrate, square.

Quadrately-divaricate, branching in such a manner as to form a square.

Quadrifarious, arranged in four rows or ranks.

Quadrifariously-imbricated, arranged in four rows and imbricated.

Quadrifid, divided four times, or divided into four parts.

Quadripinnate, four times pinnate.

Quadruple, four times.

Quaternary, arranged by fours, or succeeding by fours.

Quinary, arranged by fives or succeeding by fives.

Quinate, in fives.

Quinate-pinnate, having five leaflets disposed in a pinnate manner.

Quinquefid, *Quinquifid*, } divided into five.

Quintuple, five times.

R.

Raceme, a particular arrangement of flowers, when they are arranged around a simple filiform axis, each particular flower being stalked.

Racemiferous, bearing racemes.

Racemose, disposed in racemes.

Racemosely-corymbose, disposed in a manner between a corymb and a raceme, or numerous racemes forming a corymb.

Racemosely-panicled, disposed in a manner between a raceme and panicle, or numerous racemes forming a panicle.

Racemose-corymbs, between a raceme and a corymb.

Racemules, small racemes.

Rachis, that part of a culm which runs up through the ear of corn, and consequently the part that bears the flowers in other plants; also the common petiole of a pinnate leaf.

Rayed, *Radiant*, *Radiate*, *Radiating*, { a flower is said to be so when in a cluster or head of florets, those of the circumference or ray are long and spreading, and unlike those of the disk. A stigma is said to be rayed or radiant when it is divided like the rays of a star, 5-6-rayed, having 5-6-angles.

Radical, of or belonging to the root, or proceeding from the root.

Radicant, rooting, roots proceeding from the stem.

Radicle, the root of an embryo.

Radius, the ray of a compound flower.

Rameal, of or belonging to the branches.

Ramenta, little brown withered scales, with which the stems of some plants, especially ferns, are covered.

Ramentaceous, covered with ramenta or scales.

Ramifications, subdivisions of root, branches, leaves, or panicles.
Ramose, branched.
Ramuli, twigs or small branches.
Raphe, *Raphis*, in seeds this is the channel of vessels, which connects the chalaza with the hilum; in umbelliferous plants it is the line of junction, of the two halves of which their fruit is composed.
Receptacle, that part of the fructification which supports the other parts.
Recess, *Recesses*, the bays or sinuses of lobed leaves.
Rectilinear, straight lines.
Reclinate, *Reclinated*, leaning back.
Reclinately-erect, at first leaning back, then erect.
Recumbent, lying upon the ground.
Recurved, curved backwards.
Reflexed, bent backwards.
Refracted, bent back.
Refrigerant, producing coolness.
Reniform, kidney-shaped.
Reniform-cordate, between kidney-shaped and heart-shaped.
Repand, a leaf having its margin undulated and unequally dilated, is said to be repand.
Repandly-angular, repand and angular.
Repand-crenated, *Repand-serrated*, *Repand-toothed*, *Repandly-toothed*, *Repandously-toothed*, toothed, serrated, crenated, and undulated.
Repellant, that which drives away any thing.
Replicate, folded back.
Reptant, creeping and rooting.
Resolutive, *Resolvent*, having the power to dissolve.
Resupinate, inverted in position, so that that which was in front becomes the back.
Reticulated, resembling a net, usually applied to the veins and nerves.
Reticulately-areolate, having areolæ disposed like net-work.
Reticulately-nerved, having nerves disposed like net-work.
Reticulately-veined, the veins disposed in the manner of a net.
Retracted, drawn in or lying between things; bent back.
Retrofracted, bent backwards.
Retroflexed, bent backwards.
Retrograde, usually applied to hairs when they are bent back or down, instead of forward or up.
Retuse, appearing as if bit off at the end, abruptly obtuse.
Revolute, rolled back, usually applied to the edges of leaves.
Rhizoma, *Rhysoma*, applied to roots which spread under ground, as the roots of *Iris*.
Rhizomatose, *Rhysomatose*, having rhizoma.
Rhomb, *Rhomboid*, *Rhomboidal*, shape of rhombus.
Rhomb-orate, *Rhomboid-orate*, *Rhomboid-lanceolate*, *Rhomb-spatulate*, between rhomboid and egg-shaped, between rhomboid and lanceolate, and between rhomboid and spatulate.
Rib, the projecting vein of any thing.
Ribbed, having projecting veins.
Rigid, stiff.
Rimose, having a longitudinal fissure or fissures, chinky.
Ringent, gaping.
Ringing, making an incision resembling a ring round a branch.
Rosellate, *Rosulate*, applied to leaves when they are disposed in the manner of the petals of a rose.
Rotate, a monopetalous corolla, the limb of which is flat, and the tube very short, is called rotate, or wheel-shaped.
Roundish-deltoid, form between orbicular and deltoid.
Roundish-obovate, roundly obovate.
Roundish-cordate, roundly cordate.
Roundish-ovate, roundly egg-shaped.
Rubefacient, any thing which reddens the skin, and raises slight cutaneous inflammation.
Rudiment, when an organ is imperfectly developed, botanists call such a rudiment, but sometimes the permanent parts of the leaves are called rudiments of these leaves.
Rufescent, rather rusty.
Rufescently-tomentose, covered with rusty down.
Rufous, reddish orange-colour, or rusty.
Rugosities, protuberances.
Rugose, rough or coarsely wrinkled.
Rugoso-striated, having wrinkled stripes.
Rugulose, finely wrinkled.
Runcinate, applied to the lobes of leaves, a leaf irregularly lobed, the lobes gradually diminishing to the base, and hooked back.
Runcinately-pectinate, runcinate and pectinate.
Runcinately-pinnatifid, pinnatifid, with the lobes hooked back.
Runcinately-toothed, hooked back, and toothed.
Runcinately-lyrate, lyrate, with the lobes hooked back.
Runners, procumbent shoots, which root at their extremity.
Running into, a leaf is said to run down into the petiole, or down the stem, when it extends down the petiole or stem, also applied to the calyx when it runs gradually into the pedicel.
Ruptured, appearing as if burst.
Rusty-tomentose, covered with rusty tomentum.

S.

Saccate, bagged, having a bag or pouch, as in many petals and sepals.
Sack-formed, formed like a sack or pouch.
Sagittate, shaped like the head of an arrow.
Sagittate and *Sagittately*, when joined by a hyphen to another word, signifies a form between the two words, as *sagittate-cordate*, *sagittate-lanceolate*.
Salivation, a discharge of saliva from the glands of the mouth.
Samara, a kind of winged seed-vessel, the same as what the English call a key, such as those of ash and sycamore.
Samaroid, having a seed-vessel like a samara.
Sapid, agreeable to the palate.
Saponaceous, soapy.
Sarcocarp, the most fleshy part of fruit under the epicarp.
Sarmentose, producing sarmenta, or runners and twigs.
Sawed, cut in such a manner as to resemble the teeth of a saw.
Scabrous, rough from little asperities.
Scale-formed, formed like scales.
Scales, any small processes resembling minute leaves or scales; also the leaves of the involucrum in compositæ; also the appendages at the top of the claws of the petals in *Caryophylleæ*.
Scandent, climbing.
Scape, a stem rising from the root, and bearing nothing but the flowers, or sometimes a few bracteas.
Scarious, *Scariose*, membranous and dry.
Scattered, without regularity.
Schistous, formed of the rock called schist.
Scion, a shoot intended for a graft.
Scolloped, having deep and wide indentations.
Scoria, cinders, ashes.
Scrobiculate, excavated into little pits or hollows.
Scrotiform, formed like a double bag.
Scurfy, covered with scales resembling scurf.
Scutate, formed like an ancient round buckler.
Secund, arranged on one side only.
Segments, parts of any thing.
Semi, half.
Semi-cordate, half-cordate.
Semi-orbicular, half-circular.
Semi-sagittate, half arrow-shaped.
Seminal, of or belonging to the seed.
Seminiferous, bearing seed.
Sepals, the divisions of the calyx.
Sepalled, having sepals.
Separable, that which is divisible.
Septa, the partitions which divide the interior parts of the fruit, the dissepiments.
Septiferous, bearing septa or partitions.
Series, a row, a layer.
Sericeous, silky.
Sericeously-velvety, velvety and silky.
Serrate, *Serrated*, like the teeth of a saw.
Serratures, the teeth of a serrated leaf.
Serrate-toothed, having teeth like a saw.
Serrulated, having notches like those of a very fine saw.
Serrate-crenate, having notches between serratures and crenatures.
Serrulations, notchings like those of a very fine saw.
Sessile, without stalks.
Setaceous, *Setacious*, resembling a bristle in shape.
Setaceously-toothed, having teeth like bristles.
Setaceously-pilose, covered with stiff bristle-like hairs.
Setæ, bristles.
Setiform, formed like bristles.
Setigerous, bearing bristles.
Setose, covered with bristles.
Setosely-prickly, covered with stiff bristle-like prickles.
Sheath, the lower part of the leaf that surrounds the stem.
Sherds, fragments of pots, employed by gardeners to drain their flower-pots.
Shield, a broad table-like process in the flower of *Stapelia* and its allies.
Short-acuminated, having a short taper point.
Shortly-bifid, *Shortly-2-cleft*, slightly cleft in two parts at the apex.
Sialagogue, having the power of exciting saliva.
Siliceous, flinty.
Silicle, small short pod of *Cruciferæ*.
Siliculose, form of a silicle, a silicle.
Silique, the long terete pod of *Cruciferæ*.
Siliquose, form of a silique, a silique.
Silky-puberulous, *Silky-pubescent*, *Silky-tomentose*, covered with silky pubescence or tomentum.
Silky-villous, covered with silky hairs.
Simple, the reverse of compound, not divided.
Sinuate, *Sinuated*, cut in such a manner as to appear bending in and out.
Sinuate-angular, *Sinuately-angular*, angled in a sinuated manner.
Sinuately-lobed, lobed in a sinuated manner.
Sinuately-3-lobed, lobed with three sinuated lobes.
Sinuately-pinnatifid, sinuated and pinnatifid, between sinuate and pinnatifid.
Sinuately-curled, sinuate and curled.
Sinuately-repand, scolloped and undulated.
Sinuately-runcinate, between scolloped and runcinate.
Sinuate-toothed, *Sinuately-toothed*, toothed in a sinuated manner.
Sinus, the bays or recesses formed by the lobes of leaves and other bodies.
Smooth, without hairs and smooth.
Smoothed, without hairs and glossy.
Soboliferous, producing young plants from the root.
Soddened, soaked.
Somniferous, causing sleep.
Soporific, causing sleep.
Sorediferous, bearing soredia.
Sori, the patches of fructification on the back of the fronds of ferns.
Spacelate, withered or dead.
Spadix, a spike protracted from a spath.

Spath, *Spatha*, a broad, sheathing leaf, enclosing flowers arranged upon a spadix.
Spathulate, *Spatulate*, shaped like a spatula, a knife so called, whose broadest end is at the extremity.
Spathaceous, furnished with a spatha, or like a spath.
Spatula, a spatulate-shaped process.
Spatulate-linear, between linear and spatulate.
Spatulate, when joined by a hyphen to another word, signifies a form between the two words, as *spatulate-ovate*, *spatulate-roundish*, *spatulate-lanceolate*, *spatulate-obovate*, &c.
Spermaderm, the outer covering of a seed.
Spherical, round like a sphere.
Spheroidal, *Spheroid*, almost like a sphere.
Spherules, minute spheres or globules.
Spicate, having a spike.
Spicately-disposed, disposed in the manner of a spike.
Spike, flowers sessile upon a long rachis, as *Veronica spicata*.
Spiked, having a spike.
Spike-formed, formed like a spike.
Spikelets, in grasses, flowers arranged in two rows, as in *Bromus*, small spikes.
Spinulosely-toothed, having spiny teeth, or small teeth like spines.
Spines, indurated branches or processes not falling off from the part that bears them.
Spinescent, furnished with soft spine-like processes.
Spiniform, formed like a spine.
Spinulescent, having a tendency to produce small spine-like processes.
Spinose, *Spinous*, furnished with spines or form of spines.
Spinosely-toothed, *Spinously-toothed*, having sharp stiff teeth like spines.
Spinosely-serrated, having serratures like spines.
Spinosely-trifid, divided into three spines.
Spinulose, furnished with small spines.
Spiny, furnished with a spine or spines.
Spiny-ciliated, edged with stiff processes like spines.
Spiny-serrated, having the serratures or teeth terminated by spines.
Spiny-toothed, having teeth like spines.
Siliculæform, form of a silicle.
Spiral, circularly involved, twisted like a screw.
Spirally-convolute, rolled together in a spiral manner.
Spirally-twisted, twisted like a screw.
Sporules, that part of cryptogamous plants which answers to the seeds of other plants.
Sporuliferous, bearing sporules.
Spurious, counterfeit.
Spurs, *Spur*, long processes resembling horns, produced by various parts of a flower; in *Aconitum* the process which terminates the petal or nectary.
Squamiform, like scales, formed like scales.
Squarrose, spreading stiffly at right angles or in a greater degree.
Squarrosely-imbricated, laid over each other in a squarrose manner.
Squinancy, an inflammation in the throat.
Stalks, the footstalks of leaves or flowers.
Stalked, having stalks.
Stamen, the male organ of a flower.
Staminiferous, bearing stamina.
Staminiferous-tube, the tube which is formed from the cohesion of the filaments.
Standard, the upper petal in pea-flowers.
Starry, *stellate*, in the manner of a star, radiating.
Starry-pubescent. See *Stellately-pubescent*.
Stellate-hairs, tufts of hairs radiating like a star.
Stellately-pubescent, covered by starry tufts of down.
Stellulate, resembling little stars.
Stellately-spreading, *Stellately-disposed*, disposed or spreading in the manner of a star.
Stem-clasping, clasping the stem; a leaf is so called when it clasps the stem with its base.
Sterile, barren.
Sternutory, qualities which provoke sneezing.
Stigma, the female organ of a flower.
Stigmatose, when a stigma is long, lateral, or on one side of the style.
Stimulating, exciting.
Stipe, the stalk of a fruit within the corolla and calyx, or the claw of a petal.
Stipe-formed, having the form of a stipe.
Stiped, having a stipe.
Stipitate, furnished with a stipe.
Stipitately-unguiculate, having cylindrical unguis or claws.
Stipulas, *Stipules*, small scales or membranes at the base of the petioles, uncertain leaves, usually one on each side.
Stipulate, *Stipulaceous*, furnished with stipulas.
Stipulaceously-dilated, when a petiole is dilated at the base it is so called.
Stipular, in place of stipulas.
Stipulary, occupying the place of stipulas.
Stipuled, having stipulas.
Stolons, runners which root at the joints, as those of the strawberry.
Stoloniferous, bearing creeping runners which root at the joints.
Stomachic, agreeable to the stomach.
Strangury, a disease, also produced on plants by tight ligatures.
Strata, layers, beds.
Streaks, little channels, furrows, or lines.
Striæ, small streaks.
Striated, having streaks.
Strict, upright, straight, not crooked.
Strigæ, little, upright, unequal, stiff hairs, swelled at their roots.
Strigose, covered with strigæ.
Strigosely-pilose, covered with long, stiff, unequal hairs, swelled at their roots.
Strigosely-muricated, covered with stiff unequal points, swelled at their roots.
Strobile, a fir cone; the fruit of *Magnolia*, and such like, are so called.
Strophiola, a round protuberance at the base of some seeds.
Strophiolate, having a strophiola.
Struma, a wen, a protuberance.
Strumose, *Strumous*, covered with strumæ.
Stupa, filamentose matter.
Stupose, full of filamentose matter.
Style, the stalk which intervenes between the ovary and the stigma and bearing the latter. The styles are called short in *Oxalis* when they are shorter than the shortest stamens.
Styliferous, bearing a style or styles.
Styptic, having the power to staunch blood.
Sub, in composition, signifies somewhat, as *subrotund*, somewhat round, or roundish; *substipitate*, having a very short stipe; *subcaulescent*, having a kind of stem; *subumbellate*, somewhat umbellate; *subsagittate*, somewhat sagittate; *sublobate*, somewhat lobed; *subdentate*, somewhat toothed; *subradical*, almost radical, and so forth.
Subalate, with a narrow wing or margin.
Suberose, corky.
Subulate, form of an awl, tapering to a point.
Subulate-conical, between awl-shaped and conical.
Succulent, fleshy, and filled with juice.
Sudorific, having the power of producing perspiration.
Suffrutescent, *Suffruticose*, *Suffruticulose*, shrubby in a slight degree.
Sulcate, *Sulcated*, furrowed, having furrows.
Superior, when any thing is above the ovarium it is called superior; the uppermost of any thing; the ovary or fruit is so called when it is above the calyx, petals, and stamens; a radicle is said to be superior when in that end of the seed furthest from the hylum.
Supernatant, floating on the surface of any thing.
Supine, lying with the face upwards.
Suppurate, to generate matter.
Supra-axillary, above the axils, in opposition to *infra-axillary*.
Supra-decompound, above compound, doubly compounded.
Surculi, young shoots.
Suture, the line formed by the cohesion of two parts, usually applied to the fruit.
Syngenesious, belonging to the 19th class in the sexual system.
Synthetical, combining, opposed to analytical.
Syphilitic, of or belonging to syphilis.

T.

Tails, the long feathery or hairy terminations of certain fruits.
Tap-root, a root which penetrates deep and perpendicularly into the ground without dividing.
Tapering, becoming gradually narrower.
Taper-pointed, having a long taper point.
Tartareous, consisting of tartar.
Teated, resembling the figure of a teat in animals.
Tendrils, the curling, twining organs by which some plants lay hold of others, as the vine.
Tendrilled, having tendrils.
Terete, like a taper, round and long.
Terminal, ending, or at the top of any thing.
Tern, in threes, or three in a whorl.
Ternary, consisting of threes, or succeeding by threes.
Ternate, a leaf consisting of three leaflets, 2-3-ternate, twice or thrice ternate.
Ternately-decompound, compounded in a ternate manner.
Ternately-verticillate, having three leaves in a whorl.
Tessellated, variegated by squares, chequered.
Testa, the skin or integument of a seed.
Testaceous, consistence of a shell.
Tetanus, cramp of the stomach.
Tetrachotomous, a stem that ramifies in fours.
Tetragonal, having four angles.
Tetragynous, having four styles.
Tetrandrous, having four stamens.
Tetrapetalous, having four petals.
Tetraquetrous, having four angles or sides.
Tetrasepalous, having four sepals.
Thalamus, that part of a flower which rises below the ovarium, and sometimes supports the outer envelopes as well as the stamens in all the *Thalamifloræ*.
Thallus, that part which bears the fructification in lichens.
Thecæ, the cases that contain the sporules of cryptogamic plants.
Thecaphore, an elongated receptacle, which bears one ovary only but not the petals, nor stamens; example the caper.
Thready, having long hairs like threads.
Threads, long hairs like threads.
Throat, the orifice of a flower.
Thyrse, a kind of dense panicle, like that of the lilac.
Thyrsoid, resembling a thyrse.
Tissue, may be composed of membranes, bladders, cells or fibres.
Tomentose, covered with dense curled white down or hairs.
Tomentosely-cinereous, covered with grey tomentum.
Tomentosely-scabrous, covered with rough tomentum.
Tomentosely-hairy, covered with long tomentum.
Tomentosely-hispid, covered with stiff tomentum.
Tomentosely-hoary, covered with hoary tomentum.
Tomentosely-pilose, covered with long tomentum.
Tomentosely-villous, covered with villous tomentum.
Tomentosely-pubescent, covered with pubescent tomentum.
Tomentum, dense, close, white curled hairs or down.
Tonic, bracing, corroborative.

Toothed, divided so as to resemble teeth.
Toothletted, furnished with little teeth.
Topical, local, confined to some particular place.
Torose, uneven, alternately elevated and depressed.
Tortuous, twisted.
Torulose, slightly torose.
Torus, the same as *Thalamus*.
Transversely-flexuous, bent in a cross direction.
Transversely-plicate, plaited in a cross direction.
Trapesiform, *Trapeziform*, } in the shape of a trapezium.
Trapezoid, having the form of a trapezium.
Triandrous, having three stamens.
Tribracteate, having three bracteas.
Trichotomous, branches dividing in threes.
Trichotomously-panicled, having a panicle, whose branches divide in threes.
Tricoccous, a fruit of 3 1-seed cells is so called, as those of *Euphorbia*.
Tricuspidate, having three points.
Tridentate, having three teeth
Trifarious, arranged in triple rank or in three rows.
Trifoliate, having three leaflets.
Trifid, divided into three, or not to the base.
Trigonal, having three angles.
Trigynous, having three styles.
Trilocular, having three cells.
Tripetaloid, appearing as if furnished with three petals.
Tripetalous, having three petals.
Tripinnate, thrice-pinnate.
Tripinnatifid, thrice pinnatifid.
Triple-nerved, three-nerved, and throwing out three side nerves a little above the base.
Triquetrous, having three sides or angles.
Triquetrously-2-edged, having only two edges, the third being nearly obsolete.
Trisected, cut into three parts.
Triternate, thrice ternate.
Triturated, reduced to powder by pounding.
Trochleate, twisted like a pully.
Trochleately-arched, twisted and arched.
Tropical, belonging to the torrid zone.
Truncate, blunt, as if cut off.
Truncately-obtuse, blunt, and as if cut off.
Truncately-triangular, cut off at end so as to give the leaf a triangular figure.
Tube of stamens or *staminiferous tube*, the tube formed from the cohesion of the filaments in monadelphous flowers is so called.
Tube of calyx, the tube formed from the cohesion of the sepals.
Tubercled, *Tuberculate*, *Tuberculated*, *Tubercular*, } covered with knots or tubercles.
Tuberculately-hairy, covered with stiff short hairs resembling tubercles.
Tuberous, bearing fleshy, solid, roundish or longish roots, like the potatoe.
Tubers, roots so called, potatoes.
Tubular, forming a tube.
Tufted, forming a dense tuft.
Tumid, swelling.
Tunic, a coat, a seed cover.
Tunicated, having a coat or coats.
Turbinate, *Turbinated*, } having the figure of a top.
Turbinately-globose, between the form of a top and a globe.
Turgid, swollen, puffed up.

U.

Umbellulate, disposed in small umbels.
Umbellate, having the flowers in round flat heads, the peduncles originating from a common centre, as in the carrot.
Umbellately-branched, branched in an umbellate manner.
Umbelliferous, bearing umbels.
Umbellules, *Umbellets*, } small umbels, the divisions of an umbel.
Umbels, the flat tuft of flowers produced by a carrot, the peduncles and pedicels always rising from a common centre.
Umbilical, of or belonging to the umbilicus.
Umbilicate, *Umbilicated*, } hollowed like the navel.
Umbilicus, the cord which attaches the seed to the placenta.
Umbonate, having a top in the centre like that of the ancient shield.
Unarmed, destitute of prickles or spines, which are called the arms of plants.
Unappendiculate or *inappendiculate*, without appendages of any kind.
Uncinate, hooked.
Uncinately-inflexed, hooked inwards.
Unctuous, fat, oily.
Undulate, *Undulated*, } waved, rising and falling.
Undulately-crenated, crenated and waved.
Undulately-curled, curled and waved.
Undulately-rugose, *Undulately-wrinkled*, } rugged or wrinkled and waved.
Unequal, when applied to petals or sepals, indicates that they are of unequal size and shape.
Unequal-sided, having unequal sides.
Unguiculate, *Unguiculated*, } furnished with claws or an unguis.
Unguis, the taper-base of a petal or any thing else.
Unilabiate, having only one lip.
Unilateral, one-sided, or leaning to one side.
Unilocular, having one cell.
Unisexual, being of one sex.
Urceolar, of or belonging to an urceolus, having an urceolus, or expanded into an urceolus; usually applied to the disk.
Urceolate, pitcher-shaped.
Urceolus, the filaments may be joined into a pitcher-shaped body, this is called the urceolus of the stamens, or they may be surrounded by a pitcher-shaped membrane, this is also called an urceolus.
Ustulate, blackened.
Uterine, belonging to the womb.
Uterus, the womb.
Utricle, a little bottle or bladder.
Utricular, composed of little bladders.

V.

Valvate, opening like valves.
Valvately-connate, joined like valves.
Valvæform, form of a valve.
Valveless, without valves.
Valvular, consisting of valves.
Valvular-dissepiments, having dissepiments or partitions in the centre of the valves.
Valves, the divisions of a capsule.
Valved, having valves.
Varicose, swollen here and there.
Vascular, composed of tubes or vessels.
Vaulted, formed or placed like the roof of a vault.
Veinless, without veins.
Velvety, covered with down like velvet.
Velvety-puberulous, covered with velvety down.
Velvety-pubescent, covered with soft, pressed down, like velvet.
Velvety-tomentose, covered with soft tomentum like velvet.
Veneering, the art of covering one kind of wood with thin plates of another kind.
Ventricose, inflated.
Vermicular, having the appearance of a worm.
Vermifuge, that which expels worms.
Vernacular, native.
Vernal, belonging to the spring.
Versatile, swinging lightly on a stalk, so as to be continually changing direction.
Vertex, the uppermost point.
Vertical, perpendicular.
Vertically-compressed, that is depressed.
Verticillate, disposed in a whorl.
Vertilinear, the same as rectilinear.
Vesicatories, blistering plasters.
Vesicles, hollow excrescences, resembling bladders.
Vexillum, standard, the upper petal of a pea-flower.
Villi, long, close, rather soft hairs.
Villous, covered with soft, close, long, loose hairs.
Villously-ciliated, ciliated with soft hairs.
Villously-cinereous, covered with grey, soft, long loose hairs.
Villously-hairy, covered with soft hairs.
Villously-pubescent, covered with soft long pubescence.
Villously-tomentose, covered with soft long tomentum.
Violaceous, the colour of a violet.
Virescent, greenish.
Viscid, *Viscous*, } adhesive, clammy.
Viviparous, bearing young plants in the place of flowers and seed.
Vulnerary, useful in the cure of wounds.
Vulviform, like a cleft with projecting edges.

W.

Warted, covered with protuberances like warts.
Wattled, having processes like the wattles of a cock.
Wavy, undulated.
Waved, having wavy edges.
White-velvety, covered with white down like velvet.
Whorled, disposed in whorls or whirls.
Whorls, leaves inserted round a stem, as those of *Hippuris* or *Equisetum*.
Wing, in botany, signifies a membranous border, wherewith many seeds are supported in the air, when floating from place to place.
Wings, the side petals of a pea-flower.
Wing-formed, having the form of a wing.
Winged, having a wing or wings.
Wrinkled, having an uneven surface.

Z.

Zonate, having a dark belt in the shape of a horse-shoe, as in some species of *Pelargonium*.
Zones, stripes or belts.
Zigzag, a stem is called zigzag when it bends from side to side.

INDEX TO THE FIRST VOLUME,

COMPRISING THE

SYSTEMATIC AND ENGLISH GENERIC NAMES, AND THE ENGLISH AND SYSTEMATIC SYNONYMES.

*** In this Index the systematic names used, and the English names in common use, are in *Roman letters;* the synonymes in *Italics;* the names of Classes, Sub-classes, and Orders in *large capitals;* and the names of Sub-orders and Tribes in *small capitals.*

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CORRECTIONS.

Page 15. *for* Pulsatllaf *read* Pulsatílla.
—— 47. *under* Isopyrum fumarioides *read* flowers yellow instead of white.
—— 57. *for* Monk's-wood *read* Monk's-hood.
—— 68 *for* Polydelphous *read* Polyadelphous.
—— 78. *for* shobile-like *read* strobile-like.
—— 86. *for* Calyciflora *read* Calycifloræ.
—— 118. first column, in the specific characters of Mahònia aquifòlium, no. 2. and Mahònia nervòsa, no. 4. *for* distant from the petiole *read* distant from the base of the petiole.
—— 122. 128, and 129 *for* Nymphiaceæ *read* Nymphæaceæ.
—— 122. and 124 *for* Nymphæea *read* Nymphæeæ.
—— 418, lines 3 and 6, *for* grandiflora *read* grandifolia.
——, col. 2, lines 9 and 12, *for* parviflora *read* parvifolia.
—— 429. col. 2, line 17 from bottom, *for* ☉ *read* ♃.
Page 526. *for* urceolas *read* urceolus.
—— 354. *under* Polygala arillata *read* flowers yellow instead of red, and shrub 10 feet high instead of 1 foot.

The following words to be altered wherever they are found.

For monodelphous *read* monadelphous.
—- unquiculate *read* unguiculate.
—- Andr. Juss. *read* Adr. Juss.
—- Ræm. et Schultz. *read* Rœm. et Schult.
—- brevisty'lus a, um *read* brevístylus a, um.
—- longisty'lus a, um *read* longístylus a, um.
—- rádicans *read* radìcans.

THE

GARDENER'S AND BOTANIST'S DICTIONARY.

DICOTYLEDONEÆ.

GRAND DIVISIONS.

GRAND DIVISION I. VASCULA'RES, (from *vas*, a vessel; plants furnished with spiral vessels) OR COTYLEDO'NEÆ, (κοτυληδων, *cotyledon*, a seed leaf; plants furnished with seed leaves.)—Plants with cellular tissue (f. 1. 1. *b.*), woody fibre and spiral vessels (*a a*), and furnished with true leaves (f. 1. 3. 8. 7.). The flowers usually distinct and symmetrical (f. 2.). Embryo furnished with cotyledons (f. 1. 4. 5. 10. *a.*), and inclosed within a seed-cover. This division contains all the classes of Linnæus, Cryptogamia excepted.

GRAND DIVISION II. CELLULA'RES, (*cellula*, a little cell; plants with cellular tissue only,) OR ACOTYLEDO'NEÆ, (*a.* privative, κοτυληδων, *cotyledon;* plants without cotyledons.)—Plants with cellular tissue only (f. 1. 11, 12.). Embryo destitute of cotyledons. Parts of fructification hidden (f. 1. 14. 13. *a.*). This grand division only contains the class Cryptogamia of Linnæus.

GRAND DIVISION I.

VASCULA'RES OR COTYLEDO'NEÆ.

CLASSES.

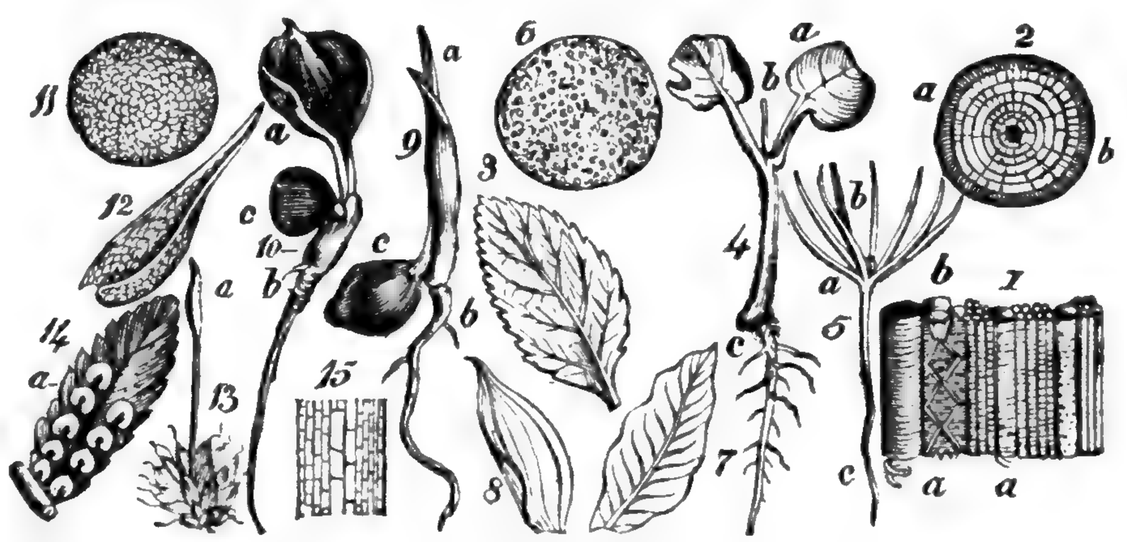
CLASS I. DICOTYLEDO'NEÆ, (δις, *dis*, two; κοτυληδων, *cotyledon;* plants furnished with two cotyledons) or EXOGE'NÆ (εξω, *exo*, without; γενναω, *gennao*, to bring forth; stem increasing by external layers). D. C. syst. 1. p. 123. prod. 1. p. 1.

Stem increasing by external layers; with an evident distinction between bark and wood (f. 1. 2. *a*, *b.*). Leaves traversed by branch veins (f. 1. 3.). Parts of flower generally disposed in a quinary number (f. 2. 2.). Embryo with 2 opposite cotyledons (f. 1. 4. *a.*), or when more they are disposed in a whorl (f. 1. 5. *a.*). Plumule in the centre of their point of junction (f. 1. 4. *b.* and 5. *b.*): the inferior end of the embryo itself elongated into a radicle, and not containing any secondary radicles in its substance (f. 1. 4. *c.* and 5. *c.*).

CLASS II. MONOCOTYLEDO'NEÆ, (μονος, *monos*, one; κοτυληδων, *cotyledon*, plants furnished with 1 cotyledon) or ENDOGE'NEÆ (ενδον, *endon*, within; γενναω, *gennao*, to bring forth; stem increasing by internal layers.)

Stem increasing by internal layers with no evident distinction between bark and wood, but are mixed together (f. 1. 6.). Leaves traversed by simple veins (f. 1. 7. 8.) usually with no articulation between the leaves and the stem, while in Dicotyledòneæ the leaves are always joined with the stem, from which they fall off, leaving a scar behind. Embryo furnished with 1 cotyledon (f. 1. 10. *a.*), or if 2, they are alternate (f. 1. 9. *a.*); the inferior end elongated into a radicle or radicles (f. 1. 10. *b.* & 9. *b.*). Plumule usually inclosed in the body of the embryo.

FIG. 1.



CLASS I.

DICOTYLEDO'NEÆ OR EXOGE'NÆ.

Synopsis of the Subclasses, deduced from the organs of fructification.

1. *Perigone double.* (f. 2. 3. and 4. *b.*)

Subclass I. THALAMIFLO'RÆ. (f. 2. 1.)

Petals many, distinct; and are, as well as the stamens, inserted in the receptacle (*a*).

Subclass II. Calyciflo'ræ (f. 2. 2.).

Petals many, distinct (*a*), or united together at the base, and are as well as the stamens, inserted in the calyx (*b*.).

Subclass III. Corolliflo'ræ. (f. 2. 3 and 4.).

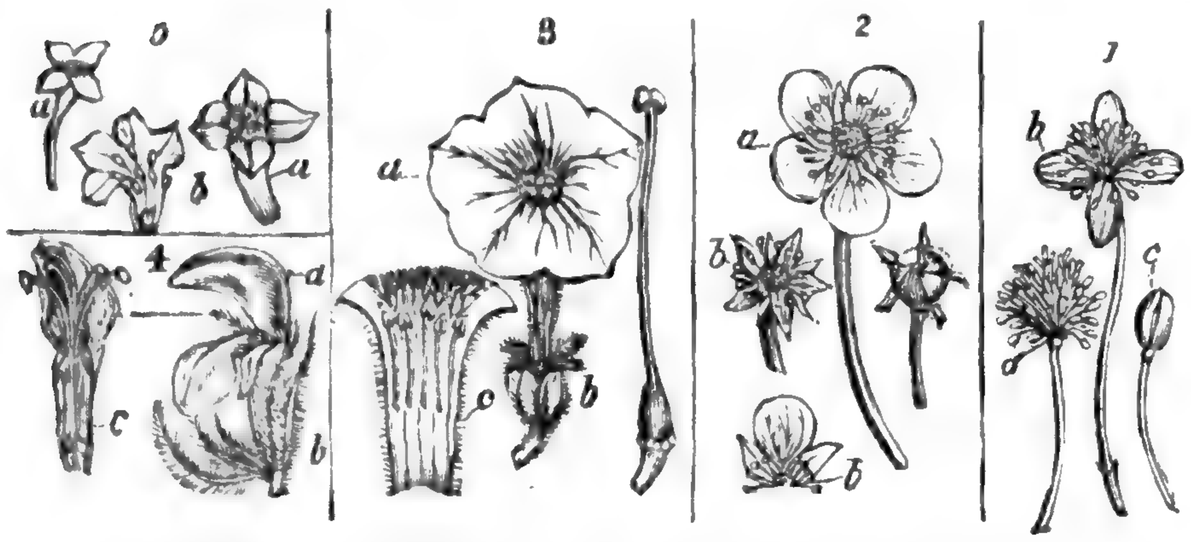
Petals united together in one (*a*.), inserted in the receptacle (*b*.), and bearing the stamens (*c*.).

2. *Perigone Simple* (f. 2. 5. *a*.).

Subclass IV. Monochlamy'deæ (f. 2. 5.).

Corolla wanting, or united with the calyx (*a*.) and bearing the stamens (*b*.).

FIG. 2.



Subclass I. THALAMIFLO'RÆ (from *thalamus*, a bride chamber, and *flos*, a flower, in allusion to the parts of the flower being inserted in the receptacle.) D. C. prod. 1. p. 1. Calyx of many sepals. Petals many, distinct, and are as well as the stamens inserted into the receptacle (f. 2. 1. *a*.). The insertion of the petals and stamens into the receptacle is the great character of this subclass, which therefore contains all the Polyandrous plants of Linnæus.

Sect. I. Ovaries numerous, aggregate (f. 3. *b*. f. 7. *b*. & f. 6. *c*.), each bearing a style rarely solitary from abortion or coalition (f. 13. *b*.). Stamens indefinite, or if definite then opposite the petals.

Order I. RANUNCULA'CEÆ. (plants agreeing with Ranunculus in many important characters.) Juss. 231. D. C. syst. 1. p. 127. prod. 1. p. 2.

Calyx of many definite sepals (f. 4. *a*. f. 6. *b*. f. 14. *a*.), or many parted with an equal number of petals (f. 14. *c*.), or twice or thrice that number, sometimes wanting (f. 7. *a*. f. 4. *a*. f. 3. *a*.). Stamens indefinite, free (f. 2. 1. *a*. f. 4. *b*.). Anthers adnate, usually turned outwards (f. 4. *b*.). Pistils inserted in the torus (f. 10. *d*.). Carpels many (f. 3. *b*. f. 6. *c*.), 1-celled (f. 6. *d*. f. 9. *g*.), pseudospermous (f. 6. *c*. f. 3. *b*.), baccate (f. 7. *b*. f. 13. *b*.), capsular (f. 11. *c*. f. 12. *c*.), or follicular (f. 14. *e*. *f*.), 1 (f. 6. *e*. f. 9. *g*.), or many-seeded (f. 13. *c*. f. 14. *f*.). Seeds attached by their inner side, solitary, erect (f. 9. *g*. *f*.) or pendulous (f. 6 *e*.), or if many, usually disposed in one row along the margin of the carpel (f. 14. *f*.). Embryo minute, placed in the base of a corneous albumen (f. 9. *f*.). Herbs, undershrubs, or sarmentose shrubs. Roots fascicled, grumose or fibrous. Leaves, simple or variously cut, with stalks more or less dilated at their base, alternate; but opposite in Clematideæ.

The greater part of the plants of this order are objects of interest with gardeners, containing as it does many of the most elegant and shewy of the tribes of plants. It is remarkable, however, that the acrid and venomous properties of these plants are nearly as powerful as their beauty is great. M. De Candolle remarks, that its nature is extremely singular; it is so volatile, that in most cases, simple drying in the air, or infusion in water, is sufficient to destroy it; it is neither acid nor alkaline; but its activity is increased by acids, honey, sugar, wine, or alcohol, and it is in reality destructible only in water. The recent herb applied externally to the skin causes blisters. The roots are usually drastic or emetic. The seeds are generally acrid and aromatic, and retain their power of vegetation a considerable time, therefore they are easily imported in a vegetative state from any part of the world.

Synopsis of the Genera.

True RANUNCULA'CEÆ. Anthers bursting outwards (*pl.* 1. f. 5.).

Tribe I.

Clematídeæ. *Calyx in the bud valvate* (f. 2. 1. *c*.), *or induplicate* (f. 4. *c*. *d*.). *Petals wanting* (f. 2. 1. *b*. f. 4. *a*.), *or flat. Carpels indehiscent* (f. 3. *b*.), *1-seeded* (f. 3. *d*.), *ending in a tail, which is generally feathery* (f. 3. *e*. *c*.). *Seed pendulous* (f. 3. *d*.). *Leaves opposite* (f. 3. 4 and 5.). *Climbing shrubs, rarely herbs.*

1 Cle'matis. Petals wanting (f. 3. and 4. *a*.). Carpels sessile (f. 3. *b*.).

2 Atrage'ne. Petals numerous, shorter than the calyx. Carpels sessile.

3 Narave'lia. Petals 6 to 12, longer than the calyx (f. 5. *a*.). Carpels seated on a thick hollow stipe (f. 5. *b*.).

Tribe II.

Anemòneæ. *Calyx and Corolla imbricate in the bud* (f. 14. *a*.). *Petals wanting* (f. 6. *b*. f. 7. *a*.), *or flat. Carpels 1-seeded* (f. 6. *d*.), *indehiscent* (f. 6. *c*.), *usually ending in a tail* (f. 6. *f*.) *or point* (f. 6. *c*.). *Seed pendulous* (f. 6. *e*.). *Leaves radical* (f. 6.), *or alternate* (f. 7.). *Herbs, rarely shrubs.*

4 Thalíctrum. Involucre wanting. Calyx of 4 or 5 petal-like sepals. Petals wanting. Carpels dry, never ending in a tail, stipitate, or sessile, sometimes furrowed longitudinally.

5 Tetra'ctis. Involucre wanting. Calyx of 4 petal-like sepals. Petals wanting. Stamens 4. Carpels 4, acute.

6 Anemòne. Involucre of 3 cut leaflets, distant from the flower (f. 6. *a*.). Calyx of 5 to 15 petal-like sepals (f. 6. *b*.). Petals wanting.

7 Hepa'tica. Involucre of 3 entire leaflets, just under the flower. Calyx of from 6 to 9 petal-like sepals. Petals wanting.

8 Hydra'stis. Involucre wanting. Calyx of 3 sepals (f. 7. *a*.). Petals wanting. Carpels baccate (f. 7. *b*).

9 Knowltònia Involucre none. Calyx of 5 sepals. Petals 5 to 15. Carpels baccate.

10 ADÒNIS. Involucre wanting. Calyx of 5 pressed sepals. Petals 5 to 15. Carpels dry, ovate, pointed with the style.

11 HAMADRY'AS. Involucre wanting. Calyx of 5 or 6 sepals (f. 8. *a.*). Petals 10 or 12 (f. 8. *b.*). Carpels ovate. Flowers dioecious.

TRIBE III.

RANU'NCULEÆ. *Calyx and Corolla imbricate in the bud* (f. 14. *a.*). *Petals bilabiate, or increased with a scale on the inside at the base* (f. 9. *c.*). *Carpels* 1*-seeded* (f. 9. *g.*), *dry, indehiscent* (f. 9. *e. d.*). *Seed erect* (f. 9. *f.*). *Leaves radical or alternate* (f. 9.). *Herbs.*

12 MYOSU'RUS. Sepals 5, unconnected at the base, and drawn out downwards beyond their insertion. Petals 5. Carpels disposed on a long slender receptacle.

13 CERATOCE'PHALUS. Sepals 5, connected at the base. Petals 5. Pericarps gibbous on both sides at the base, and drawn out at the apex in a horn, which is 6 times longer than the seed, disposed in a long spike.

14 RANU'NCULUS. Sepals 5, connected at the base (f. 9. *a.*). Petals usually 5 (f. 9. *b.*). Pericarps not gibbous at the base, pointed, disposed in globose or cylindrical heads (f. 9. *e. d.*).

15 CASA'LIA. Calyx of 3 petal-like sepals connected at the base. Petals 3. Pericarps not gibbous at the base, pointed, disposed in hemispherical or cylindrical heads.

16 APHANOSTE'MMA. Calyx of 5 petal-like sepals, connected at the base. Petals 5, small, gland-like. Pericarps not gibbous at the base, compressed, orbicular, pointed, somewhat marginate.

17 FICA'RIA. Sepals 3, connected at the base. Petals 9. Pericarps blunt.

TRIBE IV.

HELLE'BOREÆ. *Calyx and Corolla imbricate in the bud* (f. 14. *a.*). *Petals sometimes wanting* (f. 12. *a.*), *sometimes irregular, bilabiate, nectariferous* (f. 11. *e.* f. 12. *b.*). *Calyx petal-like* (f. 11. *b.* f. 12. *a.*). *Carpels capsular, dehiscent, many-seeded* (f. 11. *c.* f. 12. *c.*). *Leaves radical or alternate* (f. 10. 12.). *Herbs.*

18 CA'LTHA. Calyx deciduous, or permanent, of 5 regular petal-like sepals (f. 10. *a.*). Petals wanting. Capsules sessile.

19 TRÓLLIUS. Calyx deciduous, of from 5 to 20 regular petal-like sepals. Petals from 5 to 20, unilabiate. Capsules sessile.

20 ERA'NTHIS. Involucre many-parted, just under the flower (f. 11. *a. d.*). Calyx deciduous, of from 5 to 8 regular petal-like sepals (f. 11. *b.*). Petals 6 to 8. Capsules on pedicels (f. 11. *c.*).

21 HELLE'BORUS. Calyx permanent, rather coriaceous, of 5 sepals. Petals 8 to 10. Capsules coriaceous, sessile.

22 CÓPTIS. Calyx deciduous, of 5 or 6 regular petal-like sepals. Petals 5 or 6. Capsules membranaceous, on pedicels.

23 ISOPY'RUM. Calyx deciduous, of 5 regular petal-like sepals. (f. 12. *a.*). Petals 5 (f. 12. *b.*). Capsules sessile, membranaceous (f. 12. *c.*).

24 ENE'MION. Calyx of 5 deciduous petal-like sepals. Filaments clavated. Capsules ovate, compressed, 2-seeded, pointed with the style, sessile, membranaceous.

25 GARIDE'LLA. Calyx deciduous, of 5 regular petal-like sepals. Petals 5. Carpels 3, connected. Styles very short.

26 NIGE'LLA. Calyx of 5 deciduous petal-like sepals. Petals 5 to 10. Carpels 5, connected. Styles very long.

27 AQUILE'GIA. Calyx of 5 regular petal-like sepals. Petals 5, each drawn out downwards into a hollow spur.

28 DELPHI'NIUM. Calyx of 5 deciduous petal-like irregular sepals, with the upper one drawn out downwards into a hollow spur. Petals 4, the 2 upper ones drawn out downwards into the spur.

29 ACONÌTUM. Calyx deciduous, of 5 irregular petal-like sepals, with the upper sepal helmet-shaped. Petals 2-stalked, tubular, within the hollow of the upper sepal.

TRIBE V.

PÆONIA'CEÆ, *or spurious* RANUNCULA'CEÆ. *Anthers bursting inwards. Leaves radical or alternate. Herbs, rarely shrubs.*

30 CIMICI'FUGA. Calyx of 4 deciduous sepals. Petals 4. Styles 1 to 12. Carpels dry, dehiscent, many-seeded.

31 ACTÆ'A. Calyx of 4 deciduous sepals. Petals 4. Style 1. Carpel baccate, indehiscent (f. 13. *b.*), many-seeded (f. 13. *c.*).

32 ZANTHORHÌZA. Calyx of 5 deciduous sepals. Petals 5. Carpels 2 or 3-seeded, but from abortion usually 1-seeded.

33 PÆÒNIA. Calyx of 5 permanent sepals (f. 14. *b.*). Petals 5, flat (f. 14. *c.*). Carpels follicular, many-seeded (f. 14. *f. e.*).

Tribe I.

CLEMATI'DEÆ (plants resembling Clematis,) D. C. syst. 1. p. 131. prod. 1. p. 2. Calyx when in bud valvate (f. 2. 1. *c.*) or induplicate (f. 4. *d. c.*). Petals none (f. 3. and 4.). or flat (f. 5.). Anthers linear, turned outwards (f. 4. *b.*). Carpels aggregate (f. 3. *b.*), 1-seeded, indehiscent, terminated by a tail. (f. 3. *c.*). Seed pendulous (f. 3. *d.*). Leaves opposite (f. 3. and 4.). Roots fibrous.

I. CLE'MATIS (from κλημα, *clema*, a vine branch, because most of the species climb like the vine) Lin. gen. no. 695. Gært. fruct. 1. p. 353. t. 14. D. C. syst. 1. p. 131. prod. 1. p. 2.

LIN. SYST. *Polyándria, Polygy'nia.* Involucre none, or situated under the flower, in the form of a calyx. Calyx of from 4 to 8 coloured sepals. Petals none (f. 3. and 4.). Carpels numerous, aggregate (f. 3. *b.*), terminated by a long, mostly feathery, tail. (f. 3. *c.*). Climbing shrubs, with variously cut opposite leaves. (f. 3. and 4.) The recent herb of all the species is more or less acrid, and when applied to the skin occasions blisters.

The English name of this genus, *Virgin's-Bower*, is given to it on account of several of the species being used for covering bowers. It is also called *Traveller's-joy*, because several of the species grow in hedges by way-sides, as well as from the beauty and the scent of their flowers, or more probably from their affording a grateful shade.

SECT. I. FLA'MMULA (from *flammeo*, to inflame; blistering qualities of plants). D. C. syst. 1. p. 131. prod. 1. p. 2. Involucre wanting. Tail of carpel long, bearded, feathery (f. 3. *c.*). Cotyledons distant in the seed.

§ 1. *Flowers panicled. Leaves pinnate* (f. 4.), *or bipinnate. Those species that are said to have pinnate leaves have the leaflets of the lower leaves often ternate.*

1 C. ERE'CTA (All. pedem. No. 1078.) stem erect; leaves pinnate, with stalked ovate, acuminated quite, entire leaflets; corymbs dense; sepals oval. ♃. H. Native of the south of Europe, particularly in France, Spain, Austria, Tartary, &c. on hills and in woods. Schkur. handb. 2. t. 151. C. récta, Lin. spec. 767. Jacq. aust. t. 291. Woodv. med. bot. 1. p. 173. t. 62. C. flámmula. All. pedem. no. 1080, exclusive of the synonymes. Flowers white, sweet-scented. This plant was recommended by Baron Stœrk, in 1769, as an useful medicine in many obstinate complaints. He found it successful in inveterate syphilitic diseases. It was usual for him to employ the leaves and flowers, as well as an extract prepared from the former; yet the preparation which he chiefly recommends is an infusion of two or three drams of the leaves in a pint of boiling water, of which he gave four ounces three times a day, while the powdered leaves were applied as an escharotic to the ulcers.

Var. β, C. surrécta præcócior, &c. Tourn. inst. 394. stems reddish; leaflets cordate or ovate-lanceolate.

Var. γ, C. Hispánica surrécta, &c. Tourn. inst. 594. leaflets oblong-lanceolate; bracteas large, elongated, oblong. C. Hispánica Mill. dict. no. 3. C. corymbòsa, Poir. dict. 2. p. 297.

Var. δ, bracteòsa (Banks. herb.) bracteas oblong, large, elongated.

Erect Virgin's Bower. Fl. Ju. to Aug. Clt. 1597. Pl. 2 to 3 ft.

2 C. MARÍTIMA (Lin. spec. 767.) stem erect, herbaceous; leaves pinnate; leaflets lanceolate, tapering to both ends, entire, and 3-lobed; upper leaves linear; corymbs loose; sepals spatulate. ♃. H. Native of Europe. Leaflets 5, stalked, 3-nerved. Corymbs terminal and axillary. Flowers white, larger than those of *C. erécta*; sepals 3-5.

Sea-side Virgin's Bower. Fl. Jul. Aug. Clt.? Pl. 3 to 4 ft.

3 C. FLA'MMULA (Lin. spec. 766.) leaves pinnate, smooth with orbicular, oval, oblong or linear, entire or 3-lobed, acutish leaflets. ♄. ◡. H. Native of the South of Europe and North of Africa, common in hedges and bushy places. Flowers white, sweet-scented.

Var. α, rotundifòlia (D. C. syst. 1. p. 134.) leaflets almost orbicular. Native of Naples. C. frágrans, Tenore, fl. neap. vol. 1. t. 48. prod. 32.

Var. β, vulgàris (D. C. l. c.) leaflets oval or oblong-lanceolate. C. flámmula, Lin. spec. 766. C. marítima, All. pedem. no. 1081.

Var. γ, marítima (D. C. l. c.) leaflets linear. Native near Montpelier, by the sea-side.

Var. δ, rubélla (D. C. syst. 1. p. 135.) leaflets oval, usually emarginate; sepals 4, reddish on the outside.

Var. ε, cæspitósa (D. C. prod. 1. p. 3.) leaflets minute, entire, or cut. C. cæspitòsa, Scop. fl. carn. ed. 2. vol. i. p. 389. C. flámmula, B. Bertol. amœn. 236. These plants are less acrid than any others of the genus.

Flame, or sweet-scented Virgin's Bower. Fl. Jul. to Oct. Clt. 1596. Shrub cl.

4 C. MASSONIA'NA (D. C. syst. 1. p. 135.) leaves pinnate; leaflets smooth, rather glaucous, ovate, deeply-toothed, 3-lobed or ternate. ♄. ◡. G. Native of South Africa. Leaflets usually 7. Pericarps elliptical, pubescent.

Masson's Virgin's Bower. Fl.? Clt.? Shrub cl.

5 C. ORIENTA'LIS (Lin. spec. 763.) leaves pinnate; leaflets smooth, wedge-shaped, with 3 toothed pointed lobes. ♄. ◡. H. Native of the Levant and Caucasus, in bushy places. Pict. hort. par. p. 37. f. 3. C. flàva. Mœnch. meth. 296.—Dill. elth. 144, t. 119, f. 145, good. There is a variety with trifid peduncles. Flowers greenish-yellow, with a tinge of russet on the upper part and outside; sweet-scented.

Eastern Virgin's Bower. Fl. Aug. Sept. Clt. 1731. Sh. cl.

6 C. GLAU'CA (Willd. arb. 65. t. 4. f. 1.) leaves pinnate; leaflets smooth, glaucous, wedge-shaped, with entire bluntish lobes; peduncles trifid. ♄. ◡. H. Native of the southern parts of Siberia in arid places. Wats. dend. brit. t. 78. Leaflets usually 3-lobed. Panicle somewhat corymbose. Flowers yellowish, scentless.

Glaucous Virgin's Bower. Fl. Ap. to Jul. Clt. 1800? Sh. cl.

7 C. PANICULA'TA (Thunb. in Lin. trans. 2. p. 337.) leaves pinnate; leaflets ovate-cordate, acute, entire; peduncles panicled, many-flowered. ♄. ◡. H. Native of Japan, near Nagasaki. C. vitálba japónica, Houtt. pflanz. 7. p. 309. f. 2. C. críspa, Thunb. fl. jap. 239, but not of Lin. Leaves pinnately decompound. Panicles axillary. Flowers white, sweet-scented, resembling those of *C. flámmula*.

Panicled-flowered Virgin's Bower. Fl. Jul. Aug. Clt. 1796. Shrub cl.

8 C. LONGI'LOBA (D. C. syst. 1. p. 136.) leaves pinnate; leaflets oblong-lanceolate, quite entire, smooth. ♄. ◡. H. Native of China. An intermediate species between *C. paniculáta*, and *C. minor*. Leaflets 5 or 7, distant, on long stalks. Flowers probably white, and sweet-scented.

Long-lobed-leaved Virgin's Bower. Shrub cl.

9 C. MI'NOR (Lour. fl. cochin. 1. p. 422.) leaves pinnate; leaflets ovate-lanceolate, quite entire; peduncles many flowered, length of leaves; ovaries 4. ♄. ◡. H. Native of China, in the suburbs of Canton. A little like *C. flámmula*. Stem suffruticose. Leaflets 5, blunt, on long stalks. Flowers the smallest of all the genus, white and sweet-scented.

Smaller-flowered Virgin's Bower. Shrub cl.

10 C. CHINE'NSIS (Retz. obs. 2. p. 18. No. 53. t. 2.) leaves pinnate, leaflets ovate-lanceolate, quite entire; peduncles few-flowered, longer than the leaves; ovaries usually 4, with almost naked tails. ♄. ◡. H. Native of China, in the islands called Danes. C. Sinénsis, Lour. coch. 1. p. 422. Leaflets 5. Flowers small, dark-purple, and probably sweet-scented.

Chinese Virgin's Bower. Fl.? Clt. 1820. Shrub cl.

11 C. TERNIFLÒRA (D. C. syst. 1. p. 137.) leaves pinnate; leaflets ovate, blunt, quite entire; peduncles trifid, 3-flowered; ovaries usually 5, with bearded tails. ♄. ◡. F. Native of China, in the province of Chekiang. Leaflets 5 or 7. Flowers probably white and sweet-scented. Middle pedicle naked, lateral ones bearing awl-shaped bracteas beneath their middle.

Three-flowered Virgin's Bower. Shrub cl.

12 C. BREVICAUDA'TA (D. C. syst. 1. p. 138.) leaves pinnate; leaflets ovate-lanceolate, acuminated, grossly serrated; peduncles spreading, crowdedly panicled, shorter than the leaves. ♄. ◡. F. Native of China, between Pekin and Jehol. Flowers probably white.

Short-tailed-carpelled Virgin's Bower. Shrub cl.

13 C. HERACLEÆFÒLIA (D. C. syst. 1. p. 138.) leaves pinnate; leaflets ovate-lanceolate, broadly and deeply-toothed, terminal one 3-lobed; peduncles erect, and are, as well as the branches, velvety-cinereous. ♄. ◡. F. Native of China, between Pekin and Jehol. Leaflets coriaceous. Flowers white.

Heracleum-leaved Virgin's Bower. Shrub cl.

14 C. GOURIA'NA (Roxb. ined in herb. Lamb. D. C. syst. 1. p. 138.) leaves pinnate; leaflets ovate-lanceolate, usually 5-nerved, acuminated, entire or toothed, cordate at the base; peduncles pubescent, generally longer than the leaves. ♄. ◡. S. Native of the East Indies. Leaflets 3 or 5, on long stalks. Sepals velvety.

Gour's Virgin's Bower. Shrub cl.

15 C. VITA'LBA (Lin. spec. 766.) leaves pinnate; leaflets ovate-lanceolate, acuminated, cordate at the base, partly cut; peduncles forked, shorter than the leaves. ♄. ◡. H. Native of the middle and south of Europe, in the islands of the Archipe-

lago, and north of Africa; very common in hedges and bushy places, in the plains, and on the lower mountains; in Britain especially on a calcareous soil. Eng. bot. t. 612. Curt. lond. fasc. 4. t. 37. Jacq. aust. t. 308. Schkur. handb. 2. p. 1472. t. 151. Schrank hort. monac. 2. t. 108. C. sèpium, Lam. fl. fr. 3. p. 306. Leaflets 5. Flowers white, with a sweet almond scent.

Var. β, integràta (D. C. syst. 1. p. 139.) leaflets with very few teeth or quite entire. Vítis nìgra. Fusch. hist. 97, with a wood-cut.

White-vine, or Traveller's Joy. Fl. July to Sept. Brit. Sh. cl.

16 C. GREWIÆFLÒRA (D. C. syst. 1. p. 140.) leaves pinnate, clothed with yellow down; leaflets cordate, acute, sharply serrated; peduncles 3 or 5-flowered, shorter than the leaves. ♄. ◡. H. Native of Nipaul, about Narain-Hetty. Leaflets 3 or 5. Flowers white, downy, purplish at the base on the outside.

Grewia-flowered Virgin's Bower. Fl. Nov. Shrub cl.

17 C. BUCHANIA'NA (D. C. syst. 1. p. 140.) leaves pinnate, white-velvety underneath, and smooth above; leaflets cordate, acute, toothed; peduncles many-flowered, shorter than the leaves. ♄. ◡. H. Native of Nipaul at Narain-Hetty. C. Buchanàni, D. Don, prod. fl. nep. p. 191. C. Bucamàra, Ham. MSS. Leaflets 3 or 5. Flowers white, downy.

Buchanan's Virgin's Bower. Fl. Oct. Shrub cl.

18 C. LOASÆFÒLIA (D. C. syst. 1. p. 140.) leaves ternate or quinate, sometimes simple, very villous; leaflets cordate, acuminate, lobed, grossly-serrated; peduncles trifid, few-flowered, much shorter than the leaves. ♄. ◡. H. Native of Nipaul. C. Bucamàra var. Ham. MSS. Flowers woolly, campanulate, with a revolute border.

Loasa-leaved Virgin's Bower. Fl. Oct. Shrub cl.

19 C. CONNA'TA (D. C. prod. 1. p. 4.) leaves smooth, pinnate; leaflets ovate-lanceolate, acuminate, grossly serrated; petioles dilated at the base, connate. ♄. ◡. F. Native of Nipaul. Flowers probably white.

Connate-petioled Virgin's Bower. Shrub cl.

20 C. PERUVIA'NA (D. C. syst. 1. p. 141.) leaves bipinnate, villous; leaflets ovate, trifid, cut at the apex; flowers somewhat panicled, polygamous; peduncles longer than the leaves, furnished with bracteas. ♄. ◡. S. Native of Peru. Stems purplish, and are as well as petioles pubescent. Flowers small, greenish-yellow?

Peruvian Virgin's Bower. Shrub cl.

21 C. MONTEVIDE'NSIS (Spreng. syst. 2. p. 667.) leaves ternate-pinnate, smooth; leaflets divaricating, ovate-lanceolate, acuminated, trifid; peduncles few-flowered, spreading, equal in length with the leaves; sepals spreading, lanceolate, villous. ♄. ◡. S. Native of Monte-Video. Flowers white.

Monte-Videan Virgin's Bower. Shrub cl.

22 C. CORDA'TA (Pursh, fl. am. sept. 2. p. 384.) leaves pinnate, leaflets cordate, acuminated, lobed, or deeply-toothed; peduncles elongated, many-flowered; flowers dioecious in racemose panicles. ♄. ◡. H. Native of Virginia, on high mountains. Leaflets 3 or 5. Flowers small, white. In general appearance it approaches near to *C. vitálba*.

Cordate-leafletted Virgin's Bower. Fl. July. Shrub cl.

23 C. CARIPE'NSIS (H. B. and Kunth nov. gen. et spe. amer. 5. p. 36.) leaves pinnate; leaflets ovate, acuminated, 5-nerved, quite entire, smooth; pedicels and bracteas pubescent; flowers panicled, dioecious. ♄. ◡. S. Native of Cumana, in shady places, near Caripa. C. Caracasàna, D. C. syst. 1. p. 141. Leaflets 5. Flowers white, sweet-scented. Differing from all the other dioecious species in the leaves being pinnate, not ternate. In general appearance it is like *C. vitálba*.

Caripa Virgin's Bower. Fl. Aug. Sept. Clt. 1820. Shrub cl.

24 C. AFFI'NIS (St. Hil. fl. bras. 1. p. 3.) leaves pinnate; leaflets oblong, acuminate, acute, quite entire, pubescent beneath; pericarps hairy. ♄. ◡. S. Native of Brasil, in the province of Minas Geraes, near Onca. Flowers white? Pericarps with feathery tails. Leaflets 5 or 7, stalked.

Allied Virgin's Bower. Shrub cl.

§ 2. *Flowers panicled Leaves ternate* (f. 3.) *or biternate.*

25 C. VIRGINIA'NA (Lin. amœn. 4. p. 275.) flowers panicled, dioecious; leaves ternate; leaflets cordate, acute, grossly-toothed or lobed. ♄. ◡. H. Native of North America, from Canada to Florida, in hedges, and among small shrubberies on the sides of woods, and grassy banks of rivers. Wats. dend. brit. t. 74. C. Canadénsis, Mill. dict. no. 5. C. cordifòlia, Mœnch suppl. 104. Alb. acad. ann. 1. p. 79. t. 7. Flowers small, white and fragrant. In general appearance like *C. vitálba*.

Var. β, bracteàta (D. C. prod. 1. p. 4.) leaflets ovate-lanceolate, entire. C. bracteàta, Mœnch suppl. 103.

Virginian Virgin's Bower. Fl. June to Aug. Clt. 1767. Sh. cl.

26 C. CATESBYA'NA (Pursh. fl. amer. sept. 2. p. 736.) flowers panicled, usually dioecious; leaves biternate; leaflets somewhat cordate, 3-lobed. ♄. ◡. H. Native of South Carolina. Flowers small, white. Resembles *C. Virginiàna*. The filaments of the female flowers are membranous and linear, without anthers.

Catesby's Virgin's Bower. Shrub cl.

27 C. BRASILIA'NA (D. C. syst. 1. p. 143.) flowers panicled, dioecious; leaves 3-lobed, ternate or pinnate; leaflets stalked, ovate-lanceolate, entire or hardly toothed. ♄. ◡. S. Native of Brasil. Deless. icon. sel. 1. t. 1. Leaves pubescent. Flowers small, white, fragrant. Resembles *C. vitálba*.

Var. β, láxa (St. Hil. fl. bras. 1. p. 2.) stems slenderer; panicles elegantly loose; sepals narrower.

Var. γ, mìnor (St. Hil. l. c.) leaves, panicles, and bracteas smaller; bracteoles all linear, and are as well as the pedicels and ovaries villous; pericarps very villous.

Var. δ, glàbra (St. Hil. l. c.) leaves almost smooth.

Brasilian Virgin's Bower. Fl. July to Oct. Clt. 1823. Sh. cl.

28 C. DIOI'CA (Lin. amœn. 5. p. 398, spec. 765.) flowers panicled, dioecious; leaves ternate, smoothish; leaflets ovate, cordate, acuminated, 3-nerved, entire; pericarps oval; pedicels pubescent. ♄. ◡. S. Native of Jamaica.—Sloan. jam. 84. hist. 1. p. 199. t. 128. f. 1. Flowers white, fragrant. Resembles *C. vitálba*.

Dioecious Virgin's Bower. Fl. May to July. Clt. 1733. Sh. cl.

29 C. MOCINIA'NA; flowers panicled, dioecious; leaves pubescent; leaflets stalked, cordate-ovate, bluntish, 3-nerved, quite entire; sepals oblong or lanceolate, obtuse, about the length of the stamens, pubescent; pedicels pubescent. ♄. ◡. G. Native of Mexico. C. dioìca Lamb herb. The whole plant pubescent. Flowers small, white, resembling those of *C. vitálba*.

Mocino's Virgin's Bower. Shrub cl.

30 C. GLA'BRA (D. C. syst. 1. p. 143.) flowers panicled, dioecious; leaves ternate, very smooth; leaflets acuminated, 3-nerved, quite entire; pericarps oval-oblong; pedicels smooth. ♄. ◡. S. Native of St. Domingo. Very like *C. dioìca*.

Smooth Virgin's Bower. Shrub cl.

31 C. AMERICA'NA (Mill. dict. no. 14.) flowers panicled, dioecious; leaves ternate or pinnate; leaflets smooth, ovate, cordate, 5-nerved, quite entire, acuminated; pericarps lanceolate. ♄. ◡. S. Native of South America, Campechy, Guadaloupe, Martinico, and Jamaica. C. Guadalùpæ, Pers. ench. 2. p. 99. Panicle large. Flowers white.

American Virgin's Bower. Fl.? Clt.? Shrub cl.

32 C. LOUREIRIA'NA (D. C. syst. 1. p. 144.) flowers panicled, dioecious; leaves ternate; leaflets ovate, acute, very entire, usually 5-nerved; pericarps 80, bluntly trigonal. ♄. ◡. G. Native of Cochinchina. Flowers white.

Loureiro's Virgin's Bower. Shrub cl.

33 C. seri'cea (H. B. and Kunth nov. gen. et spec. amer. 5. p. 37.) flowers panicled, dioecious; leaves ternate or pinnate; leaflets ovate, 5-nerved, grossly 3 or 5-toothed, underneath silky, villous; peduncles shorter than the leaves, with many bracteas. ♄. ◡. S. Native of South America, about Santa Fe de Bogota, and probably along the banks of the Rio-Grande. Flowers white?

Var. a, striàtula (D. C. syst. 1. p. 144.) stems with 10 or 12 stripes. Native of Santa Fe de Bogota. Leaves ternate.

Var. β, tereticaúlis (D. C. l. c.) stem terete, not striped; pericarps 20—30, pubescent; leaves ternate and entire.

Var. γ. costàta (D. C. l. c.) stem with hardly prominent ribs. Native on the banks of the river called Rio-Grande. Leaves pinnate.

Silky-leaved Virgin's Bower. Shrub cl.

34 C. holoseri'cea (Pursh. fl. amer. sept. 2. p. 384.) flowers paniculately corymbose, dioecious; leaves ternate, pubescent on both surfaces; leaflets oblong-lanceolate, entire. ♄. ◡. H. Native of Carolina. The whole plant is clothed with silky pubescence. Sepals linear, longer than the stamens. Flowers small, white.

Whole-silky Virgin's Bower. Shrub cl.

35 C. Bonarie'nsis (Juss. herb. and D. C. syst. 1. p. 145.) flowers panicled, polygamous; leaves ternate, smoothish; leaflets ovate-lanceolate, quite entire; peduncles shorter than the leaves, and are as well as the branches pubescent. ♄. ◡. F. Native of Buenos Ayres. Flowers white. Ovaries covered with long silky hairs.

Buenos-Ayrean Virgin's Bower. Shrub cl.

36 C. glycinoi'des (D. C. syst. 1. p. 145.) flowers panicled, dioecious; leaves ternate, smooth; leaflets ovate-lanceolate, acuminated, quite entire, 3-nerved at the base; peduncles one, half shorter than the leaves; branches smooth. ♄. ◡. G. Native of New Holland, about Port Jackson. Flowers small, and probably white. Resembles *Glycine trifoliàta*.

Glycine-like Virgin's Bower. Fl.? Clt. 1826. Shrub cl.

37 C. hexase'pala (D. C. syst. 1. p. 146.) flowers panicled, dioecious, of 6-sepals; leaves ternate; leaflets ovate, cordate, broadly crenated, netted with veins, smooth, coriaceous. ♄. ◡. F. Native of New Zealand. C. Forstèri, Gmel. syst. 873. Forst. icon. ined. in Banks, lib. t. 170. C. hexapétala, Lin. fil. suppl. 271. Bracteas oblong-linear. Flowers spreading, of a yellowish white colour.

Six-sepalled Virgin's Bower. Shrub cl.

38 C. coria'cea (D. C. syst. 1. p. 146.) flowers panicled, dioecious; leaves ternate; leaflets cordate, grossly and crenately cut, smooth, coriaceous; anthers ovate-oblong. ♄. ◡. G. Native of New Holland, about Port Jackson. Very like *C. hexasépala*, but differing in the flowers being of 4 sepals, not 6. Flowers spreading, pale purple?

Var. α, obtùsa (D. C. l. c.) leaflets cordate, obtuse. Plant male.

Var. β, acùta (D. C. l. c.) leaflets ovate, acuminate. Plant female.

Coriaceous-leaved Virgin's Bower. Fl.? Clt. 1821. Sh. cl.

39 C. stenose'pala (D. C. syst. 1. p. 147.) flowers panicled, dioecious; leaves ternate; leaflets cordate, acuminate, 3-nerved, entire or somewhat toothed; anthers ovate-oblong. ♄. ◡. G. Native of New Holland, about Port Jackson. *C.* stenopétala, R. Br. ined. Bracteas oblong, quite entire, acute at both ends. Sepals 4, oblong-linear. Flowers white, a little larger than those of *C. vitálba*.

The *narrow-sepalled* Virgin's Bower. Shrub cl.

40 C. microphy'lla (D. C. syst. 1. p. 147.) flowers panicled, dioecious; leaves ternate; leaflets oblong, usually 1-nerved, quite entire, smooth, coriaceous. ♄. ◡. G. Native of New Holland, in the Barren islands. Like *C. stenosépala*, but with the pericarps smooth, not pubescent. Flowers white.

Small-leaved Virgin's Bower. Shrub cl.

41 C. arista'ta (R. Br. prod. nov. holl. vol. 2. ined. D. C. syst. 1. p. 147.) flowers panicled, dioecious; leaves ternate; leaflets ovate, somewhat cordate, acute, grossly-toothed, 3-nerved; anthers awned at the apex. ♄. ◡. G. Native of New Holland. Ker. bot. reg. t. 238. Resembles *C. stenosépala*. Flowers of 4 sepals, of a greenish-yellow colour.

Awned anthered Virgin's Bower. Fl. May to Aug. Clt. 1812. Sh. cl.

42 C. indivìsa (Willd. spec. 2 p. 1291.) flowers panicled; leaves ternate; leaflets ovate, quite entire, mucronate, coriaceous, smooth. ♄. ◡. F. Native of New Zealand. C. integrifòlia, Forst. prod. 42. No. 231, but not of Lin. C. paniculàta, Gmel. syst. 873. Panicles axillary. Flowers probably white.

Undivided-leafletted Virgin's Bower. Shrub. cl.

43 C. hedysarifòlia (D. C. syst. 1. p. 148.) flowers panicled: leaves ternate; leaflets ovate-lanceolate acuminated, nearly entire, smooth, 5-nerved at the base. ♄. ◡. S. Native of the East Indies, on rocks about Daogown. Ker. bot. reg. t. 599. Flowers white. Ovaries very villous, ending in a short bearded tail.

Hedysarum-leaved Virgin's Bower. Fl. Oct. Clt. 1819. Sh. cl.

44 C. acumina'ta (D. C. syst. 1. p. 148.) flowers somewhat panicled; leaves ternate; leaflets ovate-lanceolate, much acuminated, rather serrated at the middle, smooth, 3 or 5-nerved. ♄. ◡. F. Native of Nipaul at Narain-Hetty. Peduncles trichotomous, 3-flowered, hardly longer than the leaves. Flowers campanulate, hairy. Ovaries numerous, ending in a feathery tail.

Acuminated-leaved Virgin's Bower. Fl. Dec. Shrub cl.

45 C. apiifòlia (D. C. syst. 1. p. 149.) flowers panicled, with six styles; leaves ternate; leaflets ovate, obtuse, repand-toothed. ♄. ◡. H. Native of Japan. Flowers unknown. Pericarps 5 or 7, stellately spreading.

Parsley-leaved Virgin's Bower. Shrub cl.

46 C. trifolia'ta (Thunb. in Lin. soc. trans. 2. p. 337.) flowers panicled; leaves ternately decompound, smooth; leaflets ovate, obtuse, repand-toothed. ♄. ◡. H. Native of Japan. Stems purple.

Trifoliate Virgin's Bower. Shrub cl.

47 C. biterna'ta (D. C. syst. 1. p. 149.) flowers panicled, hermaphrodite, with six styles; leaves biternate; leaflets somewhat cordate, acute. ♄. ◡. F. Native of Timor, Japan, and Cochinchina C. Virgínica, Thunb. fl. jap. 240, but not of Lin. Flowers white.

Biternate-leaved Virgin's Bower. Shrub cl.

48 C. triterna'ta (D. C. syst. 1. p. 150.) flowers? leaves bi or triternate, smoothish; leaflets oval-cuneated, 3-nerved, acutely-trifid. ♄. ◡. H. Native of? Atragène triternàta, Desf. hort. par. Stem round; branches striped with 6 furrows, and velvety when young.

Triternate-leaved Virgin's Bower. Fl.? Clt.? Shrub cl.

§ 3. *Peduncles trifid, 3-flowered* (f. 4.), *or in threes, 1-flowered. Leaves ternate* (f. 4.), *very rarely pinnate.*

49 C. Domínica (Lam. dict. 2. p. 45.) peduncles trifid, 3-flowered, longer than the leaves; leaves ternate; leaflets ovate, somewhat cordate, acute, pubescent underneath, a little toothed. ♄. ◡. S. Native of St. Domingo, Martinico, Dominica, and Cuba. Atragène polygama. Jacq. amer. ed. pict. 2. t. 261. f. 244. Flowers small, white, scentless, dioecious. Sepals spreading, clothed with rusty down on the outside.

Dominica Virgin's Bower. Shrub cl.

50 C. brachia'ta (Ker. in bot. reg. t. 97.) peduncles in threes, 1-flowered, trifid or panicled, longer than the leaves; leaves ternate or pinnate; leaflets ovate, grossly-toothed; flower-

bud globose. ♄. ◡. G. Native of the Cape of Good Hope. Flowers of a yellowish-green colour; filaments of stamens hispid, especially at their base.

Armed Virgin's Bower. Fl. Oct. Dec. Cult. 1804. Shrub cl.

51 C. GRANDIFLÒRA (D. C. syst. 1. p. 151.) peduncles 1-3-flowered, shorter than the leaves; leaves pinnate, smooth; leaflets ovate-cordate, acuminated, netted with nerves on the under surface, coarsely serrated. ♄. ◡. S. Native of Sierra Leone on the mountains. C. chlorántha Lindl. bot. reg. 1234. Flowers campanulate, the largest of all the genus, of a greenish-yellow colour. Leaflets 5.

Great-flowered Virgin's Bower. Fl. Feb. May. Clt. 1823. Sh. cl.

52 C. LECHENAULTIA'NA (D. C. syst. 1. p. 151.) peduncles trifid, 3-flowered, shorter than the leaves; leaves ternate, silky; leaflets ovate-lanceolate, 5-nerved, serrated. ♄. ◡. S. Native of Java. Sepals oblong, acute, velvety.

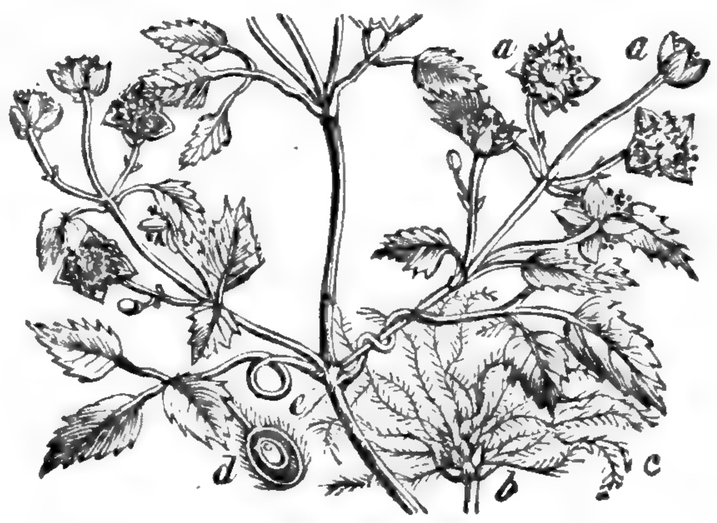
Lechenault's Virgin's Bower. Shrub cl.

53 NORONHIA'NA (D. C. syst. 1. p. 151.) peduncles 1-3-flowered, shorter than the leaves; leaves ternate, hairy; leaflets ovate-lanceolate, 3-nerved, serrated. ♄. ◡. S. Native of Java. Trígula trifoliàta, Noronha icon. ined. in Juss. lib. Flowers yellowish, with villous anthers and white styles.

Noronha's Virgin's Bower. Shrub cl.

54 C. MAURITIA'NA (Lam. dict. 2. p. 42.) peduncles trifid; leaves ternate, smooth; leaflets ovate, acuminated, coarsely-serrated. ♄. ◡. S. Native of the Mauritius and Madagascar. Deless. icon. sel. 1. t. 2. C. triflòra, Vahl. symb. 3. p. 74. C. Sonnerátii, Pers. ench. 2. p. 99. Flowers hermaphrodite. The recent herb is very acrid, and is used in Madagascar in place of Cantharides, hence Commerson has named it in his herbarium *C. furiàlis* and *C. urentissima*. (f. 3.)

FIG. 3.



Mauritian Virgin's Bower. Shrub cl.

55 C. SUBTRÍLOBA (N.E. herb. Lamb.) stems furrowed, young ones villous as well as the petioles and peduncles; peduncles trifid, 3-flowered; leaves ternate; leaflets 5-nerved, broad ovate, 3-lobed acute, lateral lobes small; carpels with long bearded tails. ♄. ◡. G. Native of Mexico. Flowers white.

The *subtrilobed*-leaved Virgin's Bower. Shrub cl.

56 C. HAVANE'NSIS (H. B. and Kunth nov. gen. et spec. amer. 5. p. 38.) peduncles 1-3-flowered; leaves ternate, silky-pubescent underneath; leaflets ovate-lanceolate, grossly-serrated. ♄. ◡. S. Native of Cuba, about Havanna. Pericarps pubescent.

Havanna Virgin's Bower. Shrub cl.

57 C. TRÍLOBA (St. Hil. fl. bras. 1. p. 3.) leaves trifoliate, smooth; leaflets stalked, 3-lobed, pointed; peduncles trifid, each furnished with two bracteas. ♄. ◡. S. Native of Brazil, in the province of Cis Platine. Flowers greenish-white.

Var. β, Guaranitica (St. Hil. l. c.) leaflets narrower, usually 2-lobed, much shorter than the peduncles; pedicels pubescent; flowers sometimes panicled.

Three-lobed leaved Virgin's Bower. Fl. Nov. Dec. Shrub cl.

58 C. JAVA'NA (D. C. syst. 1. p. 152.) pedicels 1-3-flowered; leaves ternate or biternate, pubescent; leaflets ovate-lanceolate, acuminated, entire or trifid, a little toothed. ♄. ◡. S. Native of Java. Flowers small, probably white. Sepals oblong, spreading, with velvety margins, a little longer than the stamens.

Java Virgin's Bower. Shrub cl.

59 C. DAHU'RICA (Pers. ench. 2. p. 99.) peduncles in threes, one-flowered; leaves ternate, smooth; leaflets ovate, quite entire, mucronate, oblique at the base; flowers hermaphrodite, nodding. ♄. ◡. H. Native of Dahuria. Flowers of an obscure purple colour, like those of *C. viticélla*. Ovaries villous.

Dahurian Virgin's Bower. Fl. Sept. Cult. 1820. Shrub cl.

60 C. PLUKENE'TII (D.C. syst. 1. p. 153.) peduncles 1-flowered; leaves ternate, smooth; leaflets elliptical or obovate, obtuse, quite entire, mucronate; flowers dioecious, erect. ♄. ◡. H. Native of America?—Pluk. alm. 109. Flowers purplish, fragrant.

Plukenet's Virgin's Bower. Shrub cl.

§ 4. *Peduncles solitary, 1-flowered* (f. 4.). *Leaves pinnate* (f. 4.), *rarely ternate.*

61 C. ANGUSTIFÒLIA (Jacq. enum. 310. coll. 1. p. 137. icon. rar. 1. t. 104.) peduncles 1-flowered; sepals 6 or 8, very blunt; leaves pinnate; leaflets lanceolate-linear, acuminated, entire, or 3-lobed; stems erect. ♃. H. Native of Siberia, Dahuria, and on the northern shore of the Adriatic Sea. Wats. dend. brit. t. 112. C. lasiántha, Fish. hort. gorenk. ex. litt. C. hexapétala, Pall. itin. 3 app. No. 96. t. 9. f. 2. ed. Gall. 8. p. 329. t. 74. f. 2. but not of Lin. Terminal leaflet always 3-lobed. Flowers white.

Narrow-leaved Virg.'s Bower. Fl. My. to Sep. Clt. 1787. P. 4 ft.

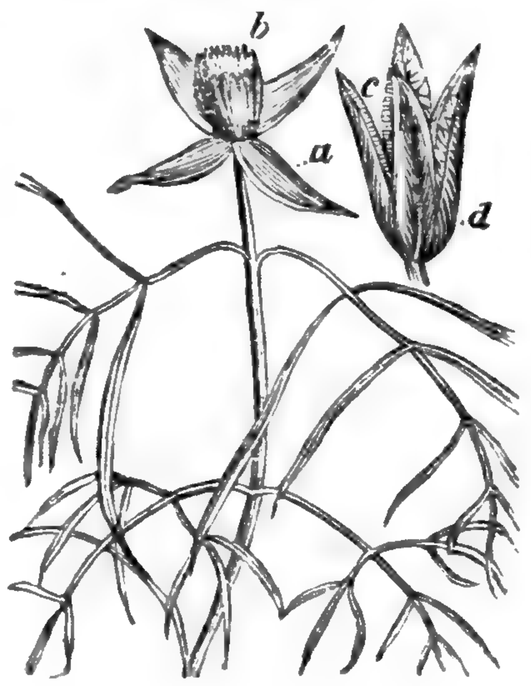
62 C. SCABIOSÆFÒLIA (D. C. syst. 1. p. 154.) peduncles 1-flowered; sepals 4, oval-oblong; leaves pinnate; leaflets 3-parted, cut, pubescent, with wedge-shaped lobes; stem erect, velvety. ♃. S. Native of India? The whole plant is clothed with velvety pubescence. Leaflets 7. Flowers white? filaments hispid at the base.

Scabious-leaved Virgin's Bower. Pl. 3 feet.

63. C. VILLÒSA (D. C. syst. 1. p. 154.) peduncles 1-flowered; sepals 4, oval-oblong; leaves villous, pinnate; leaflets sessile, oval, grossly-toothed at the apex, terminal one trifid; stem erect, villous. ♃. S. Native of India? Leaflets 7. Resembling *C. scabiosæfòlia.*

Villous Virgin's Bower. Pl. 3 feet?

FIG. 4.



64 C. LINEARÍLOBA (D. C. syst. 1. p. 155.) peduncles 1-flowered; sepals very acute; leaves smooth, pinnate; leaflets entire or 3-parted, with linear lobes. ♃. H. Native of Lower Carolina. Deless. icon. sel. 1. t. 3. Stem striped, purplish. Leaflets 7 or 9. Flowers pale purple; sepals downy on the margins, almost twice as long as the stamens (f. 4.)

Linear-lobed leaved Virgin's Bower. Fl. May, July. Cult. 1823. Pl. 3 feet.

65 C. WALTE'RI (Pursh. fl. amer. sept. 2. p. 384.) peduncles 1-flowered; sepals elliptical; leaves pinnate; leaflets divaricating linear-lanceolate acute, quite entire, glaucous underneath. ♃. H. Native of Carolina. Leaflets 7. Flowers white.

Walter's Virgin's Bower. Pl. 2 feet.

66 C. DIVERSIFÒLIA (D. C. syst. 1. p. 155.) peduncles 1-flowered; sepals very acute, spreading; leaves smooth, sometimes entire, sometimes 3-lobed or ternate; leaflets lanceolate, acute, lateral one sessile, terminal one stalked. ♄. ◡. H. Native of? Deless. icon. sel. 1. t. 4. Flower large, erect, purple. Anthers and filaments villous.

Various-leaved Virgin's Bower. Fl. Sept. Oct. Clt.? Sh. cl.

67 C. campe'stris (St. Hil. fl. bras. 1. p. 4.) stem 4-sided; peduncles axillary, solitary, terminal ones in threes; leaves ternate or pinnate, pubescent; leaflets ovate-lanceolate, acute; sepals spreading, villous. ♄. ◡. S. Native of Brasil, in the province of St. Paul, at the mouth of the river Yapa. Flowers greenish-yellow. Leaflets 3 to 7.

Field Virgin's Bower. Fl. July. Shrub cl.

68 C. Viórna (Lin. spec. 765.) peduncles 1-flowered; sepals connivent, thick, acuminated, reflexed at the apex; leaves smooth, pinnate; leaflets entire, 3-lobed, or ternate, ovate, acute, floral ones entire. ♄. ◡. H. Native of North America, in hedges and copses, from Virginia to Carolina. Jacq. fil. ecl. 1. p. 50. t. 32—Dill. elth. 144. t. 118. f. 144. Leaflets 5 or 7. Flowers purple, large, drooping, yellow inside. Herb very acrid.

American Traveller's Joy. Fl. June, Aug. Clt. 1730. Sh. cl.

69 C. Dougla'sii (Hook fl. bor. amer. 1. t. 1.) stem erect simple 1-flowered; flower drooping; leaves pilose, pinnate; leaflets twice pinnatified; lobes linear, bluntish. ♃. H. Native of North America on the Rocky Mountains near the sources of the Columbia river. Flowers purple about the size of those *C. viórna*. Leaves almost as fine as those of *Pæònia tenuifòlia*.

Douglas's Virgin's Bower. Fl. June, July. Clt.? Pl. 1½ ft.

70 C. cyli'ndrica (Sims. in bot. mag. t. 1160.) peduncles 1-flowered; sepals thin, acuminated, reflexed at the apex, with wavy margins; leaves slender, pinnate; leaflets stalked, ovate, or oblong; middle one sometimes trifid; floral ones entire. ♃. H. Native of Virginia and Carolina. C. críspa, Lam. dict. 2. p. 44. C. Viórna, Andr. bot. rep. t. 71. not of Lin. C. divaricàta Jacq. fil. ecl. t. 33. Leaflets 5—7 entire. Flowers large, of a pale purplish blue, drooping.

Cylindrical-flowered Virgin's Bower. Fl. Ju. Aug. Clt. 1802. Pl. 1 to 3 feet.

71 C. Si'msii (Sweet, hort. brit. p. 1.) peduncles 1-flowered; leaves pinnate; leaflets cordate, acuminated, entire, ciliated, reticulated; sepals 4, coriaceous, connivent, lanceolate, reflexed at the apex, curled. ♄. ◡. H. Native of South Carolina and Georgia. C. cordata Sims, bot. mag. 1816. but not of others. Flowers lilac. An intermediate species between *C. crispa* and *C. viórna*.

Sims's Virgin's Bower. Fl. Ju. Aug. Clt. 1812. Sh. cl.

72 C. reticula'ta (Walt. fl. carol. 156.) peduncles 1-flowered; sepals connivent; leaves coriaceous, netted with nerves, smooth, pinnate; leaflets stalked, 3-lobed or entire, ovate. ♄. ◡. H. Native of Georgia and Carolina. Wats. dend. brit. t. 72. C. ròsea, Abbot insect. amer. icon. t. 101. Stem purplish. Flowers resembling *C. viórna*, of a pale purplish red.

Netted-leaved Virgin's Bower. Fl. Jun. July. Clt. 1812. Sh. cl.

73 C. Japónica (Thunb. fl. jap. 240.) peduncles 1-flowered; sepals connivent; leaves villous, ternate; leaflets elliptical, acuminated, serrated at the apex. ♄. ◡. H. Native of Japan. Stem purplish. Leaves ternately decompound. Peduncles length of leaves. Flowers purple.

Japan Virgin's Bower. Shrub cl.

74 C. comòsa (D. C. syst. 1. p. 157.) peduncles 1-flowered; leaves ternate, velvety; leaflets oval-oblong, acuminated, 3-nerved, entire. ♄. ◡. S. Native of the East Indies. Flowers unknown. Pericarps ovate, somewhat compressed.

Tufted Virgin's Bower. Shrub cl.

75 C. tri'loba (Roth. nov. pl. spec. 251.) peduncles 1-flowered, somewhat corymbose; stem and petioles downy; leaves pubescent, lower ones ovate, acuminated, middle ones 3-lobed, upper ones ternate; sepals oblong-lanceolate, mucronate, silky on the outside. ♄. ◡. S. Native of the East Indies.

Three-lobed leaved Virgin's Bower. Shrub. cl.

76 C. clitorioi'des (D. C. syst. 1. p. 158.) peduncles 1-flowered, axillary twisted; leaves smooth, pinnate; leaflets oblong, acute, quite entire. ♄. ◡. G. Native of New Holland about Port Jackson. Resembling a species of *Clitòria* or *Kennèdia*. Leaflets 3 or 5. Flowers whitish.

Clitoria-like Virgin's Bower. Fl. July. Clt. 1824. Sh. cl.

§ 5. *Peduncles usually solitary, 1-flowered. Leaves undivided. Stems herbaceous, erect.*

77 C. integrifòlia (Lin. spec. 767.) peduncles 1-flowered; flower nodding; leaves entire, ovate-lanceolate, smooth. ♃. H. Native of Hungary, Carniola, Tartary, Siberia, Austria, and the Pyrenees. Jacq. fl. aust. t. 363. Tratt. tab. 4. t. 179. Curt. bot. mag. t. 65.—Clus. hist. 1. p. 123. f. 2. C. nùtans, Crantz. C. inclinàta, Scop. Peduncles terminal, very rarely rising from the fork of the stem. Sepals blue, coriaceous; younger ones with villous edges, adult ones with wavy edges. The two upper leaves are concave and connivent before flowering; hence they inclose the flower as if it were in a bladder.

Var. β, angustifòlia (Fisch. in litt. D. C. prod. 1. p. 8.) leaves very narrow, acuminated, 3 or 5-nerved; sepals rather unequal, somewhat longer than the stamens.

Var. γ, elongàta (D. C. prod. 1. p. 8.) flowers almost erect; leaves acuminated, rather hairy. C. elongàta, Tratt. tab. 4. t. 178. Native of Siberia.

Entire-leaved Virgin's Bower. Fl. Jun. Aug. Clt. 1596. Pl. 2 ft.

78 C. ochroleu'ca (Ait. hort. kew. ed. 1. vol. ii. p. 260.) peduncles 1-flowered; flower erectish; leaves entire, ovate: younger ones silky. ♃. H. Native of North America, on the banks of rivers, in Carolina, Pennsylvania, and Virginia. Sims, bot. mag. t. 1175. Lodd. bot. cab. t. 661. Tratt. arch. 2. t. 64. C. sericea, Mich. fl. bor. amer. 1. p. 319. Resembles *C. integrifòlia* but differs in the leaves being oval or ovate, blunt, and in the flower being a little smaller, erect, or a little inclined but not nodding, cream-coloured, and yellow on the inside.

Cream-coloured-flowered Virgin's Bower. Fl. July, Aug. Clt. 1767. Pl. 1 to 2 feet.

79 C. ova'ta (Pursh fl. amer. Sept. 2. p. 736.) peduncles 1-flowered; flower erect; leaves ovate, acute, smooth, netted with veins, lower ones rather cordate. ♃. H. Native of South Carolina.—Pluk. mant. t. 379. f. 4? Resembles *C. integrifòlia*. Pericarps with long feathery tails. Flowers blue.

Ovate-leaved Virgin's Bower. Pl. 1 to 2 feet.

80 C. gentianoi'des (D. C. syst. 1. p. 159.) peduncles 1-flowered; flower erect, dioecious; leaves ovate, entire or toothed, smooth, 3-nerved. ♃. G. Native of New Holland, in Mary Island, and Van Dieman's Land. Deless. icon. sel. 1. t. 5. Sepals 4, oblong, thin, terminating in a small callosity.

Gentian-like Virgin's Bower. Pl. 1 feet.

81 C. smilaci'na (Blum. ex Spreng. syst. app. p. 221.) peduncles 1-flowered; leaves ovate, coriaceous, smooth, quite entire, 5-nerved. ♃. S. Native of Java. Flowers?

Smilax-like Virgin's Bower. Pl. 2 feet?

§ 6. *Peduncles 3 or many-flowered, panicled, axillary. Leaves undivided. Climbing shrubs.*

82 C. glandulòsa (Blum. ex Spreng. syst. app. p. 221.) leaves ovate, with glandular teeth, smooth, 5-nerved; peduncles panicled, trifid; flowers monoecious. ♄. ◡. S. Native of Java. Flowers purplish?

Glandular-toothed Virgin's Bower. Shrub. cl.

83 C. subpelta'ta (Wall. pl. asiat. rar. No. I. p. 19. t. 20.) leaves ovate-cordate, smooth, acute, entire, or slightly crenulated, and slightly peltate at the base; petioles twisted; panicles axillary loose, equal in length to the leaves; sepals 4 ovate obtuse, clothed with dense rusty tomentum on the outside. ♄. ◡. S.

Native of Ava, on Mount Taong Dong. Sepals smooth, and purple inside.

Subpeltate-leaved Virgin's Bower. Fl. Nov. Shrub cl.

84 C. smilacifòlia (Wall. Asiat. Res. 13. p. 402.) leaves ovate-cordate 5-nerved, smooth, entire, panicles axillary, few-flowered, rather shorter than the leaves; sepals 4 linear-oblong, clothed with dense rusty tomentum on the outside, spreading. ♄. ◡. S. Native of Nipaul. Flowers clothed with rusty tomentum on the outside, but smooth and purple on the inside. This plant comes very near to *C. subpeltàta*, but differs from it in the leaves being cordate at the base, never slightly peltate.

Smilax-leaved Virgin's Bower. Fl.? Clt. 1823. Shrub cl.

Sect. II.—Vitice'lla, (from *viticella*, a small vine; plants climbing like the vine.) D. C. syst. 1. p. 160. prod. 1. p. 8. Involucre wanting. Tail of pericarp short, beardless. Leaves ternate or decompound. Stems climbing.

85 C. flórida (Thunb. fl. jap. 240.) peduncles 1-flowered, longer than the leaves; leaves ternately decompound; leaflets ovate, acute, quite entire; sepals oval-lanceolate, much pointed. ♄. ◡. H. Native of Japan. Sims, bot. mag. t. 834. Andr. bot. rep. t. 402. Jacq. hort. schœn. 3. p. 57. t. 357. Atragène índica, Desf. tab. par. ed. 1. p. 123. Leaves ternate or triternate. Flowers large, spreading, pale-white. Sepals 6 or 8, oval, marked towards the margins with feathery veins. Stamens purplish.

Var. β, flòre-plèno; flowers double. This is much more common in our gardens than the single-flowered.

Florid Virgin's Bower. Fl. April, Sept. Clt. 1776. Sh. cl.

86 C. vitice'lla (Lin. spec. 762.) peduncles 1-flowered, longer than the leaves; leaves entire or ternately decompound; lobes or leaflets entire; sepals obovate, spreading. ♄. ◡. H. Native of the South of Europe, in hedges and among bushes, particularly in Spain, Portugal, Carniola, and Bithynia, &c. Fl. græc. t. 516. Curt. bot. mag. t. 565. Viticélla deltoìdea, Mœnch. meth. 297. Flowers large, blue, purple, or rose-coloured, drooping.

Var. β, múltiplex; flowers double, purple, or flesh-coloured. C. pulchélla, Pers. ench. 2. p. 99.—Chabr. sciagr. p. 117, with a figure.—Weinm. phyt. t. 398. f. d.

Var. γ, tenuifòlia (D. C. syst. 1. p. 161.) leaflets oblong-lanceolate. C. tenuifòlia Lusitánica, &c. Tourn. inst. 299.

Var. δ, baccàta (D. C. syst. l. c.) fruit somewhat baccate. C. baccàta, Pers. ench. 2. p. 99.

Vine-bower. Fl. June, Sept. Clt. 1569. Shrub cl.

87 C. campaniflòra (Brot. fl. lus. 3. p. 359.) peduncles 1-flowered, somewhat longer than the leaves; leaves biternately decompound; leaflets entire or 3-lobed; sepals half spreading, dilated at the apex, wavy. ♄. ◡. H. Native of Portugal, in hedges, especially on the road from Coimbra to Oporto. Lodd. bot. cab. t. 987. Leaflets about 24. Flowers large, half open, of a purplish-white colour. An intermediate species between *C. Viticélla* and *C. crispa*.

Bell-flowered Virgin's Bower. Fl. Ju. Jul. Clt. 1810. Sh. cl.

88 C. cri'spa (Lin. spec. 765.) peduncles 1-flowered, shorter than the leaves; leaves entire, 3-lobed or ternate, very acute; sepals connivent at the base, but reflexed and spreading at the apex. ♄. ◡. H. Native of Virginia and Carolina, in hedges and among bushes on the banks of rivers. Sims. bot. mag. t. 1892. Leaflets entire or 3-lobed. Flower erect, large, purple. Pericarp ending in a short awl-shaped tail. C. flore críspo, Dill. elth. 1. t. 73. f. 84.

Curled-flowered Virgin's Bower. Fl. Jul. Sept. Clt. 1726. Sh. cl.

89 C. parviflòra (D. C. mem. soc. hort. gen. 1. p. 433.) peduncles 1-flowered; sepals elliptical, somewhat dilated at the apex; leaves pinnate, with tendril-like petioles; leaflets stalked, 3-parted or entire; lobes oblong, mucronate, entire. ♄. ◡. H. Native of? Carpels smooth, tailless. Flowers small, white.

Small-flowered Virgin's Bower. Fl. July. Shrub cl.

Sect. III.—Cheirópsis, (from χειρ, *cheir*, the hand; and οψις, *opsis*, resemblance, in allusion to the form of the bracteas.) D. C. syst. 1. p. 162. prod. 1. p. 9. Involucre in the form of a calyx from two joined bracteas situated at the top of the peduncle just under the flower. Tails of pericarps bearded. Climbing or rambling shrubs, with simple or ternate leaves.

90 C. cirrhòsa (Lin. spec. 766.) peduncles 1-flowered, with an involucre; leaves ovate, somewhat cordate, toothed, in fascicles. ♄. ◡. H. Native of the South of Europe and North of Africa, in hedges and among bushes, particularly in Spain, Majorca, Sicily, Calabria, Algiers, and the Islands of the Archipelago. Smith fl. græc. t. 517. C. cæspitòsa, Scop. carn. ed. 2. No. 671? Atragène cirrhòsa, Pers. euch. 2. p. 98. An elegant evergreen shrub. Flowers pale and downy on the outside, but smooth and purple on the inside, and marked with darker spots.

Tendrilled Virgin's Bower. Fl. Mar. Apr. Clt. 1596. Sh. cl.

91 C. pedicella'ta (Sweet, hort. brit. p. 1.) peduncles 1-flowered, stalked within the involucre; leaves ovate, somewhat cordate, toothed, in fascicles. ♄. ◡. H. Native of Majorca. C. cirrhòsa, Sims. bot. mag. t. 1070. C. Baleárica, Pers. ench. 2, p. 99, but not of Rich. C. cirrhòsa var. β, pedicellàta, D. C. syst. 1. p. 163. An elegant evergreen shrub. Resembles *C. cirrhòsa*. but differing in the flower being smaller and seated on a pedicel within the involucre, not sessile. Flowers white, hardly spotted on the inside.

Pedicelled-flowered Virgin's Bower. Fl. Oct. Feb. Clt. 1596. Shrub cl.

92 C. polymórpha (Viv. app. fl. cors. in Schlecht. Linnæa. 1829. p. 502.) peduncles axillary, naked, 1-flowered; flowers pendulous; involucrum urceolate-campanulate, almost entire; sepals ovate-oblong, clothed with silky wool on the outside. ♄. ◡. H. Native of Corsica. Resembles *C. cirrhòsa*.

Var. a, vèra; leaves somewhat cordate, entire, 3-lobed or 3-parted; lobes and segments deeply serrate-crenated. Native of Corsica.

Var. β, semitríloba (Lag. cat. hort. madr. p. 17.) leaves 3-parted and ternate; middle leaflet stalked, lateral ones sessile oblique, all unequally serrate-crenate. Native of the south of Spain and of Corsica. Branches angular, dark-purple.

Var. γ, lanceolàta; leaves all ternate; leaflets lanceolate, middle one stalked, lateral ones sessile. Native of Corsica.

Polymorphous Virgin's Bower. Fl. April? Shrub cl.

93 C. Balea'rica (Rich. in journ. phys. Feb. 1779, 127, with a figure, but not of Pers.) peduncles 1-flowered, with an involucre under the flower; leaves ternate; leaflets stalked, 3-lobed, deeply toothed. ♄. ◡. H. Native of Minorca. C. calycìna, Ait. hort. kew. ed. 1. vol. 2. p. 259. Sims. bot. mag. t. 959. Atragène Baleárica, Pers. ench. 2. p. 98. A very elegant evergreen shrub. Involucre two-lobed, blunt, bell-shaped, closely girding the flower. Flowers pale, pubescent on the outside, and marked on the inside with oblong red spots.

Minorca Virgin's Bower. Fl. Feb. Mar. Clt. 1783. Sh. cl.

94 C. monta'na (D. Don, prod. fl. nep. p. 192.) peduncles many, 1-flowered, with an involucre under each flower; leaves ternate or trifid, smooth; leaflets oblong, acuminated, rather toothed at the base, lateral ones almost sessile, 1-nerved, terminal one 3-nerved. ♄. ◡. H. Native of Nipaul. C. montàna var. Hamilt. MSS. C. Nepaulénsis, D. C. syst. 1. p. 164. Flower a little distant from the involucre, clothed with cinereous down. Pericarps many, compressed, ovate-acuminated.

Mountain Virgin's Bower. Fl. April. Shrub cl.

95 C. anemoniflòra (D. Don, prod. fl. nep. p. 192.) peduncles many, 1-flowered, longer than the leaves, without an involucre; leaves ternate; leaflets cuneated, elliptical, mucronate,

deeply-toothed, villous; flowers spreading, with oval membranaceous sepals. ♄. ◡. H. Native of Nipaul, in the vicinity of Chitlong. C. montàna Hamilt. MSS. D. C. syst. 1. p. 164. Flowers white, almost like those of *Anemòne sylvéstris*. This species is perhaps sufficiently distinct to constitute a separate section, from the want of the involucrum.

Anemone-flowered Virgin's Bower. Fl. April. Shrub cl.

†*Species not sufficiently known.*

96 C. Tournefórtii (D. C. syst. 1. p. 166.) C. orientàlis latifolia semine brevissimis pappis donato. Tourn. Cor. 20. ♄. ◡. H. Native of the Levant.

Tournefort's Virgin's Bower. Shrub cl.

97 C? polype'tala (Poir. suppl. 2. p. 296.) ♃. H. Native of Japan. Atragène polypétala, Thunb. fl. jap. 239. Stem erect, two feet high. Leaves triternate; leaflets ovate, acute, deeply toothed, villous. Pedicels filiform, 1-flowered, elongated. Petals beyond 20, bluntish, purple on the outside, clothed with white down within. This plant would appear to be an *Anemòne*, from the description of the flower.

Many-petalled Virgin's Bower. Pl. 2 feet.

98 C. canalicula'ta (Lag. cat. hort. madr. 17). ♄. ◡. H. Native of Spain, in the provinces of Murcia and Granada, in rocky and stony places. A climbing subshrub, with linear decompound leaves and axillary three-flowered peduncles. (Lag.)

Channelled-leaved Virgin's Bower. Shrub cl.

99 C. Zanzibare'nsis (Loud. hort. brit. p. 228); leaves pinnate, with twisted petioles; leaflets ovate, acuminated, membranaceous, entire or 3-lobed. ♄. ◡. S. Native of Zanquebar. Leaflets 5, with their margins and nerves, as well as petioles, rather hairy.

Zanquebar Virgin's Bower. Fl.? Clt. 1820. Shrub cl.

Cult. The species of this genus are mostly climbing shrubs of rapid growth, free flowerers, very ornamental, and some are highly odoriferous. The hardy kinds are well adapted for bowers or trellis-work, or for training up against a wall; and they will thrive well in any common garden soil. They are readily increased by laying down the young shoots in July or October, or by seeds, which in many species ripen in abundance. The greenhouse species are very desirable for a conservatory where many climbing plants are wanted. Any light soil, or a mixture of loam and peat, will suit them well, and young cuttings will strike root freely under hand glasses. The stove kinds require the same treatment as the greenhouse species. The herbaceous perennial species are increased by dividing the plants at the root early in spring.

II. ATRAGE'NE (from αθραγενη, a name originally given to Clématis Vitálba by Theophrastus.) Lin. gen. No. 615. Gært. fruct. 1. p. 356. t. 74. f. 8. Schkuhr. handb. t. 150. Clématis, Sect. IV. Atragène, D. C. syst. 1. p. 165. prod. 1. p. 9.

Lin. Syst. *Polyándria Polygýnia.* Involucre none. Sepals 4, somewhat induplicate in the bud. Petals numerous, shorter than the sepals. Cariopsides terminated by a bearded tail. Cotyledons approximate in the seed. Climbing shrubs with variously cut opposite leaves, possessing the same qualities as *Clématis.*

1 A. alpi'na (Lin. spec. 764.) peduncles 1-flowered, longer than the leaves; leaves biternate; leaflets ovate-lanceolate, acuminated, serrate; petals somewhat spatulate, blunt. ♄. ◡. H. Native of the mountains in many parts of Europe from the height of 2400 to 6000 feet, especially on a calcareous soil, in Austria, Carniola, Piedmont, South of Switzerland, Geneva, Dauphiny, and the Eastern Pyrenees. Jacq. aust. t. 241. Schkuhr. handb. t. 150; Sims. bot. mag. t. 530. A. Austrìaca, Scop. carn. ed. 2. No. 666. Andr. bot. rep. t. 180. Sims. bot. mag. t. 807. A. Clematìdes, Crantz. austr. 111. t. 5. Clématis alpìna, Mill. dict. No. 9. D. C. syst. 1. p. 165. Flowers blue, varying to white. Sepals oblong, acuminated. Petals 10 to 12, linear at the base, but dilated at the apex.

Alpine Atragene. Fl. May, July. Clt. 1792. Shrub cl.

2 A. Sibi'rica (Lin. spec. ed. 1. p. 343.) peduncles 1-flowered, almost equal in length with the leaves; leaves biternate; leaflets oblong-lanceolate, acuminated, serrated; petals emarginate at the apex. ♄. ◡. H. Native of Siberia, in woods, at the river Oby, and in the Ural mountains, and along that chain of Alps even to the Eastern Ocean. Sims. bot. mag. t. 887. A. alpìna, Gmel. sib. 4. p. 194. No. 33. Pall. fl. ross. 2. p. 69. t. 76. Resembles *A. alpìna*, but differs in the leaves being sometimes ternate, with narrower leaflets, and in the flowers being a little smaller, from white to yellowish, never blue, as well as in the petals being emarginate at the apex not obtuse.

Siberian Atragene. Fl. June, July. Clt. 1753. Shrub cl.

3 A. Ochote'nsis (Pall. ross. 2. p. 69.) peduncles 1-flowered; leaves biternate; leaflets oblong-lanceolate, acuminated, serrate; petals few; linear. ♄. ◡. H. Native of Siberia towards the Ochotskoi Sea, and of Kamtschatka between Ochotsk and Kamtsch. A. violàcea, Pall. in herb. Lamb. C. Ochoténsis, Poir. suppl. 2. p. 298. Resembles *A. Sibírica*. Flowers with 4 ovate-mucronate sepals, which are downy on their margins. Petals none, or sometimes with the outer stamens abortive, a little elongated and linear. Filaments velvety, a little shorter than the sepals.

Ochotskoi Atragene. Fl. May, July. Clt. 1818. Shrub cl. acuminated.

4 A. America'na (Sims. bot. mag. t. 887.) peduncles 1-flowered; leaves whorled, in fours, ternate; leaflets stalked, cordate, lanceolate, acuminated, entire, or somewhat lobed, or serrated; petals acute. ♄. ◡. H. Native of North America, in shady places, on the sides of rivulets, climbing and creeping among loose rocks, New York and Pennsylvania, near the foot of the Blue Mountains, and on the eastern declivity of the Rocky Mountains and at Cape Mendocina, on the North-west coast. Clématis verticillàris, D. C. syst. 1. p. 166. Resembles *A. alpìna*. Flowers large, purplish-blue.

Var. β, oblìqua (Dougl. mss.) leaflets bluntly serrated. ♄. ◡. H. Native on the eastern declivities of Rocky Mountains, in vallies, and at Cape Mendocina, on the western coast.

American Atragene. Fl. May, July. Clt. 1797. Shrub cl.

5 A. occident'alis (Horn. hort. hafn. 2. p. 520.) leaves opposite, ternate; leaflets nearly entire, shining; sepals ovate-lanceolate; flowers, somewhat bell-shaped. ♄. ◡. Native of? Clématis occidentàlis, D. C. prod. 1. p. 10.

Western Atragene. Fl.? Clt. 1818. Shrub cl.

Cult. The species are very shewy, and require the same treatment as that recommended for the hardy kinds of *Clématis.*

III. NARAVE'LIA (from *Naravæl*, its name in Ceylon. Herm. Zeyl. 26.) D. C. syst. 1. p. 167. prod. 1. p. 10.

Lin. syst. *Polyándria, Polygy'nia.* Petals from 6 to 12, longer than the calyx (f. 5. *a.*) Carpels seated on a thick hollow stipe, (f. 5. *b.*) terminated by a long feathery tail (f. 5. *c.*) A climbing shrub, with the habit of *Clématis*, but the leaves are only furnished with two opposite many-nerved leaflets.

1 N. Zeyla'nica (D. C. syst. 1. p. 167.) leaves opposite, stalked; leaflets two, ovate-acuminated, on very short stalks, 5-7 nerved, quite entire, or notched with one or two teeth on each side, velvety underneath, smooth above,

FIG. 5.

drawn out at the apex into a trifid twisted tendril; (f. 5. *d.*) panicle terminal, with trichotomous pedicels. ♄. ◡. S. Native of the East Indies. Sepals 4, caducous. Flowers yellow.

Var. a Hermánni (D. C. syst. 1. p. 167.) leaves velvety-tomentose on the under surface. Native of Ceylon, in groves. Atragène Zeylánica, Lin. Amœn. 1. p. 405. Clématis Zeylánica, Poir. suppl. 2. p. 296.

Var. β Roxbúrghii (D. C. syst. 1. p. 168.) leaves velvety-pubescent on the under surface. Atragène Zeylánica, Roxb. corom. 2. p. 47. t. 188. Native of Coromandel, near a place called Samulcoath, in hedges and groves, in humid places. (f. 5.)

Ceylon Narawæl. Fl. summer. Clt. 1796. Shrub cl.

Cult. This plant will thrive best in a mixture of loam and peat. Young cuttings planted thinly in a pot of sand will strike root, under a hand-glass in heat. (Sweet.)

Tribe II.

ANEMO'NEÆ (plants resembling Anemone). D. C. syst. 1. p. 167. prod. 1. p. 10. Calyx and corolla imbricate in the bud (f. 4. *a.*) Petals none, (f. 6. *b.* f. 7. *d.*) or flat. Carpels 1-seeded, (f. 6. *d.*) indehiscent, (f. 6. *c.*) generally terminated by a tail (f. 6. *f.*) or point (f. 6. *c.*) Seed pendulous (f. 6. *e.*) Stems herbaceous, never climbing. Leaves radical (f. 6.) or alternate (f. 7.)

IV. THAL'ICTRUM (said from *θαλλω, thallo,* to grow green; from the bright colour of the young sprouts). Lin. gen. No. 697. Gært. fruct. 1. p. 355. t. 74. Lam. ill. t. 497. D. C. syst. 1. p. 168. prod. 1. p. 11.

Lin. syst. *Polyándria Polygy'nia.* Involucre none. Calyx of 4 or 5 deciduous petal-like sepals. Petals none. Carpels 4 to 15, pointed not terminated by a tail, stalked or sessile, sometimes furrowed longitudinally. Roots perennial, with annual stems. Flowers corymbose, panicled, and somewhat racemose, green, white, and yellow. Herbs usually fetid, with yellowish bitter roots, tonic, resembling *rhubarb* (especially *T. flavum*) in its cathartic qualities. The English name of this genus, *Meadow-Rue*, is given to it on account of the species usually growing in meadows, and their leaves resembling those of *Rue*. It is also called *Feather-Columbine*, from the feathery appearance of the panicles of flowers, and the leaves resembling those of the *Columbine*.

Sect. I. Tripte'rium, (*τρεις, treis,* three, *πτερον, pteron,* a wing, in allusion to the three winged fruit). D. C. syst. 1. p. 169. prod. 1. p. 11. Fruit triquetrous, with winged angles, somewhat stipitate.

1 Th. aquilegifòlium (Lin. spec. 770.) stipulas ovate, twin, at the base of the ramifications of the petiole; panicle corymbose. ♄. H. Native of Europe, on wooded mountains, in Germany, France, Italy, Hungary, Siberia, &c. Sims. bot. mag. t. 1818. Jacq. aust. t. 318. Stem fistulous, purple, meally. Leaves tripinnate, with suborbicular, smooth, deeply toothed leaflets. Sepals white, fugacious. Stamens white, but usually purple. Pericarps smooth, pendulous, narrowed at the base, on long pedicels.

Var. β, atropurpùreum (Murr. syst. 513. Jacq. hort. vind. 3. t. 81.) stems and stamens dark purple. Native of Austria.

Var. γ, formòsum (D. C. prod. 1. p. 11.) stamens dark purple, dilated at the apex. Sims. bot. mag. t. 2025.

Var. δ, álbum; stems green, stamens white.

Columbine-leaved Meadow-Rue. Fl. May, July. Clt. 1731. Pl. 1 to 3 feet.

2 Th. chelidònn (D. C. prod. 1. p. 11.) stipulas wanting; axils of leaves gemmiferous; flowers loosely panicled; fruit stipitate, pendulous from the inflexed pedicel. ♄. H. Native of Nipaul. Flowers large, purplish. Pistils 8. Stamens 8 to 12.

Swallow-wort Meadow-Rue. Fl. May, Jul. Clt. 1823. Pl. 2 ft.

3 Th. contórtum (Lin. spec. 770.) stipulas wanting; flowers in loose corymbose racemes; fruit pendulous. ♄. H. Native of Siberia. Resembles *Th. aquilegifòlium*, but dwarfer. Flowers white. Leaves glaucous, with small simple or trifid obtuse leaflets. Stem 2-edged. Fruit twisted.

Twisted Meadow-Rue. Fl. Ju. Jul. Clt. 1796. Pl. 1 ft.

Sect. II. Physoca'rpum, (*φυσα, physa,* a bladder, *καρπος, karpos* a fruit). D. C. syst. 1. p. 171. prod. 1. p. 11. Fruit inflated, bladdery, stipitate. Flowers dioecious or polygamous. Leaves bi or triternate.

4 Th. clava'tum (D. C. syst. 1. p. 171.) flowers monoecious, or hermaphrodite; filaments club-shaped; anthers elliptical awnless; pericarps inflated, with a very short beak; leaves smooth, without stipulas. ♄. H. Native of North America, on Portage de La Loche, a height of land, composed of sand-hills, in lat. 57°, and separating the waters flowing to Hudson's Bay, from those falling into the Arctic Sea. Deless. icon. sel. 1. t. 6. Leaves biternate; leaflets roundish, membranous, glaucous underneath, crenate-lobed. Flowers white, erect. Pericarps 5-6, stellately spreading.

Clavate-filamented Meadow-Rue. Fl. June, July. Clt. 1820. Pl. 1 to 2 feet.

5 Th. podoca'rpum (H. B. et Kunth nov. gen. spec. amer. 5. p. 38.) flowers polygamous; filaments filiform; anthers long, with an awn at the apex; pericarps oval-oblong, smooth, with a long awn; leaves smooth without stipulas. ♃. G. Native of New Granada. Stem fistulous. Leaves 4-times pinnate, or 4-times ternate; leaflets stalked, ovate-orbicular, cordate at the base, smooth, glaucous underneath; somewhat lobed at the apex, with 3 or 4 teeth. Flowers loosely panicled.

Foot-fruited Meadow-Rue. Fl. July. Pl. 2 to 3 feet.

6 Th. longist'ylum (D. C. syst. 1. p. 171). Flowers polygamous; filaments filiform; anthers with a long awn; pericarps oval-oblong; style with a long awn; branches of petiole stipulled; segments of leaves hairy at the nerves. ♃. F. Native of South America. Deless. icon. sel. 1. t. 7. Leaves 3 or 4-times ternate; leaflets ovate-orbicular, cordate at the base, grossly 3-5-toothed at the apex, or lobed, scarcely glaucescent underneath. Flowers loosely panicled.

Long-styled Meadow-Rue. Pl. 4 or 5 feet.

7 Th. pelta'tum (D. C. prod. 1. p. 11.) flowers polygamous; pericarps sessile, with a long awn; leaflets of lower leaves peltate. ♃. F. Native of Mexico.

Peltate-leaved Meadow-Rue. Fl. June, July. Pl. 2 feet.

8 Th. Mexica'num (D. C. syst. 1. p. 187). ♃. F. Native of Mexico. Coztipatli II. Hern. Mexic. 236 icon. Roots thick, fascicled, fibrous, of an amethyst colour, with yellow fibres. Leaves biternate; leaflets stalked, ovate, toothletted. (Hern.)

Mexican Meadow-Rue. Pl. 2 feet.

9 Th. rutidoca'rpum (D. C. syst. 1. p. 172.) flowers polygamous; filaments filiform; pericarps ovate, somewhat compressed, marked with elevated branched rugosities; leaves without stipulas; leaflets hairy at the nerves. ♃. F. Native of South America.

Rugged-fruited Meadow-Rue. Pl. 2 feet.

Sect. III. Euthali'ctrum, (from *ευ, eu,* well or good, and *thalictrum;* genuine species). D. C. syst. 1. p. 172. prod. 1. p. 12. Fruit, ovate-oblong, striped, sessile. Leaves various, almost always free of stipulas.

§ 1. Heterog'ama. *Flowers dioecious or polygamous.*

10 Th. Cornu'ti (Lin. spec. 768.) flower dioecious or polygamous; filaments somewhat club-shaped; anthers elliptical, or nearly linear; leaflets roundish-abovate and oblong, 3-lobed,

glaucous beneath, with the nerves hardly prominent, rather revolute at the edges; carpels ovate oblong; stigma filiform with membranous margins. ♃. H. Native of North America, on banks of rivers, in woody districts, the whole breadth of the continent. Hook fl. bor. amer. 3. t. 2. Leaves bi or tripinnate. Flowers white, or in many pale-purple, panicled. Th. revolutum D. C. syst. 1. p. 173. Th. Canadensis, Cornuti Canad. 186. t. 187.

Var. α. revolùtum; anthers linear-oblong. Th. revolutum. D. C. syst. 1. p. 173. Var. β. subglàbrum.

Var. β, pubéscens (Ph. fl. amer. sept. 2. p. 388.) anthers elliptical; leaves velvety, pubescent beneath. Th. corynéllum. D. C. syst. 1. p. 172.

Cornuti's Meadow-Rue. Fl. Jul. Aug. Clt. 1806. Pl. 3 to 4 ft.

11 Th. dioi'cum (Lin. spec. 768.) flowers dioecious; filaments filiform; leaflets roundish, cordate, smooth, bluntly crenate-lobed, glaucous beneath; peduncles axillary, shorter than the leaves. ♃. H. Native of North America, in shady grassy places, on the banks of rivers from Canada to Virginia and elsewhere. Deless. icon. sel. 1. 6. 8. Th. lævigàtum, Mich. fl. bor. amer. 1. p. 322. Plant very smooth. Leaves 3-times trifid. Leaflets stalked, glaucous underneath. Panicle branched, somewhat corymbose at apex. Flowers white. Pericarps ovate, awnless.

Dioecious Meadow-Rue. Fl. May, Jul. Clt. 1759. Pl. 1 to 2 ft.

12 Th. Carolinia'num (Bosc. ined. but not of Walt. D. C. syst. 1. p. 174.) flowers dioecious; filaments filiform; leaflets oval, 3—5-toothed, smooth, glaucous underneath; peduncles axillary, longer than the leaves. ♃. H. Native of North America, from Pennsylvania to Carolina, on the banks of rivers and in swamps. Th. rugòsum, Pursh fl. amer. sept. 2. p. 388, but not of Ait. hort. kew. Flowers white, in divaricating panicles.

Var. β, subpubéscens (D. C. syst. 1. p. 174.) leaflets, a little hairy at the nerves on the under surface. Native of New Jersey.

Carolinian Meadow-Rue. Fl. June, Aug. Clt. 1818. Pl. 1 to 2 feet.

13 Th. purpura'scens (Lin. spec. 769.) flowers dioecious or monoecious; filaments filiform, colored; leaflets somewhat orbicular, grossly toothed, glaucous underneath; panicle contracted, almost leafless. ♃. H. Native of Pennsylvania and Virginia, on dry sunny hills.—Moris. oxon. 3. p. 324. Stems purple. Leaves triternate. Panicle of female flowers erect. Ovaries 7, 8. Styles long, acute. Stamens purple.

Var. β, monoícum (D. C. syst. 1. p. 174.) panicle few-flowered, female flowers at bottom, and male at top of panicle. Native of New England. Filaments red. Anthers long, yellow, acute.

Purplish Meadow-Rue. Fl. May, Ju. Clt. 1699. Pl. 1 to 2 ft.

14 Th. Java'nicum (Blum. bijdr. Spreng. syst. append. p. 221.) Stem 4-sided, striated; leaflets orbicular, smooth, trifid, glaucous beneath; panicle forked, corymbose, erect; flowers dioecious. ♃. S. Native of Java. Flowers yellow.

Java Meadow-Rue. Fl. June, July. Pl. 3 feet.

§. 2. Genuìna, (*genuinus, natural; species all hermaphrodite.) Flowers hermaphrodite. Leaves decompound. Roots fibrous.*

15 Th. foliolòsum (D. C. syst. 1. p. 175.) stem round, smooth, branched; flowers in corymbose panicles, drooping; leaves quadripinnate; leaflets somewhat ternate, roundish or cordate, 3-lobed, membranous, smooth; petioles 3-parted. ♃. H. Native of Upper Nipaul, at Suembu. Th. Dalínga, Hamilt. MSS. Flowers small, yellow.

Leafy Meadow-Rue. Fl. May, July. Pl. 1 ½ to 2 feet.

16 Th. saniculæfórme (D. C. prod. 1. p. 12.) stem roundish, branched; flowers few, panicled; peduncles rigid, divaricating; sepals reflexed; pericarps striated, pointed with the long inflexed style. ♃. H. Native of Nipaul.

Sanicula-formed Meadow-Rue. Pl. 1½ feet.

17 Th. petaloìdeum (Lin. spec. 770.) stem round, almost naked; flowers corymbose; filaments dilated at the apex; leaflets smooth, ovate, obtuse, entire or 3-lobed. ♃. H. Native of the mountains of Dauria, and on Mount Odon-Tchelen on the confines of China. Deless. icon. sel. 1. t. 9. Lodd. bot. cab. 891. Leaves ternately decompound. Sepals roundish, white. Filaments flesh-colored. Anthers yellow. Pericarps 6. 8, sessile, oblong, striated.

Var. β, stamíneum (Lin. fil. suppl. 271).

Petal-like-sepalled Meadow-Rue. Fl. June, July. Clt. 1799. Pl. 1½ feet.

18 Th. alpìnum (Lin. spec. 767.) stem quite simple, almost naked, dwarf; raceme simple, terminal; flowers nodding; leaves smooth, shining. ♃. H. Native of Kamtschatka, Newfoundland, Lapland, Greenland, Iceland, Pyrenees, &c. On most of the highest mountains in Wales and Scotland. Smith. eng. bot. t. 262. Lightf. scot. t. 13. f. 1.; Fl. dan. t. 11. A small very smooth plant. Leaves chiefly radical, twice ternate and somewhat pinnate; leaflets wedge-shaped, dark green and shining above, glaucous beneath. Sepals whitish, acute. Anthers tawny.

Alpine Meadow-Rue. Fl. May, Jul. Britain. Pl. ¼ to ½ ft.

19 Th. fœ'tidum (Lin. spec. 768?) stem simple, naked at the base, leafy in the middle, panicled at top; leaves with clammy pubescence; leaflets obtuse, toothed. ♃. H. Native of France, Switzerland, Hungary, Siberia, Russia, &c. In valleys, on hills, or in the fissures of calcareous rocks. Lam. ill. t. 497. f. 2. Waldst. and Kit. pl. hung. 2. p. 190. t. 174. Th. styloìdeum, Lin. fil. suppl. 271. Th. saxátile, Vill. dauph. 4. p. 714. Stem clammy-pubescent, covered with scales at the base instead of leaves. Petioles 3-parted. Segments of leaves twice or thrice pinnate. Leaflets orbicular, cordate, irregularly 3 to 5-lobed at the apex. Panicle erect, spreading, few-flowered. Flowers nodding. Anthers yellow. Sepals reddish on the outside.

Fetid Meadow-Rue. Fl. May, Jul. Clt. 1640. Pl. 1 ft.

20 Th. pube'scens (Schl. pl. helv. D. C. syst. 1. p. 176.) stem simple, with a few leaves, panicled at top; leaves clammy-pubescent. ♃. H. Native of Caucasus; about Montpelier, and in Lower Vallais, on chalky rocks. Th. Cornùti, Poir. dict. 5. p. 319, exclusive of the synonymes and countries. Resembles *Th. fœtidum*, but with the leaves scattered equally over the stem, and with the leaflets more acute.

Pubescent Meadow-Rue. Fl. May, July. Clt. 1819. Pl. 2 ft.

21 Th. acuti'lobum (D. C. syst. 1. p. 177.) stem simple, naked at the base, leafy in the middle, and panicled at top; leaves pubescent, viscid; lobes of leaflets acute. ♃. H. Native of Siberia. Very like *Th. fœtidum*. Deless. icon. sel. 1. t. 10.

Acute-lobed Meadow-Rue. Fl. Ju. Jul. Clt. 1820. Pl. 1½ ft.

22 Th. dive'rgens (Link enum 584.) leaflets ovate-oblong, pubescent beneath, bluntly 3-lobed; branches and petioles divaricating; panicle diverging. ♃. H. Native of Siberia. *Th. divaricàtum*, Spreng. new entd. 1. p. 37. No. 68. Flowers yellow.

Diverging-panicled Meadow-Rue. Fl. Ju. Jul. Clt. 1819. Pl. 2 feet.

23 Th. Schweigge'ri (Spreng. syst. 1. p. 271.) stem erect, furrowed; leaflets ovate, cuneated, multifid and acutely toothed; petioles with stipulas at their base; filaments capillary, elongated; anthers awned. ♃. H. Native of? Flowers yellow.

Schweigger's Meadow-Rue. Fl. June, July. Pl. 3 feet.

24 Th. squarròsum (Steph. in Willd. spe. 2. p. 1299.) stem round; flowers panicled, drooping; petioles stem-clasping, winged. ♃. H. Native of Siberia. Leaves supra-decompound;

lateral leaflets for the most part ovate-acute, and very entire, terminal ones, as well as the superior lateral ones, trifid or bifid. Petiole with an orbicular membranous toothed wing at the base on each side. Flowers yellow.

Squarrose Meadow-Rue. Fl. June, Jul. Clt. 1806. Pl. 1 ft.

25 Th. SIBÍRICUM (Gært. fr. 1. p. 355. t. 74.) stem roundish; flowers panicled, drooping; leaflets smooth, ovate-cuneated, trifid with acute, entire, or acutely cut lobes. ♃. H. Native of Armenia and Siberia. Flowers light yellow. Plant glaucous.

Siberian Meadow-Rue. Fl. Ju. Jul. Clt. 1775. Pl. 1 to 3 ft.

26 Th. MÌNUS (Lin. spec. 769.) stem round, mealy; flowers loosely panicled, drooping; leaflets smooth, roundish, toothed at apex, glaucous; pericarps acute, furrowed. ♃. H. Native almost throughout Europe, as well as Siberia, in mountainous pastures. In Britain, in chalky pastures, especially such as are rather mountainous, or in shell sand on the sea coast. Smith, eng. bot. t. 11. Fl. dan. t. 732. Jacq. aust. t. 419. Stem zigzag. Leaves doubly pinnate, then ternate; leaflets broadly cordate or wedge-shaped. Stipulas rounded. Sepals pale-purple with white edges. Anthers yellow.

Lesser Meadow-Rue. Fl. June, Jul. Britain. Pl. $\frac{1}{2}$ to 1 ft.

27 Th. COLLÌNUM (Wallr. sched. crit. 259.) stem leafy at the base, intercepted with approximate internodes; leaves green on both surfaces, smooth, radical ones sessile, crowded; leaflets ovate or cordate, roundish, bluntly trifid; flowers panicled, drooping; pericarps ovate, equally ribbed, crowned by the straight style. ♃. H. Native of Saxony in fields about Halle. Th. mìnus, Spreng. fl. hal. 156, exclusive of the synonymes. Sepals purplish. Anthers yellow.

Hill Meadow-Rue. Fl. June, Jul. Clt. 1800. Pl. 1 to 1 $\frac{1}{2}$ ft.

28 Th. SAXA'TILE (Schl. pl. helv. D. C. syst. 1. p. 178.) stem round; flowers panicled, erect; leaflets smooth, roundish, toothed at apex, glaucous underneath; pericarps acute at both ends. ♃. H. Native of middle Europe in woody hills and mountain valleys, especially in Alsace, Switzerland, and the Pyrenees. Th. mìnus, Poll. pal. No. 522. Very like *Th. mìnus* but distinguished from it by the stem being green but purple at the base, and destitute of mealiness, as well as in the flowers being erect. Anthers yellow.

Rock Meadow-Rue. Fl. Ju. Jul. Clt. 1819. Pl. 1 to 2 ft.

29 Th. CALA'BRICUM (Spreng. pug. 1. p. 37. No. 67.) stem roundish, destitute of mealiness; panicle of flowers somewhat racemose, contracted, leafless; leaflets roundish, bluntly 3-lobed, rather glaucous underneath; pericarps deeply furrowed, tapering to the base. ♃. H. Native of Calabria on Mount Leone and of Sicily.—Moris. Hist. 1. sect. 9. to 20. f. 16.? Flowers yellow.

Calabrian Meadow-Rue. Fl. Ju. Jul. Clt. 1800. Pl. 2 to 3 ft.

30 Th. ELA'TUM (Murr. syst. ed. 14. p. 513.) stem roundish, destitute of mealiness; flowers panicled, erect; leaflets smooth, ovate, somewhat cordate, and somewhat trifid; pericarps obtuse at the base. ♃. H. Native of Hungary. Jacq. hort. vind. 3. t. 95. Intermediate between *Th. saxátile* and *május*, differing from the first in the pericarps being obtuse at the base not acute, and from the second in the flowers being erect not drooping. Flowers with white sepals and yellow anthers.

Var. β, ambíguum (Schl. pl. helv.) ♃. H. Native of Switzerland on the edges of fields in the valley called Binn.

Tall Meadow-Rue. Fl. August, Sept. Clt. 1794. Pl. 5 ft.

31 Th. MA'JUS (Murr. syst. 513.) stem round, destitute of mealiness; flowers loosely panicled, drooping; leaflets smooth, trifid, glaucous underneath, with ovate mucronate lobes; pericarps obliquely rounded at the base. ♃. H. Native of Switzerland, Dauphiny, and Cevennes, on dry bushy hills. In England at Baydales, near Darlington; also on the margin of Ulswater. Jacq. aust. t. 420. Smith, eng. bot. t. 611. Stem purplish, angular on the upper part. Sepals purplish-green. Anthers yellow. Leaves triply pinnate then ternate. Stipulas crescent-shaped, notched.

Greater Meadow-Rue. Fl. June, Jul. England. Pl. 3 ft.

32 Th. NU'TANS (Desf. tabl. mus. ed. 1. p. 123.) stem round, destitute of mealiness, flowers loosely panicled, drooping; leaflets 3 to 5-toothed at apex, acutely cut, glaucous beneath; pericarps oblique and obtuse at the base. ♃. H. Native of the Alps of Savoy. Th. acuminàtum, Spreng. pug. 2. Very like *Th. màjus*. Flowers yellow.

Nodding Meadow-Rue. Fl. Ju. Jul. Clt. 1819. Pl. 2 to 3 ft.

33 Th. ME'DIUM (Murr. syst. 513.) stem round, destitute of mealiness; flowers loosely panicled, erectish; leaflets smooth, oblong, wedge-shaped, acutely trifid, upper ones undivided, lanceolate. ♃. H. Native of Hungary and Tauria, on hills. Jacq. hort. vind. 3. t. 96. Th. diffùsum, Schrad. Flowers yellowish.

Middle Meadow-Rue. Fl. June, Jul. Clt. 1789. Pl. 2 ft.

34 Th. TRÍGYNUM (Fisch. in litt. D. C. prod. 1. p. 14.) stem furrowed, erect; flowers very loosely panicled, erect, with 3 styles; leaflets smooth, oval, wedge-shaped, acutely trifid, glaucous beneath. ♃. H. Native of Dahuria. Pericarps 1 to 3 oblong, striated. Flowers yellow.

Three-styled Meadow-Rue. Fl. Ju. Jul. Clt. 1818. Pl. 2 ft.

35 Th. CONCÍNNUM (Willd. enum. 584.) stem round, straight; flowers drooping, disposed in a very ample spreading panicle; leaflets smooth, wedge-shaped, trifid, acute, with the middle lobe usually 3-toothed. ♃. H. Native of? Stem erect, purplish. Radical leaves quadriternate, cauline ones 3-parted, with the partitions bipinnate. Flowers white with yellow anthers.

Neat Meadow-Rue. Fl. June, July. Clt? Pl. 3 feet.

36 Th. GLAUCE'SCENS (D. C. syst. 1. p. 180.) stem round, straight; flowers drooping, loosely panicled; stipulas small, at the base of the ramifications of the petioles; leaflets smooth, 3-lobed at the apex. ♃. H. Native of Russia? Resembles *Th. aquilegifòlium*. Herb glaucous. Stem fistulous. Sepals oval, purplish. Anthers yellow.

Glaucescent Meadow-Rue. Fl. Ju. Jul. Clt. 1818. Pl. 2 to 3 ft.

37 Th. GALIOÌDES (Nestl. in Pers. ench. 2. p. 101.) stem round, a little furrowed, upright; root creeping; panicle strict; flowers nodding; leaflets linear, narrow, very entire, shining, with revolute margins, ultimate one almost sessile. ♃. H. Native of Alsace in sandy meadows. Deless. icon. sel. 1. t. 11. Th. angustifòlium. *Var. β, galioìdes*, D. C. fl. fr. no. 4601. Panicle of flowers resembling that of *Gàlium vérum*. Flowers yellow.

Lady's Bedstraw-like Meadow-Rue. Fl. Ju. Jul. Clt. 1816. Pl. 1 to 3 feet.

38 Th. ANGUSTIFÒLIUM (Jacq. hort. vind. 3. t. 43.) stem upright, round, a little furrowed; root fibrous; panicle multiple, erect; flowers erectish; leaflets linear-lanceolate, quite entire, shining, ultimate one rather cut, remote. ♃. H. Native of Germany and France in meadows and woods. Th. angustíssimum, Crantz. austr. 2. p. 79. Stem fistulous. Flowers yellow.

Narrow-leaved Meadow-Rue. Fl. June, July. Clt. 1793. Pl. 3 or 4 feet.

39 Th. LU'CIDUM (Lin. spec. 770.) stem branched, round, somewhat furrowed; panicle multiple, erect; flowers erectish; leaflets linear-lanceolate, entire, shining, ultimate one lobed. ♃. H. Native of France, about Paris, and Spain, in meadows. Th. mèdium, Poir. dict. 5. p. 316. Th. speciòsum, Mill. dict. no. 2. Th. longifòlium, Krok. fl. siles. 2. 1. p. 242—Pluk. alm. 363. t. 65. f. 5. An intermediate plant between *Th. angustifòlium* and *mèdium*. Flowers yellow.

Shining-leaved Meadow-Rue. Fl. June, Jul. Clt. 1739. Pl. 2 to 3 feet.

40 Th. NÌGRICANS (Jacq. fl. aust. 5. t. 421.) stem upright,

branched, furrowed; root fibrous; panicle multiple, erect, somewhat corymbose; leaflets of radical leaves wedge-shaped, trifid, those of the stem leaves oblong-linear. ♃. H. Native of Austria, north of Italy, and south of France, on the margins of fields and on the banks of rivers in moist sandy places.—Moris. hist. 1. sect. 9. t. 20. f. 3. Th. rugòsum, Poir. dict. 5. p. 317. exclusive of the synonymes and countries. Like *Th. flàvum*. Flowers yellow.

Blackish-leaved Meadow-Rue. Fl. Ju. Jul. Clt. 1798. Pl. 2 to 3 feet.

41 TH. FLA'VUM (Lin. spec. 770. var. *a*.) stem erect, branched, furrowed; root fibrous; panicle multiple, erect, somewhat corymbose; leaflets wedge-shaped, trifid, acute. ♃. H. Native throughout all Europe, also Siberia and about Constantinople. In Britain in wet meadows and about the banks of rivers and ditches. Smith, eng. bot. t. 367. Fl. dan. t. 939. Th. praténse, Lin. fl. lapp. 224. Stem hollow. Leaves doubly pinnate, ultimately ternate. Sepals cream-coloured. Anthers yellow. Root yellow. The root dyes wool yellow, and has been formerly used to cure the jaundice, probably from its colour. An acrid herb, raising blisters on the skin; but cattle frequently feed upon it mixed with grass.

Var. β paupérculum (D. C. fl. fr. No. 4603.) panicle few-flowered.

Var. γ vaginàtum (D. C. prod. 1. p. 14.) sheaths of petioles expanded into auricles. Th. vaginàtum. Desf. cat. hort. par. ed. 2. suppl. 274.

Yellow-rooted Meadow-Rue. Fl. Ju. Jul. Britain. Pl. 3 to 4 ft.

42 TH. DIVARICA'TUM (Horn. hort. hafn. add. 967.) stem branched, upright, leafy, furrowed; leaflets ternate, linear, very narrow, trifid, divaricating; panicle diffuse (strict?); flowers erect. ♃. H. Native of? Flowers yellowish.

Divaricating-leaved Meadow-Rue. Fl. Ju. Jul. Clt. 1819. Pl. 2 feet.

43 TH. ROSMARINIFÒLIUM (Nocett. in Spreng. syst. 2. p. 672.) leaves supradecompound; leaflets lanceolate, acute, very entire, opaque above, glaucous beneath; panicle diffuse; flowers erect. ♃. H. Native of Italy. Flowers yellow.

Rosemary-leaved Meadow-Rue. Fl. Ju. Jul. Clt. 1816. Pl. 2 to 3 feet.

44 TH. LASERPITIIFÒLIUM (Horn. hort. hafn. suppl. p. 62.) lower leaflets cuneated, trifid, those of the cauline leaves linear, ultimate ones 3-parted; flowers erect. ♃. H. Native of? Flowers yellow.

Laserwort-leaved Meadow-Rue. Fl. Ju. Jul. Clt. 1810. Pl. 3 ft.

45 TH. THUNBE'RGII (D. C. syst. 1. p. 183.) stem erect, branched, round; panicle compound, erect; leaflets wedge-shaped, acutely trifid at the apex, glaucescent. ♃. H. Native of Japan. Resembles *Th. flàvum*, but differing in the stem being round and smooth, not furrowed; flowers smaller; ovaries 3 to 5, not 10 to 15; stamens 10 to 12 not 24. Flowers yellow.

Thunberg's Meadow-Rue. Fl. June, July. Pl. 3 feet.

46 TH. SÍMPLEX (Lin. mant. 78.) stem erect, simple, angular; root creeping; panicle erect, racemose, few-flowered; leaflets linear, or lower ones oblong, acute, trifid. ♃. H. Native of France, Sweden, Norway, Denmark, Switzerland, in waste meadows and on the banks of rivers. Fl. dan. t. 244. Th. angustifòlium, Vill. dauph. 3. p. 722, exclusive of the synonymes. Th. tenuifòlium, Swz. Flowers with green sepals and yellow stamens. Herb glaucous.

Simple-stemmed Meadow-Rue. Fl. May, July. Clt. 1778. Pl. 1 to 2 feet.

47 TH. DENSIFLÒRUM (H. B. and Kunth. nov. gen. et spec. amer. 5. p. 38.) stem erect, striated; panicle compound, erect; flowers crowded, somewhat capitate; leaflets oval, acutely trifid or 3-toothed, glaucous and reticulately veined beneath. ♃. G. Native of South America. Stem hollow. Petioles trifid; lateral segments bearing 3 leaves, middle one pinnate. Flowers yellow. Ovaries few and sometimes perhaps wanting, as is the case in most of the American species.

Dense-flowered Meadow-Rue. Fl. June, July. Pl. 2 to 3 ft.

48 TH. CINE'REUM (Desf. cat. hort. par. ed. 2. p. 146.) stem erect, round, striated; panicle much branched, loose, rigid; flowers erect; leaflets oval, cuneated at the base, 3 to 5-toothed at the apex. ♃. H. Native of? Stem hollow, leaves tripinnate. Flowers yellow. Ovaries 7 to 8, acute.

Cinereous Meadow-Rue. Fl. Ju. Jul. Clt. 1810. Pl. 3 or 4 ft.

49 TH. GLAU'CUM (Desf. cat. hort. par. ed. 2. p. 146.) stem erect, round, striated, mealy; panicle compound, erect, crowded; leaflets ovate, rather cordate, bluntly trifid, glaucous beneath. ♃. H. Native of Spain, Portugal, Pyrenees, and Switzerland. Schrad. hort. gött. 1. p. 14. t. 8.—Moris. hist. 1. sect. 9. t. 20. f. 1. Th. speciòsum, Poir. dict. 5. p. 315. Stem simple, hollow. Petioles 3-parted, with pinnate and bipinnate branches. Leaflets ovate, orbicular, 3-lobed; lobes grossly toothed. Flowers of 4 to 5 sepals, yellow. Ovaries 4 to 6 ovate.

Glaucous Meadow-Rue. Fl. Ju. Jul. Clt. 1798. Pl. 2 to 5 ft.

50 TH. RUGÒSUM (Ait. hort. kew. ed. 1. vol. 2. p. 262.) stem round, striated, green; panicle compound, erect; flowers crowded; leaflets ovate, rather cordate, coarsely 3 to 5 crenate-toothed, glaucous beneath, shining above. ♃. H. Native of North America, in wet meadows, and on the banks of rivers, from Pennsylvania to Carolina. Th. crenàtum, Desf. cat. hort. par. ed. 2. p. 126. Resembles *Th. glaùcum*, but differing in the stem being green not glaucous. Flowers with white sepals and yellow anthers.

Var. β, díscolor; stem purplish; leaflets purplish beneath; sepals purplish; anther yellow. Th. díscolor, Willd. enum. app. 46.

Var. γ, umbellíferum (D. C. prod. 1. p. 134.) stem thicker and taller, ending at the apex in long-stalked umbels. Flowers yellow. Perhaps a distinct species.

Wrinkled-leaved Meadow-Rue. Fl. Jul. Clt. 1774. Pl. 4 to 6 ft.

†*Species belonging to last division but not sufficiently known.*

51 TH. CYNAPIIFÒLIUM (Fisch. in litt.) ♃. H. Native of Siberia.

Cynàpium-leaved Meadow-Rue. Fl. Ju. Jul. Clt. 1818. Pl. 2 ft.

52 TH. OLIGOSPE'RMUM (Fisch. in litt.) ♃. H. Native of Siberia.

Few-seeded Meadow-Rue. Fl. Ju. Jul. Clt. 1820. Pl. 2 ft.

§ 3. INDIVÌSA, (*from indivisus, undivided; because the leaves are simple*). *D. C. syst.* 1. *p.* 185. *prod.* 1. *p.* 15. *Flowers hermaphrodite. Leaves undivided.*

53 TH. ROTUNDIFÒLIUM (D. C. syst. 1. p. 185.) leaves radical, stalked, kidney-shaped, somewhat orbicular, broadly crenated, many-nerved. ♃. H. Native of Nipaul. Th. Bátula, Hamilt. MSS. Th. alchemillæfòlium. Wall. in litt. Root fascicled, with long black fibres. Scapes radical, bracteate, with a few one-flowered branches at the top. Sepals 5 rarely 4. Ovaries sessile, oblong, terminated by the acute stigma, collected into a globose head. Pericarps striated.

Round-leaved Meadow-Rue. Pl. ½ to 1 foot.

54 TH. RANUNCULÌNUM (Muhl. in Willd. enum. 585.) leaves simple, 5-lobed, serrated. ♃. H. Native of Carolina. Flowers corymbose, pale yellow.

Crowfoot-like Meadow-Rue. Fl. Ju. Jul. Clt. 1806. Pl. 1 ft.

§ 4. GRUMÒSA, (*from grumòsus, full of clods; tuberous roots*). *D. C. syst.* 1. *p.* 186; *prod.* 1. *p.* 15. *Roots grumose. Flowers hermaphrodite. Sepals petal-like, longer than the stamens.*

55 TH. TUBERÒSUM (Lin. spec. 768.) root grumose; flowers

loosely corymbose; involucre none; bracteas sessile. ♃. H. Native of Spain and the Pyrenees, in sterile stony pastures or hills.—Moris. hist. 2. p. 438, sect. 4. t. 28. f. 13.—Mill. fig. 177 to 265. f. 2. Roots like those of *Œnánthe*. Leaves crowded, stalked, bi-tripinnate; leaflets orbicular, 3-lobed, smooth. Flowers white, with 5 oval blunt sepals. Ovaries 7 to 8, elongated, rather incurved.

Var. β, uniflòra. Stem 1-flowered. ♃. H. Native of Occitania. *Tuberous*-rooted Meadow-Rue. Fl. June. Clt. 1713. Pl. 1 ft.

56 TH. ANEMONOÌDES (Mich. fl. bor. amer. 1. p. 322.) root grumose; flowers umbellate; leaves biternate; leaflets cordate-roundish, 3-lobed; floral leaves opposite or tern, stalked, biternate, constituting an involucre. ♃. H. Native of North America in woods, frequent from Canada to Carolina. Anemòne thalictroìdes, Lin. spec. 763. Juss. an. du mus. 3. p. 249. t. 21. f. 2. Sims. bot. mag. t. 866. Willd. hort. berl. t. 44. Roots black. Radical leaves biternate; leaflets somewhat cordate, 3-toothed. Floral leaves 2-3, with stalked wedge-shaped leaflets. Flowers white, of 5 sepals. Pericarps striated. This plant has the habit of *Isopỳrum*, flowers of *Anemòne*, and the fruit of *Thalictrum*.

Var. β uniflòra (Pursh. fl. amer. sept. 2. p. 387.) stem one-flowered.

Var. γ múltiplex. Flowers double. A beautiful plant, commonly cultivated in gardens.

Anemòne-like Meadow-Rue. Fl. March, May. Clt. 1768. Pl. ½ foot.

†*A doubtful species.*

57 TH.? SINE'NSE? (Lour. fl. cochin. 1. p. 423.) ♄. ♃. G. Native of China. Root a white solid round tuber. Stem round, erect, suffruticose, simple, one-flowered. Flower white, terminal; petals 5, round, spreading. Stamens short, polyandrous. Seeds many, minute. Leaves linear-lanceolate. Perhaps this plant is a species of *Ranúnculus*.

Chinese Meadow-Rue. Pl. 1 foot.

Cult. Mostly hardy perennial herbaceous free growing plants, well adapted for borders, easily increased by dividing at the root. The *Th. anemonoìdes* thrives best in peat soil. Those natives of warm climates require protection during winter. The species belonging to the two last divisions of the last section are the most ornamental.

V. TETRA'CTIS (from τετρας, *tetras*, by fours; in allusion to the parts of flower.) Spreng. new entd. 3. p. 53; D.C. prod. 1. p. 16.

LIN. SYST. *Tetràndria, Tetragỳnia*. Involucre none. Calyx of 4 blunt sepals. Petals none. Anthers oblong, seated at the base. Carpels 4, acute. A small shrub with alternate oblong entire leaves.

1 TET. CAPE'NSES (Spreng., l. c.) ♄. G. Native of the Cape of Good Hope. Peduncles capillary, crowded towards the top of the branches. Flowers red.

Cape Tetráctis. Shrub 1 foot.

Cult. This plant will grow well in a mixture of sand, loam, and peat, and young cuttings planted in a pot of sand, and placed under a bell glass, will strike root.

VI. ANEMO'NE (from *ανεμος, anemos*, wind; because the greater part of the species grow in elevated places, much exposed to the wind.) C. Bauh. pin. 173 and 177. Tourn. inst. 275 and 284. t. 147 and 148. Lin. gen. 694. Lam. ill. t. 496. Gært. fruct. 1. p. 357. t. 74. D. C. syst. 1. p. 188. prod. 1 p. 16.

LIN. SYST. *Polyandria, Polygynia*. Involucre of 3-cut leaves distant from the flower, (f. 6. *a*.) Calyx of 5 to 15 petal-like coloured sepals, (f. 6. *b*.) Petals wanting. Perennial herbs with more or less divided leaves, (f. 6.) The recent herb is acrid, applied externally it occasions blisters, taken internally it is poisonous; but nevertheless some of the species are proposed for chronic, ophthalmic and venereal diseases.

SECT. I. PULSATLLAÍ, (from *pulso* to beat; in allusion to the species growing in elevated situations much exposed to the wind.) Bauh. prin. 177. D. C. syst. 1. p. 188. prod. 1. p. 16. Cariopsides ending in a long bearded tail (f. 6. *f*.). Leaves of involucre sessile, palmately-parted into linear lobes. Flowers generally purple.

1 AN. VERNA'LIS (Lin. sp. 759.) leaves pinnate; segments cuneate-lanceolate, trifid, smoothish; flower erect; involucre very villous; sepals 6, straight, elliptical-oblong. ♃. H. Native of Europe, on rocks and in meadows, on the highest mountains in the Alps, near the limits of perpetual snow, Pyrenees, Avergne, Germany, Sweden, Norway, &c. Fl. dan. t. 29. Sweet. fl. gard. 205.—Hall. helv. no. 1147. t. 21. Pulsatílla vernàlis, Mill. dict. no. 3. An. sulphùrea, All. ped. no. 1921. but not of Lin. Radical leaves somewhat villous or smooth. Involucre very pilose. Leaves clothed with white, sometimes yellowish hairs, especially when dry. Flower subsessile or on pedicels; sepals oblong or oboval, acute or obtuse, purple or white.

Var. β, lùteus; flowers yellow. Pulsatílla alpìna, II, Dalech. lug. 851. f. 1. Pulsatílla lutea apii hortensis folio. C. Bauh. pin. 177.

Var. δ, autumnàlis; flowering in autumn, leaves like parsley Pulsatílla apii folia autumnàlis. C. Bauh. prod. 94.

Spring Pasque-flower. Fl. Ap. or δ. Aug. Clt. 1752. Pl. ½ ft.

2 AN. HALLE'RI (All. ped. no. 1922. t. 80. f. 2.) leaves pinnate, very villous; segments 3-parted; lobes lobate; lobules lanceolate-linear, acuminated; flower erect; sepals 6, oval-lanceolate. ♃. H. Native of Switzerland, Alps of Valais, Piedmont, Savoy, Dauphiny, and in the Eastern Pyrenees, near the limits of perpetual snow. Lodd. bot. cab. 940. The whole plant is covered with long silky hairs. Flowers large, erect, purplish inside.

Haller's Pasque-flower. Fl. Ap. May. Clt. 1816. Pl. ½ ft.

3 AN. CE'RNUA (Thunb. fl. jap. p. 238.) leaves pinnate, villous underneath; segments pinnatifid; lobes cut, oblong; flower somewhat drooping; sepals 6, spreading, elliptical-oblong. ♃. H. Native of Japan near Jedo and Nagasaki. Scapes, petioles and peduncles clothed with downy hairs. Radical leaves from 2 to 3, one half shorter than the scape. An intermediate plant between *An. pulsatilla* and *vernàlis*. Flowers smaller than in *An. pulsatílla*, of a dark purple color. Sepals villous outside, smooth inside. Stamens 3 times shorter than the sepals. Ovaries and styles villous. Stigmas smooth, purple.

Drooping-flowered Pasque-flower. Fl. May, Ju. Clt. 1806. Pl. ½ foot.

4 AN. PA'TENS (Lin. spe. 759.) leaves pinnate, rising after the flower; segments 3-parted; lobes toothed at the top; flowers erect, spreading; sepals 5-6. ♃. H. Native of Siberia, in uncultivated fields of Tobolsk, and in pine-groves about Barnaoul, Lower Lusace, and Poland, also in Silesia, and Switzerland. Ker. bot. reg. t. 61.—Breyn. icon. t. 61. cent. 132. t. 134.—Helw. puls. 52. t. 2, 3. Pulsatilla patens, Mill. dict. No. 4. This is a very distinct species with the flowers rising before the leaves; but nevertheless it is found about Barnaoul flowering in the month of May, with the almost dried leaves of the preceding year. Flower in the involucre almost sessile. Fruit in the involucre on a very long peduncle. There are evidently several varieties of this plant, or perhaps distinct species, one with the flower composed of 6 or 8 sepals. The Siberian plant has yellow flowers; the Swiss and German have purplish flowers; the Polish one has them white.

Var. β, orchroleùca (D. C. prod. 1. p. 17.) leaves yellowish;

flower cream-coloured. Sims. bot. mag. 1994. Native of the Eastern parts of Russia. (Fisch.)

Spreading Pasque-flower. Fl. Ju. Jul. Clt. 1752. Pl. 1 ft.

5 AN. PULSATÍLLA (Lin. spe. 759.) leaves pinnate; segments many-parted; lobes linear; flowers rather nodding; sepals 6, spreading. ♃. H. Native of uncultivated fields and dry hills, in exposed situations throughout Europe and Siberia, in England in dry open chalky pastures. Smith, eng. bot. 51. Fl. dan. 153.—Clus. hist. 1. p. 246. f. 1. Pusatílla vulgàris, Mill. dict. no. 1. An. praténsis, With. brit. 498. An. collìna, Sal. prod. 371.

Var. β, rùbra (Lam. dict. 1. p. 163.) plant dwarf; flower erect; sepals blunter. ♃. H. Pulsatílla rùbra, Dalech. lug. 850, f. 1.—Lob. icon. 282, f. 1.

Var. γ, lilacìna (D. C. syst. 1. p. 192.) flowers lilac. ♃. H. Native of Switzerland. An. intermèdia, Schult. obs. 101. An. longipétala, Schleich. pl. ex. helv.

Var. δ, Dahùrica (D. C. syst. 1. p. 192. prod. 1. p. 17.) plant dwarf, very villous; flower erect; sepals oblong. ♃. H. Native of Dahuria.

Variations. Flower purple, blue, red, lilac, greenish and white, single or double from the stamens being sometimes changed into petals, and sometimes the ovaries are converted into green leaflets. Stature, from a hand to a foot high. Sepals acute, but in var. β, obtuse. Var. β, is distinguished by its dwarfer stature, erect very spreading red flowers, and blunter sepals. Var. γ, by the peduncle and involucre being villous, flowers pale lilac with the outside very pilose. Var. δ is dwarf and very villous, with the lobes of leaves short and very acute, flower erect, sepals oblong. Perhaps the two following species belong to one or other of the preceding varieties. *A. Pisciénsis* and *punícea* of Sism. agr. tosc. 223.

The plant is acrid, and will easily raise blisters; the distilled water will vomit, it cannot therefore be given with safety in disorders of the lungs. The juice of the petals stain paper green. Goats and sheep will eat it, but horses, cows, and swine will refuse it.

Pulsatilla or common Pasque-flower. Fl. Ap. May. Britain. Pl. ½ to 1 foot.

6 AN. PRATE'NSIS (Lin. spe. 760.) leaves pinnate; many-parted; lobes linear; flower pendulous; sepals 6, erect, reflexed at top. ♃. H. Native of Denmark, Scania, Russia at the river Courba, France, Germany; in dry exposed fields and meadows. Fl. dan. t. 611. Schk. hand. t. 150. Pulsatílla nìgricans, Störck. lib. puls. with a figure. An. Pulsatílla β, Lam. fl. fran. 3. p. 320. An. sylvéstris, Vill. daup. 4. p. 726. exclusive of the synonymes of Gerard and Lin. An. Pusatílla, Sturm. deutsch. fl. icone? Differing from *An. Pulsatílla* in the flower being smaller, pendulous not suberect, and of a deeper colour; sepals narrower, and more acute, connivent at base, reflexed at apex. M. Storck recommends an extract or infusion of this plant in chronic affections of the eyes, and also in long standing siphilitic sores. In its recent state the plant has scarcely any smell, but its taste is extremely acrid, and when chewed corrodes the tongue and fauces. The liquor obtained by distilling the plant with water is strongly impregnated with its virtues, and the remaining extract is considerably active. It also appears from some experiments to contain a camphoraceous matter, which was obtained in the form of crystals, of an acrid taste, and very inflammable.

Var. β, obsolèta; flower larger, pale; lobes of pinnula broader, awned. Sims, bot. mag. t. 186. Helw. puls. p. 65. t. 11. D. C. prod. 1. p. 17.

Meadow Pasque-flower. Fl. May. Clt. 1731. Pl. ½ to 1 ft.

7 AN. ALBA'NA (Stev. mem. soc. nat. mosc. 3. p. 264.) leaves pinnate; segments many-parted; lobes oblong-linear; flower nodding; pedicels scarcely longer than the involucre; sepals 6, erect, somewhat reflexed at apex. ♃. H. Native on the highest mountains in Eastern Caucasus. Very like *An. praténsis*, but differing from it in the flower being white or cream-coloured, not purple.

White Pasque-flower. Fl. May. Clt. 1821. Pl. ½ foot.

8 AN. DAHU'RICA (Fisch. in lit. D. C. prod. 1. p. 17.) leaves ternate with the two lateral segments sessile, unequal, 3-lobed, terminal one-stalked, 3-parted; lobes 2—3-cleft, all linear and acute; sepals 6, erect, connivent. ♃. H. Native of Dahuria, at the river Ingoda. Flower flesh-coloured, size of those of *A. praténsis*, but pale, and with the fruit of *A. Pulsatílla*.

Dahurian Pasque-flower. Fl.? Clt. 1823. Pl. ½ foot.

9 AN. NUTTALIA'NA (D. C. syst. 1. p. 193.) leaves 3-parted or ternate, segments cuneate, trifid, cut; lobes linear-lanceolate, elongated; leaves of the involucre parted into linear lobes; flower erect; sepals 5-6, erect, connivent. ♃. H. Native of North America, in Louisiana, banks of the Mackenzie river, and valleys of the Rocky Mountains. Clématis hirsutíssima. Ph. fl. amer. sept. 2. p. 385. An. Ludoviciàna. Nutt. gen. am. 2. p. 20. in Journ. acad. sc. phil. vol. 5. p. 158. t. 8. A. pàtens Hook fl. bor. amer. p. 4. A very distinct species, with the habit almost of *An. Pulsatílla*. Radical leaves ternate, not pinnate. Flower purple, sometimes cream-coloured, erect, villous outside as well as the base of scapes and the leaves of the involucre. Fruit like those of *An. Pulsatílla*. The young flower-buds are eaten by the marmots. Hooker considers this identical with *An. pàtens*, but they are evidently very distinct plants.

Nuttall's Pasque-flower. Fl. Ju. Jul. Clt. 1826. Pl. 1 ft.

10 A. FLAVE'SCENS (Zucc. in fl. d. Gaz. bot. ratisb. 1826. p. 369.) leaves rising after the flower, ternate, segments many-parted, lobes cut, linear; flower erectly-spreading. ♃. H. Native of Siberia, frequent about Omsk. Flowers yellowish.

Yellowish-flowered Pasque-flower. Pl. ½ foot.

SECT. II. PREONA'NTHUS, (from *πρηον, preon*, the top of a mountain; *ανθος, anthos*, a flower; habitat.) D. C. syst. 1. p. 193. prod. 1. p. 17. Cariopsides ending in long bearded tails (f. 6. *f.*). Leaves of involucre ternate, stalked. Flowers yellow or white.

11 AN. ALPÌNA (Lin. spe. 760.) leaves biternate; segments pinnate and deeply serrated; involucre of the same form; flower erect; sepals 6, spreading. ♃. H. Native of sloping pastures and stony places of mountains in Middle Europe, Pyrenees, Cevennes, Auvergne, and Switzerland; North America, on the eastern declivities of the Rocky Mountains, &c. Crantz. aust. 2. p. 105. t. 3. f. 2. A very variable species, as will be seen by the following varieties. The transition between the extreme varieties are scarcely discernible, not less so in the gardens than in the mountains where they are gathered. Flowers sometimes the size of *A. coronària*, but seldom so small as *A. nemeròsa*. Colour sometimes white, sometimes white with the back purple, sometimes cream, yellowish or yellow with their backs paler. Sepals elliptical, rarely ovate. Leaves sometimes smooth, sometimes sparingly pilose, sometimes clothed with long crowded silky hairs; rising before or with the flowers, rarely afterwards. Stature variable, 1 to 2 feet, but when growing on the tops of the Alps, scarcely a hand high.

Var. α, màjor (Lam. dict. 1. p. 165.) flowers large, white, rather purplish on the outside; sepals elliptical; leaves smoothish or a little villous, expanding before the flower. Sims. bot. mag. t. 2007. An. alpìna, Vill. daup. 4. p. 726. An. apiifòlia, Hop. herb. val. D. C. fl. pan. ed. 3. vol. 4. p. 881. Flore plèno, double-flowered variety. An. alpina. *var. γ*, Lap. abr. pyr. 308.

Var. β, millefoliàta (D. C. prod. 1. p. 17. Bert. amœn. 374.) flowers large, white, purplish outside; sepals elliptical; leaves rising before the flowers; segments lanceolate acute.

Var. γ, *micrántha* (D. C. prod. 1. p. 17.) flowers small, white, outside purplish; sepals elliptical; leaves smoothish, expanding before the flower. An. alpìna, Jacq. fl. aust. t. 85. An. Baldénsis, Lam. dict. 1. p. 614, but not of Lin. An. alpìna, α Willd. sp. 2. p. 1275. β fl. fr. ed. 3. vol. 4. p. 881.

Var. δ, *flavéscens* (D. C. prod. 1. p. 17.) flowers large, yellow, outside paler; sepals elliptical; leaves sparingly villous, expanding before the flower. An. apiifòlia, Scop. carn. No. 663. Jacq. misc. 2. p. 47. t. 4. An. myrrhidifòlia β, Vill. dauph. 4. p. 727.

Var. ε, *nivàlis* (D. C. prod. 1. p. 18.) flowers middle sized, outside purplish; sepals elliptical; leaves very villous, expanding with the flower and after it; scape dwarf.

Var. ζ, *intermèdia* (D. C. prod. 1. p. 18.) flowers large, yellow, outside paler; sepals elliptical; leaves very villous, springing up with the flower or before it.

Var. η, *sulphùrea*, (D. C. prod. 1. p. 18.) flowers middle sized, outside rather paler; sepals ovate; leaves very villous, rising with or before the flower. Native also of North America, on the eastern declivities of the Rocky Mountains. (Hook.) An. sulphùrea, Lin. mant. 78. An. apiifòlia, Willd. spec. 2. p. 126. Flowers white, with a purplish tinge at the base.

Alpine Wind-flower. Fl. July. Clt. 1658. Pl. $\frac{1}{2}$ foot.

12 AN. INTEGRIFÒLIA; plant densely clothed with villi; root woody, fusiform; leaves all radical, ovate, entire; petiole rather broad very villous at the base; scape much shorter than the leaves; involucrum wanting; sepals numerous about 15, linear, villous on the back thrice as long as the stamens. ♃. F. Native of Peru on the Andes. Flower solitary, large, purple. This very remarkable plant will perhaps form a distinct genus with the *Hepática integrifòlia* of D. C. from the want of the involucrum.

Entire-leaved Wind-flower. Pl. $\frac{1}{8}$ foot.

SECT. III. PULSATILLOÌDES (from *Pulsatilla* and εἶδος, *eidos*, resemblance; plants resembling Pulsatillas, *which see.*) D. C. syst. 1. p. 195. prod. 1. p. 18. Cariopsides very hairy. Calyx of 15—20-sepals. Leaves of involucre 2 or 3, sessile, cut at the top.

13 AN. CAPE'NSIS (Lin. sp. 764.) leaves biternate, stiff, smooth, segments wedge-shaped, toothed at top. ♃. G. Native of the Cape of Good Hope, in stony places on the declivities of mountains. Atragène Capénsis, Lin. spe. 764. Andr. bot. rep. t. 9. Sims, bot. mag. t. 716. Clématis Capénsis, Poir. suppl. 2. p. 296. Pulsatílla Africàna, Herm. Root black. Leaves coriaceous, smooth, young ones somewhat villous. Sepals 13—18, oblong, bluntish, silky-villous on the outside and at the margins, smooth, purplish inside. Stamens 20—25, outer ones shortest. Ovaries 10—15, oblong. Styles short, smooth. Fruit unknown.

Cape Wind-flower. Fl. Mar. April. Clt. 1795. Pl. $\frac{1}{2}$ foot.

14 AN. TENUIFÒLIA (D. C. syst. 1. p. 196.) leaves triternate, stiff, smooth; segments pinnate-parted; lobes linear-filiform. acute, entire. ♃. G. Native of the Cape of Good Hope. Atragène tenuifòlia, Lin. fil. suppl. 270. Willd. spe. 2. p. 1286. Atragène ténuis, Thunb. fl. jap. 239. Clématis tenuifòlia, Poir. suppl. 2. p. 298. Leaves of *Knowltònia daucifòlia*. Flowers of *Anemòne Capénsis*. Lower leaves almost radical, stalked. Stem erect, somewhat flexuous, terete, villous. Leaflets of involucre oblong, erect, acute, villous. Flowers one-half smaller than those of *An. Capénsis*. Sepals 7—9, oblong, obtuse, silky outside. Styles smooth, short.

Thin-leaved Wind-flower. Pl. 1 foot.

SECT. IV. ANEMONA'NTHEA, (from ανεμος *anemos*, ανθος *anthos*, a flower; that is to say, the true wind-flower. *See Anemone.*) D. C. syst. 1. p. 196. prod. 1. p. 18. Cariopsides tailless, (f. 6. *c.*) egg-shaped. Pedicels solitary, or in pairs, all leafless and 1-flowered. Leaflets of involucre sessile (f. 6. *a.*) or stalked.

§ 1. *Leaves of involucre sessile (f. 6. a.) Trunk of root egg-shaped tuberous. (f. 6.)*

15 AN. CORONA'RIA (Lin. spe. 760.) leaves ternate; segments multifid; lobules linear, mucronated; leaves of the involucrum sessile, multifid; sepals 6, oval, approximate. ♃. H. Native of sub-humid pastures in the south of France, Montpelier, Provence, Nice; Italy, about Rome, &c.; Greece, Archipelago, Aleppo; Troas, at the tomb of Ajax (E. D. Clarke). Lam. illus. about t. 496. f. 1. Sims, bot. mag. 841. Fl. græc. 514. An. horténsis ect. Weinm. Phyt. 1. p. 50 and 51, t. 119 to 128. An. œnánthe Ucria in Rœm. arch. 1. A. p. 69.

The varieties of this species are very common and graceful ornaments in gardens. Leaves finely or broadly dissected. Flowers purple, blue, violet, lilac, yellowish, white, or variegated, single or double; sepals oval or orbicular. *See* Weinm. figures cited above.

Anemòne coronària is a well known florist flower, valued for its hardy nature, and also because it will flower at almost any season, according to the time the roots are kept out of the ground, and the season when they are replanted. Many new varieties have been raised from seed, but they are not named by florists, as in the case of Tulips and Pinks. The prevailing colours are red, white, and blue; and semi-double flowers are in nearly as much repute as double ones. A root which has remained in the ground two or three years will attain a great breadth. They are increased by dividing the roots. The soil preferred by the Anemòne is a fresh loam rather heavy than light. The usual time of planting is in October, covering the roots three inches; but to have earlier bloom, they may be planted in the beginning of September, and to have bloom every month in the year, plant every month. The finer sorts require protection from violent storms and excessive light and heat; but many varieties do exceedingly well in borders. A very severe winter will destroy the roots if the surface is not mulched, but the Anemòne is considerably hardier than the garden Ranúnculus.

In order to obtain new varieties, seeds should be saved from fine single or semi-double kinds; and sown in shallow pots, or boxes filled with light rich earth, in August, covering them a quarter of an inch thick with the same kind of earth, and when the plants rise, care should be taken to protect them from the frost. In the following season, when their leaves begin to decay, they should be taken up and dried, and afterwards planted out in borders in the same manner as the old roots; and in the following summer they will produce flowers.

Garland or Garden Wind-flower. Fl. Ap. My. Clt. 1596. Pl. $\frac{3}{4}$ ft.

16 AN. PUSÍLLA (D. C. syst. 1. p. 197.) leaves ternate; segments multifid; lobules linear, mucronated; leaves of involucrum sessile, cut at top: sepals 6, oblong, distant. ♃. H. Native of the island of Cyprus. Deless. icon. sel. 1. t. 12. Root tuberous, the size of a nut. Flower erect, pale purple. Sepals 6, rarely 4-5. Carpels woolly, disposed into an oval-oblong head. Very near *An. Coronària*, and perhaps only a variety of it.

Small Wind-flower. Fl. ? Pl. $\frac{1}{2}$ foot.

17 AN. PAVONÌNA (D. C. syst. 1. p. 197.) leaves 3-parted; lobes cuneated, deeply toothed; leaves of the involucrum sessile, oblong, entire, or somewhat toothed; sepals 10-12, lanceolate, very acute. ♃. H. Native of Gascony, in vineyards near the river Adour; in Provence; about Olbia, and Nice. Flowering in the summer.—Clus. hist. 1. p. 261, 262. f. 1. and 2. Mor. oxon. sect. 4. t. 35. f. 1. Very rarely seen with single flowers, but the double variety is to be found common enough in gardens under the names of *An. Œil de Paon*, *An. Candiote*, *An. de Crete*, &c. Easily distinguished from *An. Coronària* by its very acute sepals. Flowers variable in colour.

Var. β, *fúlgens* (D. C. prod. 1. p. 18.) leaves tri-parted; lobes

cuneated, deeply toothed; leaves of the involucrum sessile, oblong, entire, or a little toothed; sepals oblanceolate, broadest at apex, tapering to the base. An. fúlgens, Gay. ined, An. hortênsis, Thor. chl. land, 238; An. pavonìna, Lois. not. 87. Flowers larger than in var. *a*.

Peacock Wind-flower. Fl. April. May. Clt.? Pl. 1 foot.

18 An. stella'ta (Lam. dict. 1. p. 166.) leaves 3-parted; lobes cuneated, deeply toothed; leaves of the involucrum sessile, oblong, entire, or a little toothed; sepals 10, 12, oblong bluntish. ♃. H. Native of Germany, France, Switzerland, Italy, Rome, and the Levant, in hedges and bushy places. Flowering in winter and summer. An. hortênsis, Lin. spe. 761. Curt. bot. mag. 123. Fl. græc. 515. An. versícolor, Sal. prod. 371. Sepals narrow, oblong, or broad oval, but always blunt. Flowers purple, or rose, or whitish, never truly yellow.

Starry Wind-flower. Fl. April, May. Clt. 1597. Pl. ¾ ft.

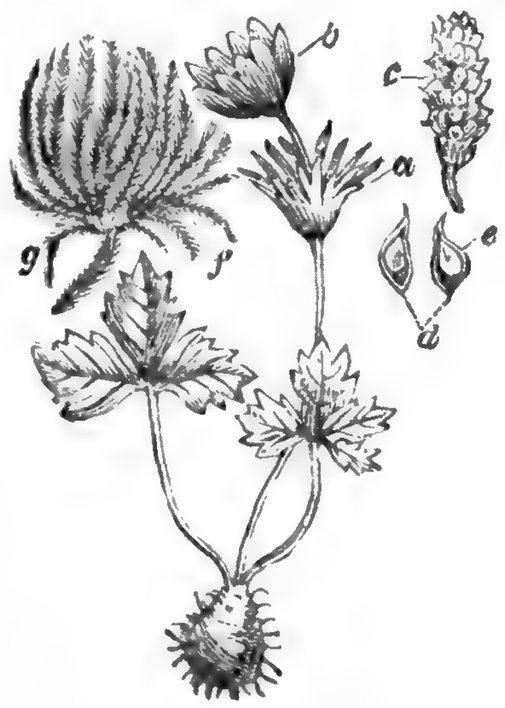
19 An. palma'ta (Lin. spe. 758.) leaves cordate, suborbicular, bluntly 3-5-lobed, toothed; leaves of the involucrum sessile, trifid; sepals 10-12, oblong, obtuse. ♃. H. Native of humid and uncultivated places about Algiers; Portugal, at the Tagus, &c.; Spain, near Madrid and Valencia; Provence, near Olbia. Andr. bot. rep. 172. Ker. bot. reg. 200. Involucrum 1 very rarely 2-flowered. Differing from *An. stellàta* at first sight by its yellow flowers.

Var. β, flore plèno (Clus. hist. 1. p. 249. f. 1.) flowers double.

Pulmated-leaved Wind-flower. Fl. My. Ju. Clt. 1597. Pl. ½ to 1 ft.

20 An. decape'tala (Lin. mant. 79.) leaves 3-parted: lobes grossly toothed, or somewhat cut; leaves of involucrum sessile, twice trifid, with linear lobes (f. 6. *a*.); sepals 10-12, oblong obtuse. (f. 6. *b*.) ♃. G. Native of Brasil about Monte Video, and in the province of Rio Grande do Sul, near the town of St. Francisco de Paulo; Peru and Chili in woods. An. trilobàta Juss. ann. mus. 3. p. 247. t. 21. f. 3., An. macrorrhìza, Domb. herb. Scapes naked. Flower solitary, white, blueish on the outside.

FIG. 6.



Ten-petalled Wind-flower. Fl. May. Pl. ½ foot.

21 An. Carolinia'na (Walt. fl. car. 157.) leaves ternate, with 3-parted or cut, acutely-toothed lobes; leaves of the involucrum trifid, with cut lobes; sepals 10-12, linear. ♃. H. Native of Carolina, and on the banks of the river Missouri. A. tenélla, Pursh. fl. amer. sept. 2. p. 386. Scape 1-flowered. Involucrum 3-leaved. Flower on a long pedicel; sepals small, purplish, pubescent on the outside. Fruit woolly, mucronate. A very slender and delicate plant.

Carolinian Wind-flower. Fl. May, Jun. Clt. 1824. Pl. ¾ ft.

22 An. triterna'ta (Vahl. symb. 3. p. 74. t. 65.) leaves triternate: segments 3-toothed; leaves of the involucrum sessile, cleft into many setaceous lobes; sepals 10-12, oblong, obtuse. ♃. G. Native of Brasil about Monte Video, and at the mouth of the river Plate, as well as on the mountains called Cerro-Aspro, and of Peru. Anemòne, Lam. illust. t. 496. f. 3.; An. fumariæfòlia, Juss. ann. mus. 3. p. 247. t. 20. f. 2. Root and habit that of *An. decapétala*. Flowers white. Fruit woolly, disposed into an oblong head. St. Hil. fl. bras. p. 5.

Triternate-leaved Wind-flower. Fl. Oct. Nov. Pl. ¾ foot.

23 An. biflòra (D. C. syst. 1. p. 201.) leaves ternate; segments divided into linear blunt cut lobes; leaves of the involucrum 2, sessile, many-parted; pedicels in pairs, one of them bearing a two-leaved involucel. ♃. H. Native of the Levant. Scape round length of petioles. Flower somewhat drooping, yellow, of 5 oval, oblong, obtuse sepals, which are pubescent outside, and a little longer than those of *An. ranunculoìdes*. Stamens few in the flower with two involucrums, but numerous in the flower with one involucrum. Ovaries many in the first.

Two-flowered Wind-flower. Pl. ½ foot.

24 An. formòsa (Clark. ex Spreng. neu. entd. 3. p. 201.) radical leaves thick, 3-parted, roundish fan-shaped, somewhat 3-lobed, acutely toothed; leaves of involucrum 3, 3-parted: segments lanceolate; sepals broadly ovate. ♃. H. Native of Asia Minor. A. biflòra var. β, trifòliata, D. C. prod. 1. p. 19. Petioles and Scapes much shorter than in *An. biflòra*. Flowers on long pedicels, white or purplish. Carpels woolly, few.

Shewy Wind-flower. Pl. ½ foot.

§ 2. *Leaflets of involucrum stalked. Trunk of roots egg-shaped tuberous.*

25 An. Apenni'na (Lin. spe. 762.) leaves triternate; segments lanceolate, deeply-toothed, acute; leaves of the involucrum stalked, trifid, deeply cut; sepals 12-14, oblong, obtuse. ♃. H. Native of England in Wimbledon park; also near Harrow; near Lutonhoe, Bedfordshire; Berkhampstead, Herts; near Brussels; in Provence; Apennines, Italy; and on the mountains of Caucasus. Hook. fl. lond. 6. t. 35. Smith, fl. græc. 581. eng. bot. 1062. Flower erect, blue. Roots black.

Var. β, ranúnculus nemoròsus, &c. fl. álbo. Tourn. cor. 20. Flowers white.

Var. γ, párvula (D. C. prod. 1. p. 19.) leaves almost sessile; flowers blue. Native of Caucasus.

Apennine Wind-flower. Fl. Mar. Apr. England. Pl. ½ ft.

§ 3. *Leaflets of involucrum stalked. Trunk of roots cylindrical, slender and elongated, but can scarcely be called tuberous.*

26 An. cæru'lea (D. C. syst. 1. p. 163.) leaves of the involucrum, 3-5-cleft on short stalks, with deeply-toothed segments; sepals 4-5, oval. ♃. H. Native of Siberia about Zmeof. Deless. icon. sel. 1. t. 14. Flowers blue or white. Stems 1 or 2-flowered.

Blue Wind-flower. Fl. May, June. Clt. 1826. Pl. ½ foot.

27 An. Urale'nsis (D. C. prod. 1. p. 19.) leaves of involucrum on short stalks, ternate; segments linear, deeply-toothed; sepals 5-6, oval-oblong. ♃. H. Native of the Ural mountains. Plant small, almost the habit and size of *An. cærùlea*. Flowers tinged with blue.

Ural Wind-flower. Fl. May. Clt. 1824. Pl. ¼ foot.

28 An. Balde'nsis (Lin. mant. 78.) leaves biternate; segments many-parted; lobes linear; leaves of the involucrum on short stalks, multifid; sepals 8-10, oblong-oval. ♃. H. Native on Mount Baldo, Alps of Austria, Tyrol, Carniola, Switzerland, Piedmont, Dauphiny, Provence, and, according to Hooker, in North America in arid places on the eastern summits of the Rocky Mountains. All. ped. No. 1928. t. 44. f. 3. and t. 67. f. 2.; Vill. dauph. 3. p. 723 t. 49; An. alpìna, Scop. carn. ed. 2. No. 662. t. 26, not of Lin. An. fragífera, Murr. syst. 510; Jacq. icon. rar. 1. t. 103. Scape woolly, ascending or erect, 1-flowered. Flowers white, clothed with pressed hairs on the outside, and reddish, tinged with blue. Root fusiform. (Hook.) Hooker considers this and the two preceding to be identical.

Mount-Baldo Wind-flower. Fl. May. Clt. 1798. Pl. ½ ft.

29 An. parviflòra (Mich. fl. bor. amer. 1. p. 319.) leaves 3-parted; lobes cuneated, trifid, and crenate at the apex; leaves of the involucrum sessile, 3-parted, with the lobes toothed at the apex; sepals 6, oval-oblong. ♃. H. Native of North America at the mouths of the rivers and rivulets falling into Hudson's Bay; from the Rocky Mountains to the Arctic sea in limestone tracts and barren grounds; Labrador, and Newfoundland. An.

cuneifòlia, Juss. ann. mus. 3. p. 248, t. 21. f. 1. An. tenélla, Banks, herb. A. boreàlis, Richards. in Frankl. 1st. journ. ed. 2. p. 22. Flowers small, white; sepals clothed with pressed hairs on the outside. Fruit woolly, acuminated, collected into a globose head. Like *An. decapétala* and *palmàta*.

Small-flowered Wind-flower. Fl. Apr. Ju. Clt. 1824. Pl. 1 ft.

30 AN. NEMORÒSA (Lin. spe. 762.) leaves ternate; segments trifid, deeply-toothed, lanceolate acute; leaves of involucrum stalked; sepals 6, elliptical. ♃. H. Native throughout Europe in groves, hedges, hills, bushy and shady places. North America, from Canada to Carolina. Fl. dan. t. 549; Smith eng. bot. 353; Schkuhr. handb. t. 150. Colour of flower commonly white, sometimes red, lilac, purple or blue, never yellow. Flowers single or double. Leaves of involucrum in threes or fives, with parted segments. In fine clear weather the blossoms are expanded and face the sun; but in the evening and wet weather they are closed and hang down. This plant is acrid and in some degree poisonous. Goats and sheep eat it; but horses, cows, and swine refuse it. It is now disused in medicine; but Chomel says, that the leaves bruised with the flowers, and applied twice a day to the head, have, in a little while, healed the *Tinea;* and it is also said that a blister prepared of these, when recent, serves to remove intermittent fevers; but it should be cautiously used.

Var. β, quinquefòlia (Lin. spe. 769.) leaves somewhat 5-parted. Native in North America, from Canada to the south of Lake Winepeg and elsewhere, and Siberia. Hardly differing from the European plant, unless that the lateral lobes of the leaves of this plant are often profoundly 2-parted; but this is also sometimes observed in European plants.

Var. γ, flòre cærùleo is evidently different from *An. Apennìna* by its root being elongated not tuberous; sepals 6, elliptical not 12-15, linear, oblong.

Grove or Wood Wind-flower. Fl. Mar. May. Brit. Pl. ½ ft.

31 A. DELTOÌDEA (Dougl. mss. in Hook. fl. bor. amer. 6. t. 3. A.) radical leaves? those of the involucrum 3, sessile ovate-acuminated, deeply-serrated, never cut: stem pilose; sepals 5-6, obovate. ♃. H. Native of North America, in thick shady woods on the Columbia river, near its confluence with the sea. Flowers large, solitary, white. Allied to *An. nemoròsa*, but the leaves of the involucre are never divided.

Deltoid-leaved Wind-flower. Pl. ¾ foot.

32 AN. ISOPYROÌDES (Jus. ann. mus. 3. p. 249. t. 20. f. 3.) leaves biternate; segments deeply 3-toothed, somewhat cuneated; leaves of the involucrum stalked, ternate, with the lateral segments bifid; middle one trifid; sepals 5, oblong. ♃. H. Native of Siberia. Flowers 1 or 2. Sepals narrow, elongated, oblong. Very like *An. nemoròsa*.

Isopyrum-like Wind-flower. Pl. ½ foot.

33 AN. FISCHERIA'NA (D. C. prod. 1. p. 20.) leaves biternate, those of the involucrum on very short stalks; lobes elongated, acuminated; pedicels 2, pubescent: sepals 5, elliptical. ♃. H. Native of Siberia, near Salair. Flowers white, nearly the same as those of *An. isopyroìdes*. Carpels villous, pubescent.

Fischer's Wind-flower. Pl. ½ foot.

34 AN. LANCIFÒLIA (Ph. fl. amer. sept. 2. p. 386.) leaves all stalked, ternate; segments lanceolate, crenate-toothed; sepals 5, ovate-acute. ♃. H. Native of Pennsylvania and Virginia, on high mountains in a boggy soil. Like *An. trifòlia;* but differing from it in the leaflets being lanceolate, not ovate-lanceolate, and crenate-toothed, not truly toothed, with the flowers a little larger. Sepals always 5, more acute. Fruit ovate. Style short, hooked.

Lance-leaved Wind-flower. Fl. May, Jul. Clt. 1823. Pl. ¼ ft.

35 AN. TRIFÒLIA (Lin. spe. 762.) leaves all stalked, ternate; segments ovate-lanceolate, acute, toothed; sepals 5, elliptical, obtuse. ♃. H. Native of sub-mountainous groves in France, Piedmont, Carniola, Carinthia, Siberia. Sturn. deutsch. fl. icon. —Mor. oxon. 2. sect. 4. t. 25. f. 1. Roots horizontal, white. Scapes 1-flowered. Flower white, erect, of 5-6-sepals. Ovaries 20—25, pubescent. Stamens often beyond 100 in number. Like *An. nemoròsa*.

Three-leaved Wind-flower. Fl. Apr. May. Clt. 1597. Pl. ½ ft.

36 AN. MÍNIMA (D. C. syst. 1. p. 206.) leaves of the involucrum stalked, 3-parted; lobes ovate, acuminated, and serrated at the top; sepals 5, oval-oblong, obtuse. ♃. H. Native of the Alleghany mountains, Virginia. Scape 1-flowered. Flowers small, white; sepals smooth. Ovaries few, pubescent. Like *A. trifòlia*, but three times smaller.

Least Wind-flower. Fl. April, May. Pl. ¼ foot.

37 AN. COMMERSONIA'NA (Richard ex. Spreng. syst. 2. p. 662.) leaves of involucrum 2, stalked opposite, and are, as well as the rest, 3-parted, with multifid segments, all villous as well as the stem; sepals 8. ♃. F. Native of the Straits of Magellan. A. multifida var. γ, uniflora. D. C. prod. 1. p. 21. Deless. icon. sel. 1. t. 17. Flowers yellowish.

Commerson's Wind-flower. Pl. ¼ foot.

38 AN. RANUNCULOÌDES (Lin. spe. 762.) radical leaves 3-5 parted; segments subtrifid, deeply toothed; those of the involucrum on short stalks, 3-parted, deeply toothed; sepals 5-6 elliptical. ♃. H. Native of Middle and Northern Europe, in meadows and mountains, in hedges and groves; England, near King's Langley, Herts; and Wrotham, Kent; near Abbot's Langley. Fl. dan. t. 140. Smith, eng. bot. 1484. Lodd. bot. cab. 556. An. lùtea, Lam. fl. fr. 3. p. 318. Flowers generally solitary, seldom in pairs, single or double, usually yellow, but in the Pyrenean variety purple. Lobes of involucrum usually deeply-toothed, rarely entire.

Crowfoot-like Wind-flower. Fl. Mar. Apr. England. Pl. ¼ ft.

39 AN. REFLE'XA (Steph. in Willd. spec. pl. p. 1282.) leaves ternate; segments subtrifid, toothed at apex; those of the involucrum stalked; pedicles solitary; sepals 6, linear obtuse, reflexed. ♃. H. Native of Siberia. Deless. icon. sel. 1. t. 15. Flower 3-times smaller than in *An. ranunculoìdes*, yellow.

Reflexed-sepalled Wind-flower. Fl. Mar. Apr. Clt. 1818. Pl. ¼ ft.

40 AN. RICHARDSÒNII (Hook in Frank. 1st. journ. ed. 2. app. p. 21. fl. bor. amer. p. 6. t. 4. A.) plant somewhat pilose; leaves kidney-shaped, 3-5-parted; lobes somewhat trifid and acutely toothed; leaves of the involucrum roundish-cuneate, sessile, trifid and toothed; sepals 6, spreading; carpels compressed, smooth, terminated by a long deflexed, hooked beak. ♃. H. Native of North America, in Hudson's Bay, and the Rocky Mountains, in barren and wet mossy ground, and of Unalaschka. An. ranunculoìdes var. Richards. in Frankl. 1st. journ. ed. 1. app. 740. An. Arctica Fisch. MSS. Flowers yellow.

Richardson's Wind-flower. Pl. ½ foot.

§ 4. *Leaflets of involucrum stalked. Roots fascicled, fibrous.*

41 AN. SYLVE'STRIS (Lin. spe. 761.) leaves ternate or quinate, hairy beneath; segments deeply-toothed at top; those of the involucrum stalked; pedicel solitary; sepals 6, elliptical; fruit very hairy. ♃. H. Native of groves and hedges in France, north of Italy, Germany, Caucasus, Siberia, on the banks of the Oby about Barnaoul. Bull. herb. t. 59. Curt. bot. mag. 54. Schkuhr. hand. t. 150. Flower large or small, of 5 or 6 sepals, white, greenish or purplish, single or double. Receptacle of fruit, globose.

Var. β, álba mìnor (Bauh. pin. 176.) Native of Siberia.

Wild Wind-flower. Fl. April, May. Clt. 1596. Pl. ½ ft.

42 AN. A'LBA (Juss. ann. mus. 3. p. 248. t. 20. f. 1.) leaves ternate or quinate; segments deeply-toothed at top; those of the involucrum stalked; pedicel solitary; sepals 5, obovate; fruit very hairy. ♃. H. Native of Dauria about Tschita and Barnaoul, and in fields at the river Oby, as well as in the Crimea. Sims, bot. mag. 2167. An. Ochoténsis, Fisch. hort. gorenck. 47.

Differing from *An. sylvéstris* by its smaller stature, as well as in having 5 not 6 sepals shorter, rounder, and very blunt. The specimen collected in the Crimea by Dr. Clarke has its stem and petioles very villous.

White-flowered Wind-flower. Fl. June. Clt. 1820. Pl. ½ ft.

SECT. V. ANEMONOSPE'RMOS, (from *ανεμος, anemos*, the *wind*, and *σπερμα, sperma*, a *seed*; application the same as Pulsatilla, *which see.*) D. C. syst. 1. p. 208. prod. 1. p. 21. Cariopsides somewhat compressed, tailless; pedicels numerous, rising from the involucrum, 1-flowered, one of which is leafless, the rest furnished with 2-leaved involucels.

43 AN. VIRGINIA'NA (Lin. spe. 761.) leaves ternate; segments trifid, acuminated, deeply-toothed; those of the involucrum and involucels stalked; sepals 5, elliptical. 4. H. Native of North America, in woods and on rich banks of rivers, from Canada to Carolina. Hook. fl. bor. amer. 8. t. 4. B. Gært. fruct. 1. p. 357. t. 74.—Herm. par. p. 18. with a figure. An. hirsùta, Mœnch. meth. 105. Herb erect, tall, pubescent. Peduncles 3-4, much elongated, middle one naked, sometimes a foot high, lateral ones bearing 2-leaved involucels; pedicels often rising in pairs from the involucel. Flowers small, pale, yellowish green, or pale purplish; sepals silky-pubescent on the outside. Carpels compressed, woolly, collected into an oblong head.

Virginian Wind-flower. Fl. May, June. Clt. 1722. Pl. 2 ft.

44 AN. MULTÍFIDA (Poir, suppl. 1. p. 364. D. C. syst. 1. p. 209.) radical leaves ternate; segments cuneated, 3-parted multifid, with linear lobes; those of the involucrum and involucel multifid on short petioles; sepals 5-10, elliptical, obtuse. 4. H. Native of the Straits of Magellan, and the Andes of Peru. Deless. icon. sel. 1. t. 16. Root hard, woody. Herb a hand high, erect, hairy. Peduncles 3, 1-flowered, one of which is naked and earlier, the other two longer, and bearing 2-leaved multifid involucels on their middle. Flowers small, from whitish-yellow to a citron-colour; sepals oval-oblong, villous on the outside. Style short, hooked.

Multifid-leaved Wind-flower. Fl. Jun. Jul. Clt. 1824. Pl. ½ ft.

45 AN. HUDSONIA'NA (Richards. in Frankl. 1st. journ. ed. 2. app. p. 22.) villous; radical leaves ternate, with many-parted segments and linear lobes; those of the involucrum are ternately decompound on short stalks; peduncles 2, bearing involucels; sepals 5-8, ovate, acutish. 4. H. Native of North America, from Hudson's Bay to the western declivities of the Rocky Mountains, and several other parts of North America. An. multifida *var. β*, Hudsoniàna D. C. syst. 1. p. 209. prod. 1. p. 21. Deless. icon. sel. 1. t. 17. A. multifida. Hook. fl. bor. amer. p. 6. Leaves ternately divided; segments cuneate, 3-parted, jagged; lobes linear acute. (Hook.) Flowers, small, white, purple, yellow, or deep red. (Hook.)

Var. β, uniflòra, stem 1-flowered. A. multifida *var. γ*, uniflora, D. C. syst. 1. p. 209. Hook, fl. bor. amer, p. 6.

Var. γ, sanguìnea (Richards. in Frank. 1st. journ. ed. 2. app. p. 22.) flowers deep red. Native of the Gulf of St. Lawrence, from the shores of Hudson's Bay to the western declivities of the Rocky Mountains, and from the United States to near the shores of the Arctic Sea. All the varieties may be found in the last-mentioned habitats. A. multífida, *var. γ*, sanguìnea. Hook, fl. bor. amer. p. 6.

Hudson's-Bay Wind-flower. Fl. Ju. Jul. Clt. 1826. Pl. ½ ft.

46 AN. PENNSYLVA'NICA (Lin. mant. 247.) plant rather pilose, leaves 3-parted; segments bipartite or trifid; lobes lanceolate, deeply serrated; those of the involucrum and involucels sessile; sepals 5, elliptical, blunt; carpels villous, compressed, marginate, ending in a long style, which is sometimes hooked at the apex. 4. H. Native in North America in meadows and on the borders of rivers, from the United States to near the mouth of the Mackenzie river, and from Hudson's Bay to the Pacific, as well as on the borders of fountains in Siberia. Hook. fl. bor. amer. 8. t. 3. B. An. irregulàris, Lam. dict. 1. p. 167; An. aconitifòlia, Mich. fl. bor. amer. 1. p. 320.; An. boreàlis Richards. Flowers large, white, anthers yellow. Root creeping.

Var. β, Laxmánni (D. C. syst. 1. p. 210.) involucrum 2-leaved; lateral pedicles involucelled at base. Perhaps a distinct species. The flower at first sight has the appearance of *An. narcissiflòra*, but upon a more attentive examination it is seen to belong to *An. Pennsylvánica.*

Pennsylvanian Wind-flower. Fl. My. Ju. Clt. 1766. Pl. 1½ ft.

47 AN. DICHO'TOMA (Lin. amœn. 1. p. 155.) leaves 3-parted; lobes oblong, deeply toothed at top; those of the involucrum sessile, all 2-leaved; sepals 5, elliptical; carpels smooth. 4. H. Native of Siberia in moist woods and pastures; Dauria, near Tschita; North America, from Canada to New York. Lin. fil. decad. 29. t. 15. Root creeping. Fruit at last smooth. Flowers white with a tinge of red on the under side, smaller than those of the foregoing. Lobes of leaves oblong. Pedicels many, usually bifid. Like *An. Pennsylvánica*, but differing in its stature, being more slender, with a smooth surface. Perhaps the American plant is exactly the same as the Siberian one. Dr. Hooker considers this and the preceding identical, but at present we consider it most proper to keep them separate.

Dichotomous Wind-flower. Fl. My. Ju. Clt. 1768. Pl. 1½ ft.

48 AN. MEXICA'NA (H. B. et Kth. nov. gen. et spe. am. 5. p. 41.) leaves ternate; segments oval, somewhat cuneated, deeply toothed at the apex; leaves of the involucrum two, sessile, deeply toothed; sepals 5; ovaries pubescent. 4. H. Native of Mexico near Santa-Rosa. Herb somewhat villous. Lateral segments of leaves usually bifid. Involucels of lateral flowers small. Flowers white, very like those of *An. Pennsylvánica.*

Mexican Wind-flower. Fl. May, June. Pl. 1 foot.

49 AN. HELLEBORIFÒLIA (D. C. syst. 1. p. 211.) leaves pedate: segments smooth, somewhat coriaceous, stalked, cuneated, trifid; lobes serrated, acute; involucrum and involucels 3-leaved and almost sessile; ovaries smooth. 4. G. Native of Peru about Huassa-Huassi. Lobes of leaflets sometimes somewhat trifid, as well as those of the involucrum. Stem round, fistular. Flowers white; sepals 5-oval. Carpels 15-20, oval, smooth. Style hooked. A very shewy and distinct plant.

Hellebore-leaved Wind-flower. Pl. 1½ foot.

50 AN. VITIFÒLIA (Buch. in herb Lamb. D. C. syst. 1. p. 210.) leaves large, cordate, 5-lobed, beneath as well as the stems clothed with white wool; lobes broadly ovate, acute, cut and crenate; those of the involucrum stalked, white-woolly underneath, smooth above, bluntly cordate, 5-lobed, and are as well as involucels 3-leaved; ovaries smooth. 4. F. Native of Upper Nipaul at Suembu. Sepals 8, oval, oblong, villous on the outside, and purplish inside; anthers copper-coloured. Carpels small, villous, collected into a round head.

Vine-leaved Wind-flower. Fl. July. Pl. 2 foot.

51 AN. RIVULA'RIS (Buch. in herb. Lamb. D. C. syst. 1. p. 211.) leaves villous, as well as petioles, 3-parted; lobes cuneated, trifid; lobules cut, acutely toothed; those of the involucrum 2-sessile, 3-parted; lobes lanceolate, acute, serrated, somewhat pinnatifid at apex. 4. F. Native of Nipaul about Chitlong, along the banks of rivulets. Pedicels 3, one of which is naked. Sepals 5, oval, naked, white, smooth. Carpels smooth, with a revolute beak.

Rivulet Wind-flower. Fl. April. Pl. 1 to 2 feet.

52 A. OBTUSÍLOBA (D. Don. fl. nep. p. 194.) leaves 3-lobed, cordate, and are, as well as petioles, very villous; segments broadly cuneated, and deeply crenate; involucrum 3-leaved, trifid; lobes linear, oblong, rounded at the apex, toothed; sepals 5, obovate; carpels beaked, pilose. 4. F. Native of Nipaul

at Gosaingsthan. Stem erect, villous. Leaves with very broad cuneated, 3-lobed, deeply crenate, very blunt segments. Peduncles 2-3, one-flowered, villous, naked, or the lateral ones are furnished with 2 membranous bracteas. Flowers cream-coloured, about the size of those of *A. dichótoma*.

Blunt-lobed Wind-flower. Pl. 1 foot.

53 A. elonga'ta (D. Don. prod. fl. nep. p. 194.) leaves 3-parted, and are, as well as petioles, nakedish; segments wedge-shaped, deeply lobed or toothed, connate at the base; peduncles three, simple or trifid, pilose; sepals 5, oval; carpels beaked, smooth. ♃. F. Native of Nipaul at Gosaingsthan. Flowers cream-coloured.

Elongated Wind-flower. Pl. 1 foot.

Sect. VI. Omaloca'rpus, (ομαλος, *omalos*, smooth; καρπος, *carpos*, a fruit; because the carpels are smooth) D. C. syst. 1. p. 212. prod. 1. p. 21. Cariopsides compressed, flat, oval, orbicular, smooth, tailless. Pedicels numerous, leafless, 1-flowered, umbelled in the involucrum.

54 An. narcissiflòra (Lin. spe. 763.) radical leaves somewhat villous, palmately 3-5-parted; lobes deeply toothed; lobules, linear, acute; those of the involucrum 3-5-cleft; flowers umbellate. ♃. H. Native throughout the whole of the northern hemisphere in calcareous mountain pastures, particularly in the Pyrenees, Switzerland, Caucasus, Cappadocia, and in the mountains of Siberia, island of Unalaschka, on the western coast of North America and in Canada. Jacq. aust. t. 159. Sims, bot. mag. t. 1170. An. umbellàta, Lam. fl. fr. ed. 11. 3. p. 322, but not of Willd. A very variable species. Stems from a hand to a cubit in height, hairy or smooth. Flowers usually cream-coloured, sometimes purplish on the outside. Umbels generally many-flowered, but sometimes few-flowered, very rarely 1-flowered. Pedicels twice or three times longer than the involucrum, sometimes equal in length, sometimes very short. Sepals 5 or 6, ovate or oval, blunt or acute. Lobes of leaves acute or blunt, more or less profound.

Var. β, *fasciculàta* (D. C. syst. 1. p. 213.) flowers umbellate, almost sessile, fascicled. Native of Cappadocia. Toun. cor. p. 20. voy. 2. p. 245. An. fasciculàta, Lin. spe. 763, not of Vahl.

Var. γ, *monántha* (D. C. syst. 1. p. 213.) flowers solitary or in pairs. An. dùbia, Bell. app. fl. ped. 232. t. 7.

Var. δ? *pedicellàris* (D. C. syst. 1. p. 213.) pedicels many, elongated; radical leaves ternate. Native of Dauria and Siberia.

Var. ε? *frígida* (D. C. syst. 1. p. 213.) pedicels few, elongated; radical leaves smooth, parted into very narrow linear lobes. Native of Siberia.

Var. ζ, *villosíssima* (D. C. prod. 1. p. 22.) flowers few, subsessile; stem very villous. Native of Unalaschka.

Narcissus-flowered Wind-flower. Fl. My. Clt. 1773. Pl. 1 ft.

55 An. umbella'ta (Willd. spec. pl. 2. p. 1284, not of Lam.) radical leaves 3-5-parted; segments trifid, very entire, densely villous at their margins; those of the involucrum undivided; flowers umbellate. ♃. H. Native of Cappadocia on mountains. Deless. icon. sel. 1. t. 18; An. fasciculàta, Vahl. symb. 3. p. 74. not of Lin. Scapes clothed with very long white hairs. Leaves of involucrum 3-parted; lobes entire. Pedicels 2-3, 1-flowered, longer than the involucrum. Sepals white, 5, oval obtuse, villous on the outside.

Umbellated-flowered Wind-flower. Fl.? Pl. ½ foot.

56 A. polya'nthes (D. Don. prod. fl. nep. p. 194.) leaves on long stalks, cordate, 3-parted, very villous: segments broadly cuneated, 3-lobed, and deeply-toothed; involucre 3-leaved, 3-parted; segments trifid or pinnatifid; peduncles simple umbellate; sepals 5, obovate, and are, as well as the carpels, smooth. ♃. H. Native of Nipaul at Gosaingsthan. Roots grumose. Peduncles 5-6, umbellate. Flowers whitish? Like *A. Narcissiflòra*.

Many-flowered Wind-flower. Pl. 1 foot.

57 An. Sibírica (Lin. spe. 763.) leaves ternate; segments deeply-toothed, ciliated; those of the involucrum on short stalks, ternate; sepals 6, orbicular. ♃. H. Native of Siberia beyond the Baikal. Lobes of leaves linear, crowded, obtuse, entire, hairy. Scapes 1-flowered; involucrum 3-parted, lobed, with lanceolate segments. Segments, when dry, fulvous. Ovaries smooth. Perhaps related to *An. alba*.

Siberian Wind-flower. Fl. June. Clt. 1804. Pl. ½ foot.

Anemones not sufficiently known

58 An Walte'ri (Ph. fl. amer. sept. 2. p. 387.) ♃. H. Native of Carolina. Thalíctrum Caroliniànum, Walt. car. 157. Root tuberous. Stem 1-flowered, naked Leaves palmate on long stalks. Sepals 5. Very like *An. parviflora*.

Walter's Wind-flower. Pl. 1 foot.

59 An. peda'ta (Raf. Schmaltz. in Desv. jour. bot. 1808. v. 1. p. 230.) ♃. H. Native of New Jersey. Stem short, one-flowered. Leaves pedate, 5-parted; lobes jagged; sepals 6.

Pedate-leaved Wind-flower. Pl.?

Doubtful Species.

60 An. Flemme'msis (Scop. ann. hist. nat. tyr. ann. 2 ex fl. aust. 2. p. 41.) ♃. Native of the Alps of Tyrol. Perhaps a variety of *An. alpìna*.

Flemm Wind-flower. Pl.?

61 An. dodecaphy'lla (Krock. fl. sil. 2. p. 235. t. 20.) ♃. H. Native of Silesia. An. decapétala var. β. Gmel. syst. 871.

Twelve-leaved Wind-flower. Pl. 1 foot.

Cult. All the species are shewy flowering plants well worth the cultivator's care; they thrive best in a light loamy soil. Those species belonging to sections *Pulsatílla*, *Preonánthus*, *Anemonospérmos*, and *Omalocárpus*, are either increased by dividing the plants at the root or by seeds: and those belonging to section *Anemonánthea* are either increased by offsets from the roots or by seeds; those of section *Pulsatilloìdes* are greenhouse evergreen herbaceous plants, and grow best in an equal mixture of sand, loam, and peat, but care must be taken not to let them have too much water when in a dormant state. They often produce perfect seeds, by which young plants are readily raised: they will also strike root from cuttings, in the same kind of soil, under a hand-glass.

† *Species belonging to section Pulsatilla, which appear to be only varieties of An. pàtens* and *An. praténsis*.

62 A. interme'dia (Brand. in Schlecht. Linnæa, 3. p. 163, under Pulsatílla,) leaves ternate or pinnate; segments rather coriaceous, terminal ones on long stalks, profoundly 2-3-cleft; lobes cut-serrated; sepals elliptical or lanceolate, clothed with yellowish villi on the outside. ♃. H. Native of Saxony on hills near Dresden. Plant villous. Flowers lilac or violet, rarely blue. Like *An. pàtens*, and perhaps only a variety of it.

Intermediate Pasque-flower. Fl. June, July. Pl. 1 foot.

63 A. propínqua (Brand. l. c. p. 165.) leaves pinnate, with 2 or 3 pair of multifid leaflets and an odd one; lobes narrow, lanceolate. ♃. H. Native of Saxony on hills near Dresden. Sepals 6, elliptical, spreading, pale violet or red, yellowish on the outside. Plant rather villous. Perhaps only a variety of *An. praténsis*.

Related Pasque-flower. Fl. April, May. Pl. 1 foot.

64 An. affìnis (Brand, l. c. p. 166.) leaves pinnate, with 3-4 pair of multifid leaflets and an odd one; lobes linear cut; peduncles drooping; sepals spreading, somewhat reflexed at the apex, elliptical, obtuse. ♃. H. Native of Saxony in woods

near Dresden. Flowers blueish or dark violet. Perhaps a variety of *An. praténsis*.

Allied Pasque-flower. Fl. April, May. Pl. $\frac{3}{4}$ foot.

VII. HEPA'TICA (from ἡπατικος, *hepaticos*, of or relating to the liver. The three lobes of the leaves have been compared to the three lobes of the liver.) Dill. giess. p. 108. t. 5. Lin. hort. cliff. 223. D. C. syst. 1. p. 215. prod. 1. p. 22.

LIN. SYST. *Polyándria, Polygýnia*. Involucrum of 3 entire leaves, in the form of a calyx, close to the flower. Calyx of 6 to 9 petal-like coloured sepals, disposed into two or three series. Stamens and ovaries numerous. Carpels tailless. Small perennial early-flowering evergreen herbs, with 3-7-lobed leaves. Scapes 1-flowered, numerous, rising from the same root.

1 H. TRÍLOBA (Chaix in Vill. dauph. 1. p. 336.) leaves cordate, 3-lobed; lobes quite entire, ovate, acutish; petioles and scapes rather hairy. ♃. H. Native of many parts of Europe in hedges and shady places. Anemòne Hepática, Lin. spe. 758. Oed. fl. dan. 612. Smith, eng. bot. t. 51. fl. græc. 513. Schk. hand. 2. t. 150. Anemòne præ'cox, Sal. prod. 371. Colour of flowers usually blue; found in gardens, but seldom if ever in the fields, with white, brown, flesh-coloured, red, purple, violet, or variegated flowers, but never yellow; single or double. Leaves green, purplish or variegated underneath. All these varieties are designated under names in old books, but here we have thought proper to omit them.

Three-lobed-leaved or common Hepatica. Fl. Feb. April. England. Pl. $\frac{1}{4}$ foot.

2 H. AMERICA'NA (Ker. bot. reg. t. 387.) leaves cordate, 3-lobed; lobes quite entire, roundish, obtuse; petioles and scapes very pilose. ♃. H. Native of North America on the sides of fertile and rocky hills from Canada to Carolina. H. tríloba β. D. C. syst. 1. p. 216; H. tríloba, Ph. fl. amer. sept. 2. p. 391. Var. γ, Hook. Flowers red.

American Hepatica. Fl. Feb. April. Clt. 1800. Pl. $\frac{1}{4}$ ft.

3 H. ANGULÒSA (D. C. syst. 1. p. 217.) leaves palmately 5-lobed; lobes serrated. ♃. H. Native of? formerly cultivated in the Physic garden, Paris. An. angulòsa, Lam. dict. 1. p. 169. Flowers purple or blue. Sepals 8-9, elliptical, spreading.

Angular-leaved Hepática. Fl. Feb. April. Clt? Pl. $\frac{1}{4}$ ft.

4 H. ACUTÍLOBA (D. C. prod. 1. p. 22.) leaves cordate, 3-lobed; lobes quite entire, acute; petioles pilose. ♃. H. Native of North America on the Rocky Mountains and in Canada. Anemòne Hepática. var. acutíloba, Bigl. Hook. Flowers blue. Perhaps a good species. Dr. Boott has gathered a variety of this or *H. Americàna* with 5-cleft leaves near Boston.

Acute-lobed Hepatica. Fl. Feb. April. Clt. 1818. Pl. $\frac{1}{4}$ ft.

5 H. INTEGRIFÒLIA (D. C. syst. 1. p. 217.) leaves ovate, quite entire: scapes and petioles very villous. ♃. F. Native of South America on the mountain Gualgayoc, at the height of 1850 fathoms. Anemòne integrifòlia, H. B. et Kth. nov. gen. et spe. amer. 5. p. 40. Perhaps the involucrum is 1-leaved, and the leaflets divided to the base into 3 parts. Flower sessile, white. Sepals 8-10, linear, shorter than the involucrum. Ovaries villous.

Entire-leaved Hepatica. Pl. $\frac{1}{4}$ foot.

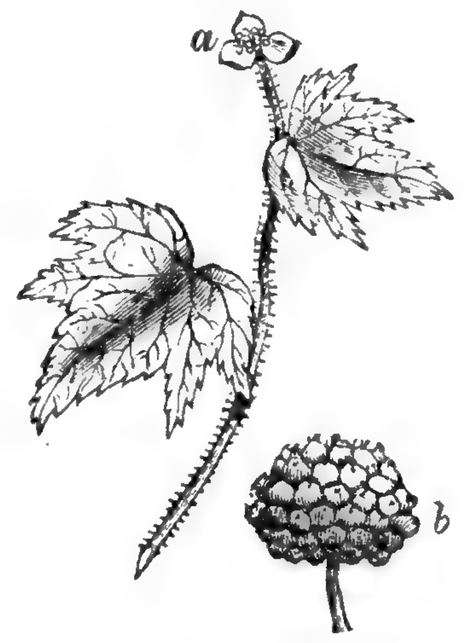
Cult. Hepáticas are great favourites for the flower-border, both as being evergreen in their foliage, and for their abundant early blossoms and great variety of colours and shades. A light loam or peat soil suits them best; and they are easily increased by dividing the plants at the root, in spring.

VIII. HYDRA'STIS (from ὑδωρ, *hydor*, water; in reference to the humid places wherein it grows.) Lin. gen. no. 704. Juss. gen. 232. D. C. syst. 1. p. 217. prod. 1. p. 23. Warneria Mill. fig. 2. t. 285.

LIN. SYST. *Polyándria Polygýnia*. Calyx of 3 ovate sepals. (f. 7. *a*.) Petals wanting. Stamens and ovaries numerous. Fruit baccate, numerous, collected into a head (f. 7. *b*.) each terminated by the style, 1-celled, 1-2-seeded. Seeds somewhat egg-shaped, smooth. A small perennial herb with tuberous roots and 3-5-parted leaves. Root bitter, rather pungent and tonic, yielding a beautiful yellow dye, whence its name *yellow-root*.

HY. CANADE'NSIS (Lin. spe. 784.) ♃. H. Native of North America in watery places, in tracts along the Alleghany mountains, from Canada to Carolina; along the river Ohio, and on the western parts of Virginia and Pennsylvania, in shady woods in fertile soil and among rocks. Pict. hort. par. 37. t. 17. Root with fleshy tubercles, yellow on the inside. Stem herbaceous, simple, 1-flowered. Lower leaves 1 or 2, stalked, upper ones almost sessile, all of which are 3-5-parted, with their lobes grossly toothed. Flowers white or purplish, terminal, stalked. Fruit fleshy, red, similar to those of *Rùbus*. Carpels ovate, acute. (fig. 7.)

FIG. 7.



Canadian Yellow-Root. Fl. May, June. Clt. 1759. Pl. 1 foot.

Cult. This plant being rather difficult to increase, is rare in our gardens. It requires to be planted in a moist shady situation, because if planted in a situation exposed to the sun it rarely lives through the summer. It is increased by dividing the plants at the root in spring, or by seeds.

IX. KNOWLTO'NIA (named after Thomas Knowlton, once the Curator of the Botanic Garden at Eltham). Sal. prod. 372. D. C. syst. 1. p. 218. prod. 1. p. 23.

LIN. SYST. *Polyándria Polygýnia*. Calyx of 5 sepals. Petals 5-15, with a naked claw. Stamens numerous. Ovaries numerous, seated on a globose receptacle. Cariopsides numerous, 1-seeded, baccate. Styles deciduous, awnless. Evergreen perennial herbs, emulating the habit of some umbelliferous plants, with biternate or triternate leaves, and umbels of greenish-yellow flowers.

1 KN. RÍGIDA (Sal. prod. 372.) leaves biternate; leaflets somewhat cordate, coriaceous, smoothish, lateral ones obliquely truncate at the base, umbel supradecompound, spreading. ♃. G. Native of the Cape of Good Hope. Lodd. bot. cab. 850.—Com. hort. 1. p. 1. t. 1. Adònis Capénsis, Lin. spec. 772: Adònis coriàcea, Poir. suppl. p. 146. Anamènia coriàcea, Vent. malm. 1. p. 22. t. 22.

Rigid Knowltonia. Fl. Mar. April. Clt. 1780. Pl. 1 foot.

2 KN. VESICATO'RIA (Sims, bot. mag. t. 775.) leaves biternate; Leaflets somewhat cordate, rigid, smoothish, lateral ones at base obliquely truncate; umbel rather simple, few-flowered. ♃. G. Native of the Cape of Good Hope.—Pluk. alm. 198. t. 95. f. 2. Adònis vesicatòria. Lin. fil. suppl. 272. Adònis Capénsis, Lam. dict. 1. p. 46, exclusive of the synonym of Barr. Anamènia laserpitiifòlia, Vent. malm. 1. p. 22. Anamènia vesicatòria, Dum. cours. bot. cult. 4. p. 438. Adònis laserpitiifòlia, Poir. suppl. 1. p. 147.

Blistering Knowltonia. Fl. Feb. Apr. Clt. 1691. Pl. 1 ft.

3 KN. GRA'CILIS (D. C. syst. 1. p. 219.) leaves biternate; leaflets ovate, profoundly serrated, rigid, pilose; scapes branched at the top; branches erect, few-flowered. ♃. G. Native of the Cape of Good Hope. Deless. icon. sel. 1. t. 19. Adònis Æthiopica. Thun. prod. cap.? Anamènia grácilis, Vent. malm. 1. p. 22. in obs.; Adònis grácilis, Poir. suppl. 1. p. 147. Adònis Capensis Thunb.

Slender Knowltonia. Fl. Mar. April. Clt. 1820. Pl. 1 foot.

4 KN. HIRSU'TA (D. C. syst. 1. p. 200.) leaves biternate; leaflets lanceolate, profoundly serrated, hairy; scapes branched at the base; branches decumbent, few-flowered. ♃. G. Native of the Cape of Good Hope.—Burm. afr. 145. t. 51. Anamènia hirsùta, Vent. malm. 22. in obs. Adònis hirsùta, Poir. suppl. 1. p. 147.

Hairy Knowltonia. Fl. April, May. Clt. 1823. Pl. 1 foot.

5 KN. DAUCIFÒLIA (D. C. syst. 1. p. 200.) leaves ternate; leaflets pinnatifid; lobes linear, acute; umbel compound. ♃. G. Native of the Cape of Good Hope. Adònis fília, Lin. fil. suppl. 271. Adònis daucifòlia, Lam. dict. 1. p. 46. Anamènia daucifòlia, Vent. malm. 22. in obs. Root horizontal. Herb villous at the neck, base of stem and petioles, the rest smooth. Scapes naked, nearly two feet high. Peduncles pubescent.

Carrot-leaved Knowltonia. Fl.? Clt. 1822. Pl. 2 feet.

Cult. These plants will grow freely in a mixture of loam and peat, and may either be increased by dividing the plants at the root, or by seeds, which often ripen in abundance.

X. ADO'NIS (The plant which sprang from the blood of *Adonis* when wounded by a boar; in allusion to the blood-red color of the flowers of most of the annual species.) Dill. giess. nov. gen. 109. t. 4. Lam. illust. t. 498. Gært. fruct. 1. p. 355. t. 74. Lin. gen. 698.

LIN. SYST. *Polyándria Polygýnia.* Calyx of 5 pressed sepals, but they are sometimes loosened at the base. Petals from 5 to 15, with a naked claw. Stamens numerous, inserted in the base of the gonophor. Cariopsides numerous, 1-seeded, spiked, ovate, pointed with the style. Embryo ovate. Cotyledons distant. Annual or perennial herbs, with their cauline leaves pinnate-parted into multifid lobes with innumerable linear lobules. Flowers solitary, on the top of the stem or branches.

SECT. I. ADÒNIA, (applied to this section on account of its containing the original or true species of *Adonis.*) D. C. syst. 1. p. 221; prod. 1. p. 23. Cariopsides acuminated with the straight style. Petals 5-10. Stamens 18-20. Roots annual. The species of this section are probably varieties of one species.

1 AD. AUTUMNA'LIS (Lin. spe. 771.) calyx smooth; petals 6-8, concave, conniving, scarcely larger than the calyx; carpels somewhat reticulated, crowned by very short styles, collected into an ovate head; stems branched. ⊙. H. Native throughout Europe in corn-fields, and very frequently cultivated in gardens: also in Labrador. Smith. eng. bot. t. 308. Curt. fl. lond. 2. t. 37. Schkuhr. hand. 2. No. 1489. t. 152. Flower of an intense blood-red, rarely pale, globose from the concave conniving petals, and from its form and colour is called in France *Goutte de sang.*

Autumnal Pheasant's-eye. Fl. May, Sept. Britain. Pl. 1 foot.

2 AD. FLA'VA (Vill. cat. strasb. 247.) calyx smooth, loosened at the base; petals flat, oblong, double the length of the calyx; carpels smoothish, collected into an oblong head; stem almost simple. ⊙. H. Native of France in corn-fields and vineyards, and probably throughout Germany.—Weinm. phyt. t. 28. f. a. and b. exclusive of the synonyms.—Tab. icon. 790. f. 1. Stem scarcely branched. Flowers yellow, rarely flame-coloured. Petals nearly linear.

Yellow Pheasant's-eye. Fl. June, July. Clt.? Pl. 1 foot.

3 AD. PARVIFLO'RA (Fisch. in litt. D. C. prod. 1. p. 24.) calyx loosened at the base, smooth; petals flat, oblong, length of calyx; carpels few, collected into an ovate head, crowned by straight conical styles; stem simple. ⊙. H. Native of Russia on the banks of the Rhymnus, near the salt lake Indirio. Petals pale scarlet, when dried whitish.

Small-flowered Pheasant's-eye. Fl. Ju. Jul. Clt.? Pl. 1 foot.

4 AD. MICRA'NTHA (D. C. syst. 1. p. 222.) calyx smooth, not loosened at the base; petals flat, oblong, a little longer than the calyx; carpels somewhat reticulated, collected into a somewhat ovate head; stem a little branched. ⊙. H. Native of the south of France about Toulouse, Avignon, &c. in corn-fields. Flowers small, yellow or flame. Ovaries few 7-10. Stem simple at the base, at the top usually a little branched. A doubtful species.

Small-flowered yellow Pheasant's-eye. Fl. Ju. Jul. Pl. 1 foot.

5 AD. MICROCA'RPA (D. C. syst. 1. p. 223.) calyx smooth; petals flat, oblong, twice as long as calyx; carpels reticulated, disposed in an oblong head; stem almost simple. ⊙. H. Native of Spain about Tudela in corn-fields, and of the island of Teneriffe. Calyx scarcely loosened at the base. Fruit about one half smaller and more numerous than in any other species. Flowers yellow-citron, or somewhat flame-coloured. Perhaps distinct enough from *Ad. flàva*, by its stem being one half or more shorter, and more crowded with leaves.

Small-fruited Pheasant's-eye. Fl. Ju. Jul. Clt. 1824. Pl. ½ ft.

6 AD. ANO'MALA (Wallr. sched. 273.) calyx pilose on the outside, acutish; petals 3, oblong, flat, bluntish, spreading, with the claw of the same colour; carpels ovate, disposed in 6 rows, crowned with the withered styles, afterwards becoming loosely and irregularly disposed into an oblong spikes; stem branched. ⊙. H. Native about Halle in fields.

Anomalous Pheasant's-eye. Fl. June, July. Pl. 1 foot.

7 AD. CÍTRINA (Hoffm. fl. germ. 1. p. 251.) calyx hispid at the base; petals flat, oblong, longer than the calyx; carpels disposed into an ovate-oblong head; stem almost simple; flowers small, almost sessile among the leaves. ⊙. H. Native of France, Germany, and Teneriffe, in corn-fields. Plant small. Stem erect, simple, very rarely branched. Flowers solitary, small, yellow.

Citron-coloured-flowered Pheasant's-eye. Fl. June, July. Clt. 1819. Pl. 1 foot.

8 AD. FLA'MMEA (Murr. syst. 514.) calyx hispid at the base; petals flat, oblong, acute, longer than the calyx; carpels disposed into a cylindrical head; stem branched; flowers large, stalked. ⊙. H. Native of Austria in corn-fields. Jacq. fl. aust. 4. t. 355.—Besl. hort. eyst. œ'st. ord. 5. t. 11. f. 3. Stem smooth or pilose. Petioles pilose. Flowers flame-coloured; sepals oblong, acute.

Flame-coloured-flowered Pheasant's-eye. Fl. July, August. Clt. 1800. Pl. 1 foot.

9 AD. ÆSTIVA'LIS (Lin. spec. 772.) calyx hispid at the base: petals, flat, oblong, obtuse, one half longer than the calyx: carpels reticulated, disposed into a loose oblong spike, beaked with the straight style; stem almost simple. ⊙. H. Native of England in corn-fields; south of France, Italy, &c. Ad. miniàta, Jacq. fl. aust. t. 354; Ad. maculàta, Wallr. sched. 270. Stem elongated. Flowers peduncled, small, of a deep crimson colour.

Summer Pheasant's-eye. Fl. June, July. England. Pl. 1 foot.

10 AD. DENTA'TA (Del. fl. ægyp. ill. 17, descr. eg. t. 53. f. 1.) calyx hispid at the base; petals flat, oval-oblong, a little longer than the calyx; carpels toothed at the base, with tubercles, netted, disposed into an elongated spike. ⊙. H. Native of Egypt in corn-fields and arid places. Stem striato-angular, hard, branching. Flowers on short peduncles.

Var α, *orientàlis*, (D. C. syst. l. c.) petals yellow. Native of Egypt and the island of Cyprus. Ad. dentàta, Del. fl. ægyp. ill. p. 17, descr. ægyp. t. 53. f. 1. Petals oval, yellow, with a black claw. Fruit echinately toothed at the base, with the back a little crested, disposed in slender spikes.

Var. β, *provinciàlis* (D. C. syst. l. c. prod. l. c.) petals flame-coloured. Native of Provence between Digne and Colmars. Petals oblong. Fruit a little tuberculately-toothed at the base, disposed in a long spike.

Toothed-fruited Pheasant's-eye. Fl. Ju. Jul. Clt.? Pl. 1 foot.

Sect. II. Consolìgo, (perhaps derived from *Consolido* to unite, on account of the plants being perennial) D. C. syst. 1. p. 224. prod. 1. p. 24. Cariopsides hooked with the recurved styles, collected into an ovate head. Petals 8-15. Stamens 25-30. Roots perennial, black, acrid, and purgative. Flowers yellow.

11 Ad. verna'lis (Lin. spe. 771.) radical or lower leaves abortive, or reduced to somewhat sheathing scales, the middle and upper ones sessile and multifid, with very entire lobes, carpels velvety; petals 10-12, oblong, rather denticulated. ♃. H. Native of France, Siberia, Tauria, Switzerland, and Italy, on hills and in valleys, in sunny places of mountains, flowering in the spring after the melting of the snow. Gært. fruct. 1. p. 355. t. 74. Curt. bot. mag. 134. Schkuh. hand. No. 1490. t. 152. Ad. helléborus, Crant. aust. 2. p. 82. Ad. Apennìna, Jacq. aust. t. 44. Ad vernàlis a. Lam. dict. 1. p. 45. ill. t. 498. f. 3.

Var. β, Mentzèlii (D. C. syst. 1. p. 225. prod. 1. p. 25.) Ad. Apennìna, Lin. spe. 772. Ad vernàlis β. Lam. dict. 1. p. 45.—Mentz pug. t. 3. f. 1.

Var. γ, Sibírica (Patrin. D. C. syst. et prod. l. c.) Native of Siberia on the banks of the river Oby about Barnaoul.—Gmel. sib. p. 200. No. 43. Not differing from the European plant, unless that the flowers are a little larger.

Spring Adonis. Fl. Mar. April. Clt. 1629. Pl. 1 foot.

12 Ad. Volge'nsis (Stev. ined. D. C. syst. i. p. 545.) radical or lower leaves abortive, or reduced to somewhat sheathing scales, middle and upper ones sessile, multifid, with the lobules toothed at their margins; carpels somewhat velvety; calyx pubescent on the outside; petals 10-12, oblong. ♃. H. Native of the Russian empire at the rivers Volga and Rhymnus. Deless. icon. sel. 1. t. 20. Ad. Apennìna? Pall. nov. act. petrop. vol. 10. Ad. chærophýlla. Fisch. ined. An intermediate plant between *Ad. vernàlis* and *Pyrenàica*, differing from the first in the stems being branched, leaves more distant, carpels much less velvety; from the last by the lower leaves being abortive, squamiform, and with the carpels when young somewhat velvety; differing from the whole in the sepals of calyx being pubescent on the outside, not smooth.

Volga Adonis. Fl. April, May. Clt. 1818. Pl. 1 foot.

13 Ad. Ircutia'na (D. C. prod. i. p. 25.) radical leaves? middle and upper ones sessile, pinnately, many-parted with toothed lobules; calyx very smooth; petals obovate. ♃. H. Native of Siberia about Irkoutsk. A species not sufficiently known.

Irkoutsk Adonis. Pl. 1 foot.

14 Ad. Sibírica (Patrin. ex Spreng. syst. append. p. 218) plant quite smooth; segments of leaves short, cut; petals numerous obovate, crenulate at the apex, much longer than the calyx. ♃. H. Native of Siberia.

Siberian Adonis. Fl. April, July. Pl. 1 foot.

15 Ad. Davu'rica (Rchb. icon. t. 321. Spreng. syst. app. p. 218) segments of leaves trifid, linear; petals 12, spatulate, crenulated at the apex, much longer than the smooth calyx. ♃. H. Native of Dahuria.

Dahurian Adonis. Pl. 1 foot.

16 Ad. villo'sa (Ledeb. in litt. ex Spreng. l. c.) petals 12, linear-oblong, crenulate at the apex, twice the length of pubescent calyx; stem branched, and is, as well as the leaves, hoary villous; segments of leaves trifid, linear, pointed. ♃. H. Native of Russia on Mount Imaus. This plant differs from *A. Sibírica* of Rchb, in being villous, as well as in the stem being branched, and the segments of the leaves narrower.

Villous Adonis. Pl. 1 foot.

17 Ad. Pyrena'ica (D. C. fl. fr. 5. p. 635) radical leaves on long stalks, with trifid petioles and many-parted segments, upper ones sessile multifid, with linear very entire lobules; carpels smooth; petals 8-10, oblong-cuneated, entire. ♃. H. Native of the Eastern Pyrenees in the valley called Eynes; and near Ædinburgh, in Hungary. Deless. icon. sel. 1. t. 21. Stem beyond a foot high and usually much branched. Radical leaves with trifid stalks not squamiform. Flowers almost sessile. Pedicel of fruit much elongated. Petals smaller and more obtuse than in *Ad. vernàlis*. Fruit also smooth. Like *Ad. vernàlis* but truly distinct.

Var. β, mìnor (D. C. prod. 1. p. 25). Native of the south of the Apennines in Mount Velino. Ad. Apennìna, Schousb. in litt. not Lin.

Pyrenean Adonis. Fl. July. Clt. 1817. Pl. 1½ foot.

Cult. A genus of beautiful plants. Those species belonging to section *Adònia* being annual, only require to be sown in open borders; those belonging to section *Consoligo* are very handsome perennial herbaceous flowering plants, very proper for the front of flower-borders; they may be either increased by dividing the plants at the roots or by seeds.

XI. HAMADRY AS (from ἁμα, *hama*, together, δρυον, *dryon*, a forest; habitat.) Commers. in Juss. gen. p. 232.

Lin. syst. *Polyándria Polygýnia.* Flowers dioecious from abortion. Calyx of 5 or 6 sepals. (f. 8. *a.*) Petals 10-12, linear, long. (f. 8. *b.*) Male flowers with numerous short stamens, female ones with numerous ovaries and sessile stigmas. Carpels ovate, 1-seeded. Small downy herbs with the appearance of *Ranúnculus*. Leaves radical, palmate, stalked. Scapes 2 or 3-flowered, hardly longer than the leaves. Flowers yellow, alternate, sessile, collected at the top of the scape into a sort of spike.

FIG. 8.

1 Ham. Magella'nica (Lam. dict. 3. p. 67) calyx smooth, upper leaves smooth above, 3-parted; lobes deeply parted. ♃. H. Native of the Straits of Magellan in mountainous groves. Deless. icon. sel. 1. t. 22. Herb erect. Radical leaves 3 or 4, with the base of the petioles dilated, and smooth, the rest villous. Scapes hairy, a little longer than the leaves.

Magellan Hamadryas. Pl. ¼ ft. (f. 8.)

2 Ham. tomentòsa (D. C. syst. 1. p. 227) calyx tomentose; upper leaves cobwebbed, villous, 5 or 7-cleft into oblong or subtrifid lobes. ♃. H. Native of South America, in Statenland, on the declivities of mountains. Herb erect, tomentose. Radical leaves 2 or 3, somewhat orbicular, upper ones somewhat cordate at the base. Scapes simple, a little longer than the pètioles. Flowers 2 or 3, sessile, crowded at the top of the scape. Ovaries disposed into a round head.

Tomentose Hamadryas. Fl. Feb. March. Pl. ½ foot.

Cult. These plants will require to be kept in pots, in a mixture of sand and loam. They should be protected during winter by a frame, and may be either increased by dividing the plants at the roots or by seeds.

Tribe III.

RANU'NCULEÆ, (plants agreeing with *Ranúnculus* in habit and character,) D. C. syst. 1. p. 228; prod. 1. p. 25. Calyx and corolla imbricate in the bud. (f. 14. *a.*) Petals furnished with a scale on the inside at the base (f. 9. *c.*) or bilabiate. Carpels 1-seeded (f. 9. *g.*) dry, unopening. (f. 9. *e.*) Seed erect. (f. 9. *f.*) Leaves radical or alternate. (f. 9.) Flowers of various colors but never blue. Herbs.

XII. MYOSU'RUS (*μυς, mys*, a mouse, and *ουρα, oura*, a tail. The seeds are seated upon a long receptacle, which looks exactly like the tail of a mouse). Dill. geiss. p. 106. t. 4. Lin. gen. No. 394. D. C. syst. 1. p. 229. prod. 1. p. 25. Gært. fr. 1. p. 354. t. 4. Juss. gen. 233. Lam. ill. t. 221.

LIN. SYST. *Pentándria Polygýnia.* Calyx of 5-sepals; sepals loosened at the base or drawn out downward beyond their insertion. Petals 5, with a filiform tubular claw. Stamens 5-20. Cariopsides numerous, triquetrous, very much crowded on a long receptacle, each pointed with the straight style. Small annual plants with linear entire leaves, and small yellow flowers. Scapes 1-flowered.

1 MY. MÍNIMUS (Lin. spec. 407.) scape nearly equal in length with the leaves, or longer; appendages of calyx somewhat leafy, ☉. H. Native throughout Europe in exposed muddy situations. and in fields where it has been inundated in the winter. Fl. dan. t. 406. Curt. fl. lond. t. 151. Smith, eng. bot. Schkuhr. handb. t. 88. Scapes shorter or longer than the leaves, 3-8, rising from the same root. Sepals and petals equal in number.

Least Mouse-tail. Fl. April, June. Britain. Pl. 1-2 inches.

2 MY. SHO'RTII (Raf. in Sill. amer. jour. sc. 1819. vol. 1. No. 4. p. 379.) scapes shorter than the leaves; appendages of calyx membranous. ☉. H. Native of North America about Hopkin's Town, West Kentucky. Perhaps a variety of the first.

Short's Mouse-tail. Fl. April, June. Pl. 1 inch.

Cult. The species of Myosurus only require to be sown in the open ground in a moist situation, where they should afterwards be allowed to sow themselves.

XIII. CERATOCE'PHALUS (from *κερας, keras*, a horn, and *κεφαλη, kephale*, a head, on account of the horn ends of the seeds in the heads of the capsules) Mœnch. meth. p. 218. D. C. syst. 1. p. 230. prod. 1. p. 26, but not of Vaill.

LIN. SYST. *Pentándria Polygy'nia.* Calyx of 5 permanent sepals. Petals unguiculate. Stamens 5-15. Carpels numerous, attached to a long receptacle, with a gibbosity on both sides at the base, and drawn out at top into a long flat horn, which is 6-times longer than the seed. Seeds 4-sided, with an erect embryo. Small annual herbs, with 1-flowered scapes, yellow flowers, and leaves many-parted into linear lobes.

1 CER. FALCA'TUS (Pers. ench. 1. p. 341.) horns of carpels falcate, somewhat ascending. ☉. H. Native of Spain, south of France, Italy, Hungary, Austria, Argolis, Arcadia, and about Damascus, &c. in corn-fields. Ranúnculus falcàtus, Lin. spe. 781. Jacq. fl. aust. t. 48; Ranúnculus testiculàtus. Crantz. aust. 2. p. 97. Ceratocéphala spicàta, Mœnch. meth. 218. Herb nearly smooth, but downy in hot exposed situations.

Falcate-horned Ceratocephalus. Fl. May. Clt. 1739. Pl. 1 to 2 inches.

2 CER. ORTHÓCERAS (D. C. syst. 1. p. 231.) horns of pericarps straight. ☉. H. Native of Tauria and the south of Siberia in uncultivated fields. Deless. icon. sel. 1. t. 23. Ranunculus falcàtus, Bieb. fl. cauc. 2. p. 29, exclusive of the synonyme. Differing from *C. falcàtus*, in being a little smaller, and in the pericarps being constantly clothed with white wool, as well as in the horns of pericarps being straight, not falcate.

Straight-horned Ceratocephalus. Fl. May. Clt. 1823. Pl. 1 inch.

Cult. They only require to be sown in the open ground. Not worth cultivating unless in the gardens of the curious.

XIV. RANU'NCULUS (from *rana*, a frog, because most of the species inhabit humid places frequented by that reptile; *Renoncule* and *Grenouillette*, Fr.; *Ranunkel*, Germ.; *Ranuncole*, Ital.; *βατραχιον*, Gre.; *Crowfoot* in English, in allusion to the form of the leaves of many of the species,) C. Bauh. pin. 180; Pers. ench. 2. p. 102; Gært. fruct. 1. p. 353. t. 74. Ranunculi spe. Lin. gen. No. 699.

LIN. SYST. *Polyándria, Polygýnia.* Calyx of 5 deciduous sepals (f. 9. *a.*) which are not loosened at the base. Petals 5, rarely 8 (f. 9. *b.*) 10, furnished with a nectariferous scale on the inside at the base (f. 9. *c.*). Stamens numerous. Cariopsides numerous, ovate, somewhat compressed ending in a point or horn, which is scarcely ever longer than the seed, (f. 9. *d.*) smooth striated or tubercled (f. 9. *e.*), disposed into globose or cylindrical heads (f. 9. *e. d.*). Annual or perennial herbs, with entire, toothed, or multifid leaves (f. 9.), and white, yellow, or purple, scentless flowers. The recent herb is acrid, applied to the skin occasions blisters, but taken inwardly poisonous.

SECT. I.—BATRA'CHIUM (*βατραχιον, batrachion*, a frog; because the plants grow in water frequented by that reptile for the purpose of depositing their spawn;) D. C. syst. 1. p. 232. prod. 1. p. 26. Pericarps transversely rugoso-striated. Petals white, marked with a yellow hollow nectariferous claw. Water plants.

1 R. HEDERA'CEUS (Lin. spe. 781.) stem creeping; leaves reniform, usually 3 or 5-lobed; lobes broad, entire, very blunt; petals oblong, scarcely longer than the calyx; stamens 5-12; carpels smooth. ♃. H. W. Native throughout Western Europe, in springs, fountains, running waters, and inundated places; especially in Iceland, Britain, north and west of France, Spain, Portugal, Algiers, and in North America from the United States to the Arctic sea. Smith, eng. bot. 2003. Curt. fl. lond. Haynes, pl. euro. 106. R. hederàceus, var. *α.* Thor. chl. land. 242. Schlecht. anim. ran. 1. p. 7. R. hederæfòlius, Sal. prod. 372.

Ivy-leaved Crowfoot. Fl. May, Aug. Britain. Pl. aq.

2 R. SANICULÆFÒLIUS (Viv. ex. Spreng. syst. 2. p. 645.) stem floating, and rooting; leaves kidney-shaped, bluntly 5-lobed, crenated; petioles naked at the base; peduncles equal in length to the leaves; petals 3-times longer than the calyx. ♃. H. W. Native of the north of Africa.

Sanicula-leaved Crowfoot. Fl. May, Aug. Pl. flt.

3 R. TRIPARTÌTUS (D. C. icon. gal. rar. 1. p. 15. t. 49.) stem floating, submersed leaves capillaceously-multifid, emersed ones 3-parted; lobes cuneated, toothed at top; carpels smooth. ♃. H. W. Native of the west of France, Britain, in springs and inundated places. An intermediate species between *R. hederàceus* and *R. aquátilis.*

Var. α, micránthus (D. C. l. c.), petals oblong acutish, length of calyx; R. tripartítus, D. C. icon. gal. rar. 1. p. 15. t. 49. R. hederàceus, var. *β*, Thor. chl. land. 242.

Var. β, obtusiflòrus (D. C. l. c.) petals, obovate obtuse, longer than the calyx. Water Crowfoot, Pet. engl. herb. t. 39. f. 1.

Three-parted-leaved Crowfoot. Fl. May, Aug. Britain. Pl. flt.

4 R. AQUA'TILIS (Lin. spe. 781.) stems floating; submersed leaves capillaceously-multifid, emersed ones 3-parted; lobes wedge-shaped, toothed at top; petals obovate, larger than calyx; carpels hispid, with stiff bristles. ♃. H. W. Native throughout Europe, Western Asia, North Africa, and also in North America, in pools and stagnant waters, in plains and low mountains. Smith. eng. bot. 101; Bir. ran. 32. t. 1. f. 18 and 27.

This plant sometimes produces very large flowers, and makes a handsome show in ponds and ditches; the curious variety in the floating and immersed leaves adds to the beauty of this common aquatic plant. Dr. Pulteney (Linn. soc. trans. 5. p. 19.) contradicts the assertions of its deleterious qualities, and proves that it is not merely innoxious, but nutritive to cattle, and capable of being converted to useful purposes in agricultural economy. In the neighbourhood of Kingswood, on the borders of the Avon, some of the cottagers support their cows, and even horses, almost wholly by this plant. A man collects a quantity every morning,

and brings it in a boat to the edge of the water, from which the cows eat it with great avidity, insomuch that they stint them, and allow only about twenty-five or thirty pounds to each cow daily. One man kept five cows and one horse so much on this plant, with the little which the heath afforded, that they had not consumed more than one half a ton of hay throughout the whole year, none being used except when the river is frozen over. Hogs are also fed with this plant, and improve so well on it, that it is not necessary to give them any other sustenance till they are put up to fatten. This property of Water-crowfoot is the more remarkable, as all the species have been deemed acrimonious, and some of them are without doubt highly so. It is probable this and the other water species are rendered inert as a poison by growing in water; although it must be confessed, that in other instances moisture heightens the deleterious property of vegetables, especially in the umbelliferous tribe.

Var. α, heterophýllus (D. C. l. c.) emersed leaves 3-parted. R. heterophýllus, Hoffm. fl. germ. 197; R. fluviátilis, Tabern. 54. f. 2; R. diversifòlius, Schrank. fl. bav. 103. Emersed leaves peltate or often not peltate. Carpels hispid with rigid setæ, or rarely smooth.

Var. β, capillàceus (D. C. l. c.) leaves stalked, immersed, dissected into slender filiform segments.—Barrel. icon. 57. t. 566. R. trichophy'llus, Chaix. in Vill. dauph. 1. p. 337. R. pántothrix, var. α. D. C. syst. 1. p. 135. R. fluviátilis, Wahl. veg. helv. no. 597. Flowers large or small. Carpels hispid, or rarely smooth.

Var. γ, cæspitòsus (D. C. l. c.) leaves stalked, all emersed ones with a suborbicular black mark, dissected into diverging stiff segments; petioles with a broad sheathing auricled base. R. aquátilis, var. β, Schk. hand. 2. no. 1527. t. 152. R. rígidus, Pers. in Hoffm. fl. germ. 4. p. 257. R. pántothrix β, D. C. syst. 1. p. 236. R. púmilus Poir. dict. 6. p. 133. R. circinnàtus, Sibth. in Smith. fl. brit. 2. p. 596. Fine Water-crowfoot, Pet. herb. t. 39. f. 3.

Var. δ, stagnàlis (D. C. l. c.) leaves sessile, all immersed, capillaceously-multifid, circinnate: segments short; sheaths obsoletely auricled, and are, as well as carpels, acutish and smoothish. R. stagnátilis, Wallr. sched. 285.

Var. ε, peucedanifólius (D. C. l. c.) leaves stalked, all immersed, dissected into long parallel segments. R. fluitans, Oed. fl. dan. t. 376. R. peucedanifòlius, All. ped. no. 1469. R. pántothrix γ, D. C. syst. 1. p. 236. R. peucedanoìdes, Desf. atl. 1. p. 444. R. fluviátilis, Willd. spec. 2. p. 1333.

Water-Crowfoot. Fl. April. Aug. Britain. Pl. flt.

SECT. II. RANUNCULA'STRUM, (from *Ranunculus* and *astrum*, an affixed signification; like) D. C. prod. 1. p. 27. Carpels smooth, compressed, disposed in spikes. Roots grumose. Flowers yellow, but variable in *R. Asiáticus*. Leaves toothed, or dissected.

5 R. BULLA'TUS (Lin. spe. 774.) eaves all radical, stalked, ovate, toothed; scape naked, 1-flowered. ♃. H. Native of the region of the Mediterranean, especially in Portugal, Andalusia, Mogadore, Algiers, Corsica, Sicily, Malta, Crete; in uncultivated fields, olive plantations, and cretaceous hills. Flowers yellow, sweet scented, 9-12-petalled, single or double, sometimes small, as in *R. flámmula*; sometimes large, as in *R. bulbòsus*.

Var α, parviflòrus (D. C. syst. 1. p. 254. prod. 1. p. 27.) flower small; scape pilose; leaves a little blistered.—Clus. hist. 1. p. 238. f. 2.—Tabern. icon. 50. f. 1 and 2.—Ger. hist. 954. f. 10.—Mor. hist. 2. p. 447. sect. 4. t. 31. f. 51.

Var. β, grandiflòrus (D. C. l. c.) flower large; scape clothed with pressed hairs; leaves much blistered.—Clus. hist. 1. p. 238. f. 1.—Ger. herb. 855. f. 11.—Mor. hist. 2. p. 447. sect. 4. t. 31. f. 49, 50.

Blistered-leaved Crowfoot. Fl. Aug. Sept. Clt. 1640. Pl. 1 ft.

6 R. CHÆ'ROPHY'LLOS (Lin. spe. 780.) radical leaves stalked, and somewhat villous, trisected; segments once or twice 3-parted, acute; the first or primordial leaves ovate, toothed or 3-lobed; stem erect, 1 or 2-flowered; calyx spreading, somewhat reflexed. ♃. H. Native throughout the south of Europe, North Africa, and Archipelago, in hills and fields. The first leaves are oval, the successive ones more and more dissected. Carpels acuminated, with the styles, densely crowded into ovate, oblong heads.

Var. α, vulgàris (D. C. l. c.) leaves nearly all trisected, multifid.—Col. ecphr. 1. p. 212. t. 311.—Mor. hist. 2. p. 446. sect. 4. t. 30. f. 44.—Barrel. icon. 581. R. chœrophýllos, Lin. spe. 780. R. Illýricus, Poir. dict. 6. p. 121. exclusive of the synonyms.

Var. β, gregàrius (D. C. syst. 1. p. 255. prod. l. c.) some of the leaves trifid, cut, others trisected, multifid. R. gregàrius, Brot. fl. lus. 2. p. 369. R. Thomàsii, Ten. prod. fl. neap. suppl. 2. p. 68.

Var. γ, flabellàtus (D. C. l. c.) some of the leaves oval, toothed, others trisected, multifid. R. flabellàtus, Desf. atl. 1. p. 438. t. 114. Smith, fl. græc. t. 520.

Chervil-leaved Crowfoot. Fl. Jul. Aug. Clt. 1820. Pl. 1 foot.

7 R. AGE'RII (Bertol. opus. sc. 3. 1819. p. 182. t. 6.) leaves smooth, first ones reniform, 3-lobed, crenated, succulent, 3-parted, ultimate ones ternate; lobes multifid, linear; stem 2-leaved, hairy, usually 1-flowered; calyx reflexed; carpels ending in subulate points. ♃. H. Native of Buenos Ayres.

Ager's Crowfoot. Pl. 1 foot.

8 R. PALUDÒSUS (Poir. voy. 2. p. 184. dict. 6. p. 108.) leaves pubescent, radical ones ternate; lobes multifid; upper leaves linear entire; stem erect, dichotomous; calyx adpressed. ♃. H. Native of Barbary about Lacalle and elsewhere, in marshes. R. chæ'rophýllos var. d, Bir. ren. 42. Corolla of *R. àcris*. Carpels almost pointless, collected into elliptical heads. Calyx villous.

Marsh Crowfoot. Fl. May, June. Clt. 1816. Pl. 1 foot.

9 R. ADSCE'NDENS (Brot. fl. lus. 2. p. 63. t. 37.) leaves woolly, radical ones 3-parted: segments cuneated, trifid, deeply toothed; stems ascending, dichotomous; peduncles furrowed, angular; calyx reflexed. ♃. H. Native of Portugal about Coimbra and elsewhere in Beira and Estramadura, at the bottom of hills in bushy and shady places. Stature great. Leaves large, usually spotted at the recesses.

Ascending-stemmed Crowfoot. Fl. May, June. Pl. 4 feet.

10 R. MILLEFOLIA'TUS (Vahl. symb. 2. p. 63. t. 37.) leaves decompound, multifid; lobes linear, smooth; stem almost leafless, erect, villous, 1-flowered; calyx pressed. ♃. H. Native of the kingdom of Tunis about Cape Carthage in cultivated places, and on the mountains of the Morea, and Naples. Desf. atl. 1. p. 441. t. 116. Smith fl. græc. 521. Very like *R. chæ'rophýllos*, but differing in the tubercles of the roots being shorter and thicker; leaves always decompound; flower larger, calyx pressed, not reflexed.

Thousand-leaved Crowfoot. Fl. May, July. Plant 1 foot.

11 R. SCA'BER (Presl. ex Spreng. syst. app. p. 218.) leaves decompound, multifid, scabrous; segments linear-oblong, obtuse; calyx pubescent, reflexed; stem erect, leafy, many-flowered, clothed with close-pressed pubescence; roots grumose. ♃. H. Native of Sicily.

Scabrous Crowfoot. Pl. 1 foot.

12 R. GRA'CILIS (D. C. syst. 1. p. 256.) leaves very smooth, some orbicular 3-lobed, toothed at top, others ternate, with oblong deeply lobate lobes; stem nearly leafless, erect, clothed with pressed hairs, 1-flowered; calyx reflexed, a little pilose. ♃. H. Native of the Archipelago in the island of Cos. R. nov. spe.

Clarke's Travels, 2. p. 723. Sepals oval, reflexed, somewhat pilose on the outside. Petals obovate, orbicular, size of those of *R. àcris*. Flower terminal, erect, yellow.

Slender Crowfoot. Fl. May, June. Clt. 1818. Pl. ½ ft.

13 R. FUMARIÆFÒLIUS (Desf. in icon. pict. hort. paris, 37. t. 74.) leaves quite smooth, pinnate, many-parted; lobes oblong; scapes numerous, 1-flowered, clothed with pressed villi; calyx spreading, smooth. Native? Formerly cultivated in gardens. R. rutæfòlius, Mill. dict. no. 6. but not of Lin. Scapes sometimes leafless, sometimes furnished with one multifid leaf about the middle. Sepals ovate, oblong. Flowers always double, yellow, about the size of the double-flowered var. of *R. acris*. A species allied on one side to *R. grácilis* and *R. millefoliàtus*, on the other to *R. Asiáticus*.

Fumitory-leaved Crowfoot. Fl. May, Jul. Clt? Pl. 1 foot.

14 R. MYRIOPHY'LLUS (Russel. gew. alep. in Schrad. journ. 1799. p. 424.) leaves decompound, multifid, hoary-villous; segments linear; stem branched, beset with close pressed hairs, calyx spreading, villous. ♃. H. Native between Aleppo and Mossul. The whole herb canescent, with white villi. Petals yellow, obovate, a little longer than the calyx. Ovaries collected into an oval-oblong head.

Myriad-leaved Crowfoot. Fl. May, June. Pl. 1 foot.

15 R. ORIENTA'LIS (Lin. spe. 781.) leaves decompound, multifid, pubescent; stem branched, clothed with close, pressed villi; calyx reflexed; carpels with long horns. ♃. H. Native of the Levant, island of Lesbos. Deless. icon. sel. 1. t. 32. stem from a finger to a hand high. Peduncles short, 1-flowered; petals oblong.

Var. β, R. O. pulsatillæ folio parvo flore. Tourn. cor. p. 20. Native of Smyrna. Scarcely differs from the first unless that the petals are a little narrower.

Eastern Crowfoot. Pl. ½ foot.

16 R. LEPTA'LEUS (D. C. syst. 1. p. 258.) leaves decompound, multifid, smooth; stem pilose; calyx spreading; carpels with long horns. ♃. H. Native of the island of Cyprus. Deless. icon. sel. 1. t. 33. Carpels as in the preceding species hooked at the apex.

Slender Crowfoot. Fl. May, June. Pl. 2 foot.

17 R. CICUTA'RIUS (Schlecht. anim. ran. 25. t. 4. f. 2.) leaves pinnate and pinnate-parted; segments cuneated, cut, or toothed, smooth; stem somewhat branched, covered with close-pressed villi; calyx spreading, pubescent. ♃. H. Native of eastern Siberia.

Cicuta-like Crowfoot. Fl. May, July. Clt. 1818. Pl. 1 ft.

18 R. OXYSPE'RMUS (Willd. spec. 2. p. 1328.) leaves villous, radical ones stalked, ovate, 3-parted, toothed, floral ones 3-parted; lobes elongated, toothed at the top; stem erect, villous, dichotomous; calyx reflexed; carpels muricated, awned. ♃. H. Native of Tauria, Caucasus, Iberia, and Syria near Aleppo, in fields. Petals oblong or obovate. Carpels disposed into an ovate-oblong head, muricated, with the back smooth, ending in straight, stiff, awl-shaped points. Perhaps a distinct section.

Sharp-seeded Crowfoot. Fl. May, Ju. Clt. 1822. Pl. 1 ft.

19 R. PEDA'TUS (Waldst. and Kit. hung. 2. p. 112. t. 108.) leaves smooth, radical ones stalked, 3-parted or pedate; lobes linear, entire or bifid; stem leaves sessile, parted, uppermost ones linear; stem erect, few-flowered, calyx adpressed. ♃. H. Native of Hungary near Buda, Tartary, and in Siberia near the river Volga. Lodd. bot. cab. 4. p. 351. Sims, bot. mag. t. 2229. Stem pubescent or smooth, or with the base smooth and the top pubescent, 1-5-flowered. Carpels disposed into an ovate head.

Pedate-leaved Crowfoot. Fl. May, Ju. Clt. 1306. Pl. 1 ft.

20 R. PETROSELÌNUS (Biria, ren. 43. t. 2.) leaves smooth, but villous at the base of the petioles, ternate; segments 3-parted; lobes somewhat 3-lobed, deeply toothed; stem erect, many-flowered. ♃. H. Native of the island of Bourbon. Stem 2 feet high. Sepals oblong, acute. Carpels ovate, pointed with the very short styles, collected into ovate-oblong heads.

Parsley-like Crowfoot. Pl. 2 feet.

21 R. ILLY'RICUS (Lin. spe. 776.) leaves clothed with silky wool, first ones entire linear, the rest 3-parted, with entire or 3-parted linear lobes; stem erect, many-flowered; calyx somewhat reflexed. ♃. H. Native of Dalmatia in pastures, Austria on Mount Hamburgh; in shady places in Mount Hæmus; not rare in Tauria and about Odessa. Jacq. aust. t. 222.—Lob. icon. 672. Tab. icon. t. 48. f. 1. R. tomentòsus, Mœnch. meth. 212. R. gramíneus, Habl. taur. 149 from Bieb. R. seríceus, Willd. enum. 589, not Poir. Like *R. Monspelìacus*, but differs in having the first leaves entire, not trifid. Carpels acuminated, collected into ovate-oblong heads.

Illyrian Crowfoot. Fl. May, June. Clt. 1596. Pl. 1½ ft.

22 R. MONSPELIA'CUS (Lin. spe. 778.) leaves woolly, radical ones 3-lobed; lobes cuneated, trifidly-toothed; upper leaves 3-parted, with entire linear lobes; stem erect, few-flowered; calyx reflexed; spikes of carpels ovate. ♃. H. Native in the region of the Mediterranean, in sunny pastures or among rocks, especially in Arragon, Occitania, Provence, Italy, Algiers, and Tunis. Similar but differing from *R. Illýricus* by the radical leaves being 3-parted, toothed; the rest very variable, as may be seen from the number of varieties.

Var. α, angustifòlius (D. C. l. c.), inhabits exposed situations; lobes of leaves narrow, elongated. R. Illyricus, Besl. eyst. vern. ord. 1. t. 13. f. 1. Gouan. fl. monsp. p. 269. Willd. enum. 589.

Var. β, cuneàtus (D. C. l. c.) inhabits grassy places; lobes of leaves wedge-shaped, trifidly toothed at the top.—Mor. hist. 2. p. 445. sect. 4. t. 30. f. 43. R. Monspelìacus, D. C. icon. gall. rar. t. 50. R. apiifòlius. Desf. in pict. hort. par. 37. t. 73. not Pers.

Var. γ, rotundifòlius (D. C. l. c.) inhabits rocks; leaves roundish, trifid; lobes toothed, obtuse.—Mor. hist. 2. p. 446. sect. 4. t. 30. f. 47. (bad). R. Monspelìacus. Gouan. fl. monsp. 279. Poir. dict. 6. p. 111. R. saxátilis, Balb. misc. p. 27.

Montpelier Crowfoot. Fl. April, May. Pl. 1½ foot.

23 R. SPICA'TUS (Desf. fl. atl. 1. p. 438. t. 115.) leaves somewhat hairy, radical ones stalked, orbicular, 3-lobed, upper ones 3-parted; lobes entire linear; stem erect, few-flowered; calyx reflexed. ♃. H. Like the preceding, but with the leaves less hairy, and less profoundly cut, rounder and larger. Carpels very much compressed, hooked at the top, collected into a cylindrical spike. Leaves 3-lobed and toothed in the same specimen.

Var. α, vèra; leaves 3-lobed, toothed, stem 1 to 2-flowered. Native about Algiers in marshy places. R. spicàtus. Desf. l. c. Bir. ren. 42.

Var. β, Olyssiponénsis (Pers. syn. 2. p. 106.) leaves crenated; stem 1 to 2-flowered. Native about Lisbon. R. Lusitánica grumosa radice, foliis hederæ terrestris, Tour. inst. 286.

Var. γ, Carthusianòrum; leaves 3-lobed, crenated; stem 2 to 5-flowered. Native about Carthage. R. asphodeli radice, &c. Tour. herb.

Spiked Crowfoot. Pl. 1½ foot.

24 R. ASIA'TICUS (Lin. spe. 777.) leaves ternate or biternate; segments toothed or deeply trifid; stem erect, simple, or branched at the base; calyx spreading, afterwards reflexed; spikes of carpels cylindrical. ♃. H. Native of the Levant. Smith fl. græc. t. 518. In all the varieties the petals are obovate and longer than the calyx, very blunt, and larger than in the rest of *Ranunculi;* carpels smooth, much compressed, hooked with the remaining style. The three varieties enumerated are perhaps so many distinct species.

Var. a, vulgàris (D. C. l. c.) stem branched at the bottom; leaves ternate; segments trifid, cut, acute. Native of the Levant.—Clus. hist. 1. p. 241. f. 2. R. Asiáticus, Mill. icon. t. 216; dict. No. 11. A very variable variety and a great ornament to gardens, where its variations are innumerable. Flowers double or single, white, yellow, red, purple, and variegated, in fact of all colours, blue excepted. This variety is called the *Persian Ranuncu'us.*

Var. β, sanguíneus, (D. C. prod. l. c. syst. 1. p. 262.) stem simple; leaves ternate; segments toothed, obtuse. Native of the Archipelago, Caria, Cilicia, and Syria.—Clus. hist. 1. p. 242. icon. R. sanguíneus, Mill. dict. No. 10. Flowers always double, purple, yellow, orange, and variegated with the same colours, excluding all colours verging upon white or blue. This variety is called the *Turkey Ranunculus.*

Var. γ, tenuílobus (D. C. l. c.) stem somewhat branched; leaves multifid, with linear-acute lobes. Native of the island of Cyprus. R. Creticus albo flore. J. Bauh. hist. 3. p. 862. f. 2. (ex herb. Vaill). Flowers white, yellow, rarely purple.

According to Maddock a fine *Ranunculus* should have a strong straight stem from 8 to 12 inches high. The flower should be of an hemispherical form, at least two inches in diameter, consisting of numerous petals gradually diminishing in size to the centre, lying over each other, so as neither to be too close, nor too much separated, but having more of a perpendicular than a horizontal direction, in order to display the colours with better effect. The petals, with entire well-rounded edges, their colours dark, clear, rich, or brilliant, either of one colour or variously diversified on an ash, white, sulphur, or fire-coloured ground, or else regularly striped, spotted, or mottled in an elegant manner. The varieties raised from seed are endless. Maddock, in the end of the last century, had nearly eight hundred, all with proper names, and ranged as purple, grey, crimson, red, rosy, orange, yellow, white, olive, coffee, striped, spotted, &c. No plant is more prolific in new varieties from seed; no two plants, as Maddock observes, producing flowers alike, or the same as the original. Established sorts are propagated by offsets which usually flower the first year; rare sorts may be multiplied by dividing the crown of the tuber with a sharp penknife into as many parts as there are buds: these will not flower till the second year, but will diminish the risk of losing a very rare variety.

The Ranunculus prefers a fresh loamy soil, rather than otherwise inclined to clay: it should be well manured, and it is customary in forming the beds to place a stratum of well-rotted cowdung, six or nine inches below the surface, which both retains moisture and supplies nourishment. The roots may either be planted in November or earlier, in which case, to prevent their being destroyed by the frost, they should be mulched, or they need not be planted till March. The former mode gives much the strongest bloom, as the roots when kept in air all the winter are apt to be over dried, and kept in sand they sometimes get mouldy, and in this and similar cases the progress of vegetation from the planting to the flowering period is more rapid than is natural to the plant. Ranunculus roots will retain their vegetative properties two and sometimes three years, a thing not uncommon among bulbs and tubers. In order to obtain good new varieties of this plant, seeds should be saved from the best plants of the semi-double kinds, and be sown in flat pans or boxes filled with light rich earth in August, covering them a quarter of an inch thick with the same sort of earth, placing them in a frame when frost is apprehended. In the following season, when their leaves begin to decay, the roots may be taken up and dried in the same manner as the old roots, and planted with them in October, and in the following summer they will produce flowers, when such as are good should be marked. The plants intended to flower should not be suffered to run to seed, as roots which have produced seeds seldom furnish fine flowers afterwards.

Asiatic Crowfoot, or common garden Ranunculus. Fl. May, June. Clt. 1596. Pl. $\frac{3}{4}$ foot.

25 R. JAPO'NICUS (Thunb. in Lin. soc. trans. 2. p. 337.) leaves hairy, radical ones roundish, 3-cleft, with toothed, cut lobes, upper ones cleft; stem erect, hairy, branched at the top. ♃. H. Native of Japan near Nagasaki, Jedo, and elsewhere, common in ditches. R. Asiáticus, Thumb. jap. 241. R. Langsdòrfii. Spreng. syst. 2. p. 652. All parts of the plant except the corolla are hairy. Stem flexuous, scarcely leafy, branching into peduncles at the top.

Japan Crowfoot. Pl. 1 foot.

26 R. KRA'PFIA (D. C. in Deless. icon. sel. 1. t. 35.) leaves villous, radical ones on long stalks, ovate, somewhat trifid, toothed, stem ones small, tapering to the base, trifid at the top; stem 1-flowered. ♃. H. Native of Chile about Huassa-Huassi. Krápfa ranunculìna. D. C. syst. 1. p. 228. Petals 5, from the dried specimen apparently purple, obovate, retuse nearly as in *Tróllius Europæ'us*, and about the same size, equalling the calyx in length.

Krápf's Crowfoot. Pl. 1 foot.

27 R. GUZM'ANNI (Humb. tabl. reg. equ. 69. nov. gen. 5. p. 43.) upper surface of leaves and petioles villous, radical leaves rather orbicular, trifid; lobes grossly toothed at the top; upper leaves trifid with oblong entire lobes; stem erect, pilose, few-flowered; calyx pressed, very villous. ♃. H. Native of the rocky tops of the Andes near to the Equator. Deless. icon. sel. 1. t. 34. Petals obovate, rather orbicular, scarcely longer than the calyx.

Guzmann's Crowfoot. Pl. $\frac{1}{4}$ foot.

28 R. MACROPE'TALUS (D. C. prod. 1. p. 29.) petioles furnished with a broad membrane; radical leaves orbicular, crenated, smooth, or pilose, cauline ones ovate-lanceolate, sessile; stem smooth, few-flowered; calyx pressed, much smaller than the petals. ♃. H. Native of Peru on mountains. R. cochlearifòlius, R. et P. in herb. Lamb. not Horn. Leaves large. Flowers resembling a *Tróllius* but rather larger.

Long-petalled Crowfoot. Pl. $1\frac{1}{2}$ foot.

29 R. CRE'TICUS (Lin. spe. 775.) leaves and stems hairy, radical ones stalked, cordate-orbicular, somewhat cut, toothed, stem ones sessile, 3-parted; lobes oblong obtuse, somewhat toothed at the top; stem branched, many-flowered; calyx pressed. ♃. H. Native of the islands in the Archipelago, especially in Crete, Scio, &c. Aubr. in pict. hort. par. 37. t. 97.—Clus. hist. 1. 236. f. 1. Flowers large golden. Carpels smooth, much compressed, acuminated with the permanent styles, crowded into elliptical-cylindrical heads.

Var. β, macrophýllus (Desf. atl. 1. p. 437.) leaves less villous, larger, profoundly lobed, with the teeth a little rounder. Native of Barbary, near Sbiba, on the borders of rivulets.

Cretan Crowfoot. Fl. April, May. Clt. 1658. Pl. 1 foot.

30 R. CORTUSÆFÒLIUS (Willd. enum. 588.) leaves and stem somewhat pilose; radical leaves somewhat cordate-reniform, a little lobed, broadly crenated, stem ones almost sessile, 3-5-parted, floral ones lanceolate; stem branched, corymbose; calyx spreading much. ♃. H. Native of the Canary Islands on rocks, as well as of Sicily. Deless. icon. sel. 1. t. 36.—Pict. hort. par. 37. t. 96, exclusive of the synonyms. R. heucheræfòlius, Presl. Flowers yellow, smaller than in *R. Créticus*, but larger than in *R. lanuginòsus.* Fruit as in *R. Créticus.*

Var. a, radical leaves orbicular and cordate at the base, exactly like those of *Cortùsa Mathìola*, stem ones with toothed lobes.

Var. β, Teneriffæ (Pers. ench. 2. p. 103.) radical leaves reniform, somewhat truncate at the base, scarcely cordate, cauline

ones cleft into entire lobes. Native of Teneriffe. R. Créticus, Var. b, Bir. ren. 45.

Cortusa-leaved Crowfoot. Fl. May, Ju. Clt. 1826. Pl. 1 ft.

31 R. BREVICAU'LIS (Hook fl. bor. amer. 13. t. 7. A.) pubescent; radical leaves all cordate-ovate, entire, cauline ones crenate, palmately-multifid; stem erect, many-flowered, much shorter than the leaves; fruit globose; petals 6. ♃. H. Native of North America on the shores of Lake Huron. Root grumose. Mode of growth and general aspect like *R. parnassifòlius*. Flowers yellow.

Short-stemmed Crowfoot. Pl. $\frac{1}{4}$ foot.

SECT. III. THÒRA (φθορα, *phthora*, venom or corruption; because the Swiss hunters of wild-boars use the roots of *R. Thora* to envenom their darts) D. C. prod. 1. p. 30. Carpels smooth, almost globose. Roots grumose. Flowers yellow.

32 R. THÒRA (Lin. spe. 775.) leaves quite smooth, radical ones stalked, stem ones sessile, kidney-shaped, crenated, floral ones cut; stem 2-3-flowered, smooth. ♃. H. Native of the Alps of Switzerland, Austria, Greece, Apennines, Carpathian mountains, on rocks and in pastures near to the limits of perpetual snow. Jacq. fl. aust. 5. t. 442; obs. 1. p. 25. t. 13.

The root of this plant is reported to be extremely acrid and poisonous; its juice having been used formerly by the Swiss hunters of wild beasts, to envenom their darts, whose wound, by that means, becomes speedily fatal and incurable. Hence the name from φθορα, *phthora*, corruption or venom.

Venom Crowfoot. Fl. May, June. Clt. 1710. Pl. $\frac{1}{2}$ to 1 ft.

33 R. SCUTA'TUS (Walds. and Kit. pl. hung. 2. p. 205. t. 187.) leaves very smooth, without radical ones, stem ones sessile, kidney-shaped, crenate, floral ones cut; stem 3-4-flowered, rather pilose at the base. ♃. H. Native of Hungary in mountain woods. R. Thora. Towns itin. hung. p. 354 and 490. R. Thòra, var. scutàtus, Wahl. carp. no. 551. Very like *R. Thòra*, but differing in being without radical leaves, but with the lower ones clasping the stem. Sepals very blunt. Flowers and ovaries more numerous as well as larger than those of *R. Thòra*.

Shield-leaved Crowfoot. Fl. May, June. Clt. 1817. Pl. $\frac{3}{4}$ ft.

34 R. BREVIFÒLIUS (Ten. fl. neap. prod. suppl. 2. p. 68.) leaves very smooth, radical ones coriaceous, stalked, and 3-lobed, with the intermediate lobe 3-parted, stem-leaves sessile, wedge-shaped, 3-parted; stem 1-flowered, incurved. ♃. H. Native of the kingdom of Naples, on the rocks of Mugella. Like *R. Thòra*. Petioles flexuous, with a single small leaf on each stem.

Short-leaved Crowfoot. Fl. May, Ju. Clt. 1824. Pl. 1 foot.

35 R. HY'BRIDUS (Bir. ren. 30.) leaves very smooth, radical ones on long footstalks, kidney-shaped, crenately-lobed, stem ones two, on short stalks, lobed at the apex; stem 1-3-flowered. ♃. H. Native of the Alps of Austria. R. Thòra Sturn. deutsch. fl. with a figure. Jacq. obs. 1. t. 13. Like *R. Thòra* in habit, but with roots like *R. aurícomus*.

Hybrid Crowfoot. Fl. June, July. Clt. 1820. Pl. 1 foot.

SECT. IV. HECATÒNIA, (from ἑκατον, *hekaton*, a hundred; a name used by Loureiro to denote a number of germs) D. C. prod. 1. p. 30. Carpels smooth, roundish-ovate, disposed in a roundish head. Roots fibrous.

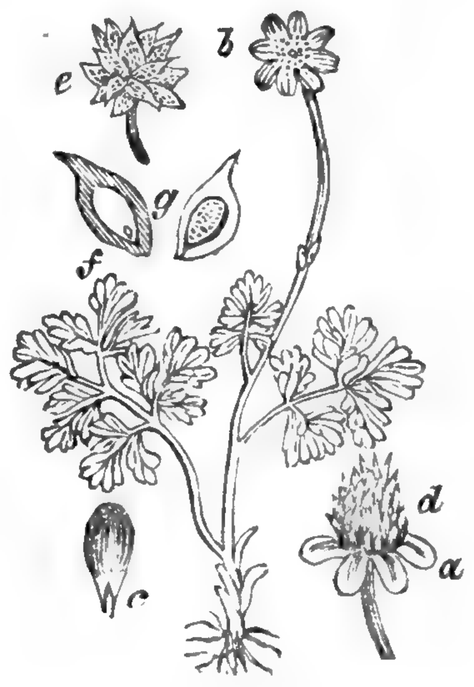
§ 1. *Flowers white. Leaves dissected.*

36 R. BITERNA'TUS (Smith, in Rees's cyclop. no. 48.) stem creeping; leaves 3-parted, with the partitions 3-lobed; lobes oblong, acute, entire or somewhat toothed; petals oblong, equal in length with the calyx. ♃. H. Native of the Straits of Magellan in water. A very small, slender, many-stemmed plant. Leaves on long stalks. Flowers smaller than those of *R. aquátilis*. Petals blunt, with a yellow claw.

Biternate-leaved Crowfoot. Fl. July. Pl. $\frac{1}{4}$ foot.

37 R. RUTÆFÒLIUS (Lin. spec. 777.) leaves pinnate, with 3-lobed multifid lobes; stem generally 1-flowered; calyx glabrous; petals 8-10 with a two-coloured claw. ♃. H. Native of the higher Alps of Europe among rocks near the limits of perpetual snow. Wulf. in Jacq. coll. 1. p. 186. t. 6, 7. All. pedem. no. 1451. t. 67. f. 1. Stem very rarely bearing 2 or 3 flowers. Petals oblong with an orange claw. (f. 9.)

FIG. 9.



Rue-leaved Crowfoot. Fl. May, Jul. Clt. 1759. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

38 R. ISOPYROÌDES (D. C. syst. 1. p. 238.) radical leaf pinnate with stalked twice trifid segments, cauline ones ternate; calyx smooth; petals 5, oval. ♃. H. Native of Siberia near the Lake Baikal. R. fumariæfòlius Fisch. in litt. Very like *R. rutæfòlius*. Petals sometimes beyond 5, twice as long as calyx. Peduncles 2 or 3, rising from the axillæ of the upper leaves or terminal. Ovaries 8-10, smooth.

Isopyrum-like Crowfoot. Fl. May, Ju. Clt. 1818. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

39 R. GLACIA'LIS (Lin. spec. 777.) radical leaves stalked, palmately 3-parted or ternate, with trifid lobes and bluntish lobules; stem generally 1-flowered; calyx very hairy; carpels compressed, marginate. ♃. H. Native of the higher Alps of Europe from Austria to Provence, Pyrenees, Hungary, Lapland, Iceland, &c. among rocks near the limits of perpetual snow. Wulf. in Jacq. coll. 1. p. 189. t. 8, 9. f. 1, 2. Scape 1-3-flowered. Leaves usually smooth, but the upper ones are sometimes villous. Petals somewhat orbicular, bluntly emarginate, length of calyx white or reddish, suffused with purple. Flowers seldom double.

Var. β? aconitoìdes (D. C. prod. 1. p. 30.) segments of leaves cuneated, acutely cut at the apex. A. hybrid, between *R. glaciàlis* and *R. aconitifòlius*.

Icy Crowfoot. Fl. Ju. Aug. Clt. 1775. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

40 R. CHAMISSÒNIS (Schlecht. anim. ran. 1. p. 12. t. 1.) radical leaves stalked, 3-parted; partitions cuneated, 3-lobed; lobes entire, bluntish; calyx very hairy; carpels oval, bladdery, acuminated, curved at the base. ♃. H. Native at the bottom of Icy Mountains in the Bay of St. Laurence. Stem 1-flowered.

Chamisso's Crowfoot. Pl. $\frac{1}{2}$ foot.

41 SEGUIE'RI (Vill. dauph. 4. p. 735. t. 49.) leaves 3-parted, with acute or bluntish entire trifid partitions; stem generally 1-flowered; calyx smooth; petals 5, entire. ♃. H. Native of the Alps of Provence, Dauphiny, Piedmont, Carniolia, in the fissures of rocks near the limits of perpetual snow. R. Colúmnæ, All. pedem. 1453. t. 67. f. 3, 4. Like *R. glaciàlis* and *alpéstris*. Floral leaves small, sessile, entire, or trifid. Stem from 1-3-flowered, villous under the flower. Calyx sometimes hairy. Petals orbicular, entire, longer than the calyx.

Seguier's Crowfoot. Fl. June, Jul. Clt. 1819. Pl. $\frac{1}{2}$ foot.

42 R. ALPE'STRIS (Lin. spec. 778.) leaves orbicular, cordate, 3-lobed, with the lobes deeply crenate at the apex, blunt; stem usually 1-flowered; calyx smooth; petals 5, obcordate or 3-lobed. ♃. H. Native of the Carpathian mountains, Pyrenees, and Alps of Jura, &c. on rocks and in the higher pastures. In Scotland in moist places, about two or three rocks on the Clova mountains in Angushire. The leaves are sometimes hardly trifid, sometimes trifid, sometimes 3-parted. Flowers varying in size, either single or double. Petals obcordate or 3-lobed. Smith, eng. bot. 2390. Jacq. aust. t. 110.

Haller says this is one of the most acrid of its tribe, blistering

the skin; and yet Alpine hunters chew it by way of refreshment, as removing fatigue and preventing giddiness.

Var. β, Magellénsis (Ten. cat. hort. app. 1. p. 53.) differs from var. α, in the lobes of the leaves being crenate, not 3-parted.

Var. γ, Traunfelnèri (Hopp. Jahrg. 1819. 731. ex icon. Schlecht. anim. ran. 2. p. 6.)

Alp Crowfoot. Fl. Ju. Aug. Scotland. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

43 R. CRENA'TUS (Waldst. & Kit. pl. hung. p. 119. t. 10.) leaves cordate, roundish, crenate at apex; stem 1-flowered; calyx smooth; petals 5, obcordate, crenate at apex. 4. H. Native in moist places on the mountains of Hungary, near the limits of perpetual snow. Like *R. alpéstris*, but with the scape always 1-flowered, and the petals are furnished with a melliferous pore at their base, not with a scale.

Crenate-petalled Crowfoot. Fl. Ju. Aug. Clt. 1818. Pl. $\frac{1}{2}$ ft.

44 R. ACONITIFÒLIUS (Lin. mant. 79.) leaves palmate, 3-5-parted, with the partitions deeply toothed; upper leaves sessile, cleft into linear-lanceolate lobes; stem branched, many-flowered; bracteas lanceolate serrated; calyx pressed, smooth. 4. H. Native of middle Europe, in moist pastures on the higher mountains, particularly in Holland, Germany, Hungary, and north of Italy, &c. This plant varies much in size, according to the places of its natural growth; on the tops of the highest mountains it does not attain the height of three inches, but in the lower valleys it attains the height of two feet. In shady places it becomes smooth, but in dry situations it is downy. Flowers sometimes few sometimes numerous, with oblong cuneated or orbicular petals, with a linear scale at the base of each.

Var. α, hùmilis (D. C. syst. 1. p. 240.) radical leaves 3-5-parted; stem slender, glabrous. 4. H. R. aconitifolius, Lin. mant. 79.—Mor. hist. 3. p. 462. sect. 12. t. 2. f. 3. 5.

Var. β, crassicaúlis (D. C. l. c.) radical leaves 3-parted; stem thickish, clothed with pressed hairs at the top. 4. H. Native of the Pyrenees in moist places by the sides of rivulets. R. heterophýllus, Lapeyr. abr. 316. but not of Smith. This variety may prove a distinct species.

Aconite-leaved Crowfoot. Fl. May, Ju. Clt. 1596. Pl. $\frac{1}{2}$ to 2 ft.

45 R. PLATANIFÒLIUS (Lin. mant. 79. Fl. dan. t. 111.) plant tall; radical leaves with 5-7 acuminated toothed lobes; upper leaves sessile, cleft into linear-lanceolate lobes; stem branched, many-flowered; calyx pressed, smooth; bracteas linear entire. 4. H. Native of many parts of Europe on low mountains in bushy places. R. aconitifòlius var. δ, platanifòlius, D. C. syst. 1. p. 241.

There is a variety of this with double flowers, which is very common in our gardens under the name of *Double white Batchelors' Buttons* and *Fair Maids of France*. R. aconitifòlius, β, flòre plèno. Curt. bot. mag. t. 204.

Var. β, dealbàtus, radical leaves with 7 toothed lobes, whitish on the under surface; cauline leaves 3-lobed. 4. H. Native of the Pyrenees in the crevices of calcareous rocks. R. dealbàtus Lapeyr. abr. p. 315. R. platanifòlius, var. ε, D. C. syst. 1. p. 241.

Var. γ, intermèdius, plant tall; radical leaves 3-parted. 4. H. Native of the woods of Cevennes. A. platanifòlius, var. γ, intermèdius, D. C. syst. 1. p. 240.

Platanus-leaved Crowfoot. Fl. May, Ju. Clt. 1596. Pl. 1 to 2 ft.

46 R. TERNA'TUS (Thunb. fl. jap. 241.) leaves all ternate with ovate, trifid, toothed, segments; stem rather hairy, many-flowered; calyx reflexed. 4. H. Native of Japan in the island of Nipon. Deless. icon. sel. 1. t. 25. Very like *R. aconitifòlius, var. β.* leaves all stalked of a deep green, with the upper surface pubescent as well as the nerves on the under surface. Flowers small, on short pedicels.

Ternate-leaved Crowfoot. Fl. May, June. Pl. 1 foot.

47 R. LA'CERUS (Bell. in act. turin. 5. p. 233. t. 8.) leaves wedge-shaped, irregularly and acutely cut; stem smooth, branched, many-flowered; calyx pressed. 4. H. Native of the Alps of Valais, Dauphiny, Piedmont in fertile pastures but very rare. R. Pyrenæ'us. var. Vill. dauph. 4. p. 733. R. Vallesiàcus Sut. fl. helv. 1. p. 325. R. laciniàtus. Guid. herb. valais. p. 177. This plant is considered a hybrid, between *R. aconitifòlius* and *R. Pyrenæ'us*, because the carpels in cultivated plants have always been observed to be empty.

Var. β, pállidus (D. C. prod. 1. p. 31.) flowers pale yellow, not white. R. frigidus, Schrank. hort. monac. t. 57. but not of Willd. This is a Hybrid between *R. graminifòlius* and *R. aconitifòlius* according to Stoffels.

Torn-leaved Crowfoot. Fl. Ju. Jul. Clt. 1821. Pl. $\frac{1}{2}$ to 1 ft.

§ 2. *Flowers white. Leaves undivided.*

48 R. PYRENÆ'US (Lin. Mant. 248.) leaves linear or lanceolate, quite entire; scapes and peduncles downy at the top. 4. H. Native of the highest Alps of Europe, particularly in the Pyrenees near the limits of perpetual snow, common. Deless. icon. sel. 1. t. 27.—Mor. hist. 2. p. 445. sect. 4. t. 30. f. 4.? R. amplexicaúlis, var. γ, Gouan ill. 34.

Var. β, bupleurifòlius (D. C. syst. 1. p. 243.) stem 1-flowered; leaves lanceolate. 4. H. Native of the Pyrenees in moist places in the valleys of the lower hills. R. Pyrenæ'us, Jacq. misc. 1. p, 154. t. 18. f. 1. R. bupleurifòlius, Lapeyr. abr. 314. R. lanceolàtus. Guid. herb. valais. p. 177.

Var. γ, plantagíneus (All. pedem. no. 1445. t. 76. f. 1. but not of Pers.) stem many-flowered; leaves lanceolate. 4. H. Native of Piedmont.

Pyrenean Crowfoot. Fl. May, July. Clt. 1807. Pl. $\frac{1}{2}$ to 1 ft.

49 R. ANGUSTIFO'LIUS (D. C. rapp. voy. 1. p. 74. syst. 1. p. 243.) leaves linear, or rather lanceolate, glaucous, not stem-clasping; scapes and peduncles smooth. 4. H. Native of the Eastern Pyrenees about Mount Louis. Deless. icon. sel. 1. t. 27. R. amplexicaúlis, β. D. C. fl. fr. ed. 3. vol. 4. p. 889. R. Pyrenæ'us, α, Lapeyr. abr. pyr. 313. exclusive of the synonyms. An intermediate plant between *R. amplexicaúlis* and *R. Pyrenæ'us*, differing from the first in the peduncles being smooth, not downy, with smaller flowers; from the last in the leaves not clasping the stem, narrower. Scape 1-2 or 3-flowered.

Narrow-leaved Crowfoot. Fl. April, May. Clt. 1822. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

50 R. AMPLEXICAU'LIS (Lin. spec. 774.) leaves oval-lanceolate, acuminated, clasping the stem; scapes and peduncles smooth. 4. H. Native of the Alps of Europe, Provence, Apennines, Pyrenees, Iceland, and on the mountains of Leon in Spain, in high moist rocky situations. Curt. bot. mag. t. 226. Deless. icon. sel. 1. t. 27. f. c. R. plantaginifòlius, Sal. prod. 372. Leaves smooth, or with a few deciduous hairs on the edges, glaucous. Stem 3-6-flowered. Flowers snowy white, but when growing near the limits of perpetual snow they are said to be purplish, seldom double.

Stem-clasping-leaved Crowfoot. Fl. April, May. Clt. 1633. Pl. $\frac{1}{4}$ to $\frac{3}{4}$ foot.

51 R. PARNASSIFO'LIUS (Lin. spec. 774.) radical leaves stalked, rather heart-shaped, ovate-roundish, cauline ones sessile, ovate-lanceolate; peduncles hairy. 4. H. Native of the Alps and the Pyrenees, in the fissures of rocks contiguous to perpetual snow. Wulf. in Jacq. coll. 1. p. 191. t. 9. f. 3. Rœm. fl. europ. fasc. 5. icon. Hoh and Rein. itin. p. 190. Curt. bot. mag. 386. R. cordàtus, Guid. herb. valais. 177. Leaves somewhat coriaceous, with the foot-stalks much dilated at their base. Stem 1-6-flowered. Flowers snowy-white, sometimes purplish about the size of those of *R. amplexicaúlis*.

Var. β, parviflòrus (D. C. syst. 1. p. 244.) leaves acutish; flowers smaller. 4. H. Native of the Alps of Valais. *Schleicher.* Flowers always white.

Parnassia-leaved Crowfoot. Fl. Ju. Jul. Clt. 1769. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

§ 3. *Flowers yellow. Leaves undivided.*

52 R. GRAMÍNEUS (Lin. spec. ed. 1. p. 549. ed. 2. p. 773.) leaves lanceolate, linear, quite entire; stem erect, quite smooth, with fibres at the neck; scales of petals tubular; root fascicled. 4. H. Native of France, Valais, Spain, and Portugal, in argillaceous fields and meadows; in Britain, in dry alpine pastures of Wales. Curt. bot. mag. t. 164. Boiss. fl. eur. t. 380. Smith, engl. bot. t. 2306.—Bull. herb. t. 123. Plant somewhat glaucous, and smooth. Scape 1-3-flowered. R. amplexicaúlis, Gouan. hort. monsp. 265, exclusive of the synonyms of Linnæus. R. graminifòlius, Sal. prod. 372.

Var. α, lineàris (D. C. syst. 1. p. 245.) leaves linear.—Tab. icon. 51. f. 1.—Mor. hist. 2. p. 244. sect. 4. t. 30. f. 38.

Var. β, phœnicifòlius (D. C. l. c.) leaves lanceolate.—Moris. hist. 2. p. 445. sect. 4. t. 30. f. 39.

Var. γ, horténsis (D. C. l. c.) leaves linear-lanceolate; flowers double. Mor. hist. 2. p. 445. Perhaps this is nothing more than the double flowering variety of *R. língua*.

Grassy-leaved Crowfoot. Fl. Ap. June. Wales. Pl. $\frac{1}{2}$ to 1 foot.

53 R. LONGICAU'LIS (Ledeb. in litt. ex. Spreng.) leaves all nervous, obtuse, quite entire, and smooth, radical ones oblong-lanceolate on long stalks, stem ones linear, half-stem-clasping; stem tall, simple, rather pilose towards the top, few-flowered; sepals adpressed, rather hairy, about equal in length to the corolla. 4. H. Native of Russia on mount Imaus. This species differs from *R. gramíneus*, in the stem being almost simple, as well as in the radical leaves being broader and stalked, and in the petals being equal in length to the corolla, not longer.

Long-stemmed Crowfoot. Pl. 1 foot.

54 R. BUPLEUROÌDES (Brot. fl. lus. 2. p. 365.) radical leaves ovate-lanceolate, stalked, 3-5-nerved, quite entire; stem erect, woolly at the bottom; scales of petals tubular; root fascicled. 4. H. Native of Portugal on hills in Beira. R. plantagíneus, Pers. ench. 1. p. 102. but not of All. R. gramíneus, var. β, Bir. ren. 36. Like *R. gramíneus*, but differing in the stems being woolly at the base, and in the leaves being ovate-lanceolate, not linear-lanceolate.

Bupleurum-like. Fl. May. June. Pl. $\frac{1}{2}$ to 1 foot.

55 R. LI'NGUA (Lin. spec. 772.) leaves lanceolate, serrated, sessile, half-stem-clasping; stem erect, smooth; root creeping. 4. H. Native throughout the whole of Europe, Siberia, and North America, from Pennsylvania to Virginia, in marshes, fountains, and bogs. Smith, engl. bot. t. 100. R. palústris.—Weinm. phyt. t. 846. f. c. R. longifòlius, Lam. fl. fr. 3. p. 189. Great Spear-wort. Pet. engl. herb. t. 39. f. 5. Like *R. flámmula*, but larger in all its parts, and more rigid. Leaves entire, or toothed. Flowers sometimes double.

Var. β, grácilis (Schlecht. anim. ran. p. 17.) stem slender; leaves linear-lanceolate; flowers small.

Var. γ, laciniàtus (Schlecht. anim. ran. p. 17.) leaves jagged.

Tongue-leaved Crowfoot, or Great Spear-wort. Fl. May, Aug. Britain. Pl. 1 to 2 feet.

56 R. FLA'MMULA (Lin. spec. 772.) leaves smooth, linear-lanceolate, or somewhat ovate, almost entire, lower ones stalked; stem declinate, solid, throwing out roots at the joints; peduncles opposite the leaves; carpels smooth. 4. H. Native throughout the whole of Europe, North Asia, North Africa, and North America, in wet and boggy places. Smith, eng. bot. 117. Curt. fl. lond. t. 37. fl. dan. t. 572. Bull, herb. t. 12. Small Spear-wort. Pet. eng. herb. t. 39. f. 6. Differing from *R. lingua* in the stems being declinate, not erect, and rooting at the joints; solid, not fistular, from *R. reptans* in throwing out roots only at the lower joints of the stem. Flowers sometimes semi-double. Dr. Withering recommends the distilled water as an instantaneous emetic in cases of poison. He does not mention the dose. Lightfoot says the bruised leaves of this plant are used in many parts of the Highlands of Scotland, particularly in the isle of Skye and other places upon the coast, for the purpose of raising blisters. It is applied in one or more limpet shells to the part where the blisters are to be raised.

Var. β, serràtus (D. C. syst. 1. p. 247.) leaves all serrated. 4. H. Not so common as the first.—Mor. hist. 2. p. 442. sect. 4. t. 29. f. 35.

Var. γ, ovàtus (D. C. l. c.) leaves all ovate and stalked. 4. H. Very rare. R. ovàtus, Pers. ench. 2. p. 102.

Var. δ, arenàrius (D. C. l. c.) radical leaves ovate-lanceolate, stiff, cauline ones linear. 4. H. Native in sandy wet places about Bayonne. R. flammuloìdes of Rafin, is hardly distinct from this variety. R. lanceolàtus, Pall. herb.

Var. ε, intermèdius (Hook. fl. bor. amer. p. 11.) stem creeping, slender; leaves narrow-lanceolate, upper ones linear, quite entire. 4. H. Native of the gravelly banks of rivers from Canada to Lat. 69. and Newfoundland.

Flame Crowfoot or Lesser Spear-wort. Fl. June, Sep. Britain. Pl. $\frac{1}{2}$ to 1 foot.

57 R. RE'PTANS (Lin. spec. 773.) leaves linear, entire, smooth; stem creeping, and rooting at every joint; carpels smooth. 4. H. Native of Switzerland, Germany, Denmark, Sweden, Norway, Russia near Petersburgh on the banks of the river Neva, Siberia, and China near Pekin; in sandy wet places on the borders of lakes and rivers; in Britain, on the margins of alpine lakes. Lin. fl. lapp. 236. t. 3. f. 5. Fl. dan. t. 108. Light. fl. scot. f. in title. R. flámmula, var. δ, Smith, engl. fl. 3. p. 45. This plant is supposed to be a variety of *R. flámmula*, merely arising from the nature of the places where it grows wild, nevertheless it differs in the stems being filiform and rooting at every joint, as well as in the linear leaves, and much smaller flowers.

Var. β, filifórmis (Mx. fl. bor. amer. 1. p. 320.) leaves linear awl-shaped, obtuse; stems rooting at every joint. 4. H. Native of North America, in inundated places along the gravelly banks of the rivers, from Canada to Lat. 69, Hudson's Bay and Labrador. Pursh. fl. bor. amer. 2. p. 392. ? R. flámmula, γ, filifórmis, Hook. fl. bor. amer. p. 11.

Creeping Crowfoot or Spear-wort. Fl. Ju. Sep. Brit. Pl. $\frac{1}{8}$ ft.

58 R. NA'TANS (N. E. herb. Lamb.) plant floating; leaves on long stalks, which sheath the stem at their base, lanceolate, entire, or a little toothed, sometimes bifid; petals blunt, longer than the stamens and sepals. 4. W. H. Native of Mexico. Flowers axillary and terminal, small, yellow. Allied to *R. flámmula*.

Floating Crowfoot. Pl. flt.

59 R. PUSÍLLUS (Poir. dict. 6. p. 99.) leaves all on long stalks, with the lower ones ovate, a little toothed, and with the upper ones linear-lanceolate; stems many, erect; pedicels opposite the leaves; petals length of calyx. 4. H. Native of Carolina on the margins of fountains, and in low watery places on heaths. R. flámmula, Walt. fl. carol. 158. R. hùmilis, Pers. ench. 2. p. 102. Like *R. flámmula*, but differing in the roots being fibrous, and in the foot-stalk being 6-times longer than the leaf, as well as in the flowers being 3-times smaller; carpels ovate, compressed, granular.

Small Crowfoot. Fl. June, Aug. Pl. $\frac{1}{2}$ foot.

60 R. POLYPHY'LLUS (Willd. spec. 2. p. 1331.) leaves very numerous on the stem, collected in whorles, emersed ones stalked, ovate, rather 3-lobed, immersed ones rather filiform. ⊙. H. W. Native of Hungary in bogs and in water. Hayne, term. bot. t. 28. f. 3. Waldst. and Kit. hung. 1. p. 44. t. 45. Stem branched at the top, many-flowered. Flowers having either 5-petals or 3-petals. Perhaps a species of *Casàlia*.

Many-leaved Crowfoot. Fl. May, June. Pl. flt.

61 R. PULCHE'LLUS (Ledeb. in litt. ex. Spreng.) radical leaves ovate, acute, a little 3-toothed at the apex, on long petioles, cauline ones linear, stem-clasping, cut, upper ones 3-parted; stem simple, few-flowered; sepals much smaller than the corolla, and are villous as well as the peduncles. ♃. H. Native of Dahuria on Mount Imaus.

Neat Crowfoot. Pl. 1 foot.

62 R. SALSUGINÒSUS (Pall. itin. ed. 3rd. vol. 3. p. 173.) radical leaves stalked, oval, or somewhat cordate, 3-5-toothed at the apex; scapes naked, 1-flowered, erect; petals oblong, cuneated, longer than the calyx. ♃. H. Native of the Russian empire, especially in Siberia and Dahuria not far from Mount Odon-Tchelon, in salt marshes. Root fascicled, fibrous, emitting from the neck numerous filiform creeping flagellæ. Flowers about the size of those of *R. lanuginòsus*. Carpels ovate, oblong, longitudinally striped, awned, with the short straight styles.

Salt-marsh Crowfoot. Fl. April, July. Clt. 1822. Pl. ½ foot.

63 R. HYDROPHÌLUS (Gaudich. ex. Spreng. syst. app. p. 219.) stem creeping, floating; radical leaves orbicular-ovate, on very long petioles; peduncles 1-flowered. ♃. H. W. Native of the Falkland islands.

Water-loving Crowfoot. Pl. ½ foot.

64 R. CYMBALA'RIÆ (D. C. syst. 1. p. 252.) radical leaves stalked, smooth, ovate-orbicular, rather fleshy, deeply crenated; scapes 1-3-flowered, ascending, emitting flagellæ from the neck; petals linear, length of calyx. ♃. H. Native of Siberia about the Baikal abundant, and at the rivers Jenisee and Oby, as well as about Barnaoul, in salt-marshes. R. nànus, Fisch. in litt.—Amman, Ruth. 81. no. 107. t. 13. f. 2. Like *R. salsugìnosus*, but differs in its much smaller size, and in the leaves being more orbicular, and crenated all round the margin, as well as in the petals being linear, not oblong-cuneated.

Var. β, Americànus (D. C. syst. 1. p. 252.) R. cymbalariæ, Pursh. fl. bor. am. 2. p. 392. Smith, in Rees, cyclop. ♃. H. Native in Salem, Massachusetts; marshes near the salt works of Onondago, New York, and from Canada to near the Arctic sea, and from Hudson's Bay to the summits of the Rocky Mountains in marshy and shady places. The flowers of this plant are said to be sometimes white, and heads of carpels oblong, otherwise it is hardly distinguishable from the Siberian plant.

Var. γ, alpìnus (Hook. fl. bor. amer. p. 11.) plant smaller; leaves 3-toothed at the apex; scape 1-flowered. Native of the Rocky Mountains, North America.

Boat-shaped-leaved Crowfoot. Fl. Ju. Jul. Clt. 1824. Pl. ¼ ft.

65 R. HALOPHILUS (Schlecht. anim. ran. p. 23. t. 4. f. 1.) radical leaves stalked, smooth, rather fleshy, cuneated, 3-toothed at the apex; runners rising from the neck of the stem; scapes 1-flowered, almost twice as long as the petioles; petals obovate, cuneated, longer than the calyx. ♃. H. Native of Siberia. A very small smooth plant. Calyx 5-sepalled; corolla 5-petalled. Carpels terminated by a hooked beak, disposed in an ovate head.

Salt-loving Crowfoot. Pl. 2 inches.

66 R. JAVA'NICUS (Blum. bijd. ex. Spreng. syst. app. p. 218.) leaves all stalked, cordate-ovate, crenate, upper ones lanceolate or trifid; peduncles opposite the leaves, 1-flowered; petals twice as long as the calyx. ♃. S. Native of Java.

Java Crowfoot. Pl. ¼ foot.

67 R. FONTA'NUS (Presl. ex. Spreng. syst. app. p. 218.) stem ascending, fistular; leaves toothed, lower ones stalked, cordate-ovate, blunt; upper ones linear-oblong, tapering into the petiole; peduncles opposite the leaves; petals longer than the calyx. ♃. H. W. Native of Sicily.

Fountain Crowfoot. Pl. ¼ foot.

68 R. TRIDENTA'TUS (H. B. et Kth. nov. gen. et spec. amer. 5. p. 42.) radical leaves stalked, smooth, somewhat fleshy, ovate, 3-toothed at the apex; scapes 1-2-flowered, smooth, length of petioles; petals linear, longer than the calyx. ♃. S.

Var. α, màjor (H. B. l. c.) ♃. S. Native of Mexico, near Carpio. R. stoloníferus, Lamb. herb.

Var. β, mìnor (H. B. l. c.) ♃. S. Native of Latacunga. Furnished with creeping flagillæ, but sometimes without.

Three-toothed-leaved Crowfoot. Fl. June, July. Pl. ⅛ foot.

69 R. NUBI'GENUS (H. B. and Kth. nov. gen. and spec. amer. 5. p. 42.) radical leaves stalked, almost orbicular, 7-toothed, smooth, rather fleshy; scape almost naked, generally 2-flowered, pubescent at the top; bracteas linear, somewhat 3-toothed. ♃. F. Native of Peru, on Mount Antisana. A very small and very smooth herb, with very small flowers, and a pressed calyx.

Cloud Crowfoot. Pl. 1 inch.

70 R. BREVISCA'PUS (D. C. syst. 1. p. 253.) radical leaves stalked, orbicular, cordate, 3-5-cleft; scapes 1-flowered, shorter than the foot-stalks, emitting flagellæ from the neck. ♃. F. Native of Peru. Flowers small, with pressed calyxes and obtuse petals. This plant is poisonous to animals, and is therefore called *Centélla*, according to Dombey.

Short-scaped Crowfoot. Pl. ¼ foot.

71 R. PALLA'SII (Schlecht. anim. ran. 1. t. 2.) stem creeping, fistulous; leaves all stalked, oval or obovate, cuneated, 3-parted; calyx 3-sepalled; flowers 8-petalled; carpels thick, ovate smooth, beaked, disposed into a round head. ♃. H. Native of North America, on the western coast, in marshy places; beyond Behring's Straits, in the bays of Eschscholtz and Good Hope, and in the little island St. George, to the north of the Aleutian Islands. Habit of *R. flámmula*, quite smooth.

Pallas's Crowfoot. Pl. ½ foot.

§ 4. *Flowers yellow. Leaves dissected.*

72 R. AURÍCOMUS (Lin. spec. 775.) leaves smooth, radical ones stalked, cordate, generally 3-parted, or 3-lobed, stem ones divided to the base, into linear, entire, or toothed lobes, calyx pubescent, shorter than the petals. ♃. H. Native of most parts of Europe, also of Siberia, Caucasus, Japan, and Pennsylvania, in dry woods, bushy, and shady places. Plentiful in Britain. Smith, engl. bot. t. 624. Curt. fl. lond. fasc. 2. t. 41. Fl. dan. t. 665. Stem branched, many-flowered. Calyx coloured, assuming the aspect of petals; hence its specific name *auricomus*, with a pore at the base of each. This species having no acrimony has been termed *dulcis*, or *sweet-wood Crowfoot*. The great and constant diversity in the leaves, especially the narrow linear shape of the upper ones distinguish it readily.

Var. β, procèrior (D. C. syst. 1. p. 267.) ♃. H. Native of Hungary. R. Cassùbicus, Geners. elench. scepus. ex. Wahlenb.

Var. γ, apétala (D. C. prod. 1. p. 34.) petals wanting; calyx coloured, assuming the aspect of petals. ♃. H. Native of Thuringia.

Golden-haired Crowfoot, or Goldilocks. Fl. April, May. Britain. Pl. 1 foot.

73 R. CASSU'BICUS (Lin. spec. 775.) leaves smooth, radical ones stalked, kidney-shaped, crenated, stem ones divided into linear serrated lobes; calyx pubescent, shorter than the petals. ♃. H. Native of Prussia, Russia, and Siberia in moist meadows. Sims, bot. mag. 2267. R. renifórmis, Gilib. in ust. del. 2. p. 240. R. auricomus, var. β, Bir. ren. p. 39. Very like *R. aurícomus*, but differing in the radical leaves being crenated, not lobed, and in the lobes of the upper leaves being always serrated.

Cassubian Crowfoot. Fl. June, Jul. Clt. 1794. Pl. ½ foot.

74 R. ABORTÌVUS (Lin. spec. 776.) leaves smooth, radical ones stalked, cordate, orbicular, crenated, some 3-parted, stem ones divided into 3-5 oblong linear lobes; calyx smooth, rather longer

than the petals. 4. H. Native of North America in wet places on the sides of ponds and ditches, from New York to Carolina; on the declivities of the Rocky Mountains; Newfoundland. R. aurícomus. Var. c. Bir. ren. p. 39. Flowers small.

Var. β, *nítidus* (Walt. fl. car. p. 159.) 4. H. Native in most meadows about New York, and in muddy places on the side of rivulets about Wilmington. Plant larger. Peduncles more elongated. Calyx pilose, more spreading.

Abortive Crowfoot. Fl. May, Aug. Clt. 1713. Pl. 1 ft.

75 R. RHOMBOÌDES (Goldie in edinb. phil. journ. 6. p. 329. t. 11. f. 1.) plant hairy-pubescent; radical leaves rhomboid, serrated, or entire, cauline ones palmate, floral ones profoundly jagged; calyx spreading, pilose. 4. H. Native of North America, common in the western parts of Canada, at Lake Simcoe, Upper Canada. R. ovalifòlius. herb. Lamb.

Rhomb-leaved Crowfoot. Pl. ½ foot.

76 R. GLABE'RRIMUS (Hook, fl. bor. amer. p. 12. t. 5. A.) leaves all stalked, radical ones roundish, quite entire, or coarsely 3-toothed, cauline ones somewhat cuneated, trifid; calyx spreading, one half shorter than the petals; heads of carpels globose. 4. H. Native of North America, common on the mountains round the Kettle Falls and on the Rocky Mountains near the limits of perpetual snow. Plant quite smooth. Petals 5, oval, yellow.

Very smooth Crowfoot. Pl. ½ foot.

77 R. CARDIOPHY'LLUS (Hook, fl. bor. amer. 14. t. 5. B.) plant pubescent, hairy; radical leaves roundish-cordate, crenate, and multifid, cauline ones palmately multifid; lobes linear deeply crenate; calyx spreading one half shorter than the corolla; heads of carpels oblong. 4. H. Native of North America in alpine prairies of the Rocky Mountains. Flowers large, golden. Carpels roundish, small, compressed, terminated by longish, hooked beaks.

Heart-leaved Crowfoot. Pl. 1 foot.

78 R. ANGULA'TUS (Presl. ex Spreng. syst. app. p. 219.) stem branched, clothed with close-pressed hairs; radical leaves on long stalks, cordate-roundish, angular-lobed, toothed, stem ones 3-parted, deeply toothed; carpels beaked, quite smooth. 4. H. Native of Sicily.

Angular-leaved Crowfoot. Pl. 1 foot.

79 R. SCELERA'TUS (Lin. spec, 776.) leaves smooth, radical ones stalked, 3-parted, with 3-lobed lobes, and bluntly toothed; upper leaves 3-parted, with oblong linear entire lobes; floral leaves oblong: calyx smooth; carpels small collected into an oblong spike. ⊙. H. M. Native throughout Europe, also in Siberia, Cochin China, Nipaul, North of Africa, and North America, in watery places. Smith eng. bot. t. 681. Curt. fl. lond. 2. t. 42. Fl. dan. t. 571. R. digitàtus Gilib. exerc. phyt. t. 373. Hecatònia palústris. Lour. fl. cochin. 371. Stem branched, hollow. Flowers smlal. The bruised herb is said to raise a blister, which is not easily healed, and by which strolling beggars sometimes excite compassion. When chewed it inflames the tongue, and when taken into the stomach, it produces violent effects. It is suspected to have proved poisonous to sheep. It is one of the most virulent of our native plants. The distilled water of this species is intensely acrimonious, and when cold deposits crystals, which are scarcely soluble in any menstruum, and are of an inflammable nature. The acrimony of the herb being wholly expelled in decoction, accordingly the shepherds in Wallachia boil and eat it.

Var. β, *umbellàtus* (Roxb. in Willd. enum. 588.) spikes of carpels more oblong. ⊙. H. M. Gathered by Dr. Roxburgh in the Botanic Garden of Calcutta.

Var. γ, *mínimus* (D. C. syst. 1. p. 268.) stem dwarf; radical leaves trifid. ⊙. H. W. Native of Tauria.

Hurtful or Water Crowfoot. Fl. Ju. Aug. Brit. Pl. ½ to 2 ft.

80 R. OVA'LIS (Rafin. in journ. bot. 1814. vol. 2. p. 268.)

Hook fl. bor. amer. 13. t. 6. B.) pubescent; radical leaves stalked, cordate, ovate, crenated, rarely cleft, pilose, stem ones sessile, digitate, with linear, pilose segments; stem erect, spreading, branched, pilose; carpels turgid, obovate, smooth, scarcely beaked, collected into a round head. 4. H. Native of North America in alpine prairies on the Rocky Mountains, and about Carlton House. Peduncles lengthening, when in fruit, to 3 inches, striated, swelling upwards. Calyx reflexed, pubescent; equal in length to the corolla.

Oval-leaved Crowfoot. Fl. May, Ju. Clt. 1826. Pl. ½ ft.

81 R. INUNDA'TUS (R. Br. prod. nov. holl. 2. ined.) leaves smooth, radical ones stalked, 5-parted, with trifid lobes and linear lobules which are 3-toothed at the top; stem erect, 2-4-flowered, almost naked; peduncles opposite the leaves; calyx smooth, rounded. ⊙. H. Native of New South Wales at Williams' river. Herb smooth, erect, slender. Flowers small. Sepals with membranous margins.

Inundated Crowfoot. Fl. June, Aug. Pl.?

82 R. PU'RSHII (Hook fl. bor. amer. p. 15. t. 7. B.) submersed leaves, capillary-multifid; emersed ones kidney-shaped, 3-5-parted with variously cut lobes; stem elongated, floating; sepals reflexed, twice shorter than the corolla; carpels terminated by the ensiform straight styles; heads rather globose. 4. H. W. Native of North America throughout the eastern and prairie districts to near the Arctic sea, upper Louisiana, &c. Never observed floating in deep water, but sometimes spreading over the surface of sphagnous bogs, more generally creeping on mud in very sheltered pools of water, in shady places. Flowers yellow. This aquatic plant has a very similar habit with *R. aquátilis*, and, like it, varies exceedingly in the length of the stems and the shape of the leaves, according to its situation in deep or shallow water, in more or less flowing streams, and on the almost dry mud.

Var. α, *multífidus* (Ph. fl. amer. sept. 2. p. 736.) leaves all capillary-multifid; flowers larger; stem fistulous. A. fluviátilis. Bigel. fl. bost. ed. 2. p. 228.

Var. β, *Hookèri*; submersed leaves capillary-multifid, floating ones kidney-shaped, palmately-multifid. 4. H. W. Native of lakes and marshes about Slave Lake, Cumberland House. Hook fl. bor. amer. p. 15. t. 7. B. f. 1.

Var. γ, *rèpens* (Hook fl. bor. amer. p. 15. t. 7. B. f. 2) lower leaves linear-many-parted, upper ones kidney-shaped, palmately-multifid. Found along with the preceding variety. A. Pùrshii Richards in Frankl. journ. ed. 2. app. p. 23.

Var. δ, *Gmelìni* (D. C. prod. 1. p. 35.) plant creeping, leaves all kidney-shaped, roundish, palmate, 3-5-lobed. Native about Bear Lake, and in the Bay of Eschscholtz on the western shore of extreme Arctic America and of Siberia. Hook fl. bor. amer. p. 15. t. 7. B. f. 3. R. Gmelìni, D. C. prod. i. p. 34, exclusive of the synonym of Schlecht. R. Langsdórfii. D. C. prod. 1. p. 34.—Gmel. sib. 4. t. 83. B. R. Sibíricus, Spreng. syst. 2. p. 652.

Pursh's Crowfoot. Fl. June, Aug. Pl. flt. and creeping.

83 R. RIVULA'RIS (Banks and Soland. MSS. D. C. syst. 1. p. 270.) leaves smooth on long stalks, 3-parted with wedge-shaped cut partitions; stems floating, reptant; peduncles opposite the leaves 1-flowered, petals lanceolate, remote. ⊙. G. Native of New Zealand in rivulets. A smooth, slender, creeping or floating herb. Carpels awned.

Rivulet Crowfoot. Pl. flt.

84 R. ACAU'LIS (Banks and Sol. MSS. D. C. syst. 1. p. 270.) leaves smooth, radical ones on long stalks, 3-parted, with oval very entire lobes; scape 1-flowered, naked, shorter than the leaf-stalks; calyx spreading; petals lanceolate, remote, erect. ⊙. 4. G.? Native of New Zealand in watery places near Opuragi. Plant resembling *Trifòlium uniflòrum*. Petals with long claws. Perhaps only a variety of *R. rivulàris*.

Stemless Crowfoot. Pl. 2 inches.

85 R. COLLÌNUS (R. Br. prod. fl. nov. holl. ined. D. C. syst. 1. p. 271.) leaves all radical, pubescent, stalked, ternate, with oval somewhat toothed segments; scape naked, 1-flowered, longer than the leaves; calyx spreading; petals stipitate, oval-oblong. ⊙.? H. Native of Van Dieman's Land, on hills. Scapes 1 or 2 rising from the root, erect, slender, twice as long as leaves. Flowers small. Calyx soon falling off. Ovaries few, smooth.

Hill Crowfoot. Fl. July. Pl. $\frac{1}{4}$ foot.

86 R. PUMÌLIO (R. Br. prod. fl. nov. holl. ined. D. C. syst. 1. p. 271.) leaves rather villous, 3-parted, with oblong trifid or entire lobes; stems erectish; pedicels opposite the leaves; carpels villous. ⊙. H. Native of Van Dieman's Land. A small many-stemmed herb with very small flowers. Carpels 7-8, pointed. This species has a little of the habit of *R. collìnus*, but perhaps it is more closely allied to *R. parviflòrus* and its congeners.

Dwarf Crowfoot. Fl. June, July. Pl. $\frac{1}{4}$ foot.

87 R. LAPPÓNICUS (Lin. spec. 778.) leaves smooth, radical, on long stalks, 3-parted, with dilated, blunt, toothed lobes; scape naked, 1-flowered, longer than the leaves; calyx of three reflexed sepals. ♃. H. Native of Lapland, Sweden, and Iceland, in moist, shady places; in North America in mossy woods in the eastern and central districts, from latitude 50° to the Arctic sea, eastern declivity of the Rocky Mountains in swamps, Whale Island in the Arctic sea, &c. Smith in fl. lapp. ed. 2. p. 194. t. 3. f. 4. Wahl. fl. lapp. 284. t. 8. f. 2. Lin. fl. lapp. no. 231. t. 3. f. 4. Habit almost of *Adóxa*. Petals 5-6, hardly longer than the calyx. Carpels 6-10, terminated by the hooked styles, collected into a round head. The scape is sometimes furnished with one leaf.

Lapland Crowfoot. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

88 R. HYPERBÒREUS (Rottb. act. hafn. 10. p. 458. t. 4. f. 16.) leaves smooth, stalked, trifid; lobes oblong, divaricating, with the lateral ones trifid or bifid and middle one entire; sheath of leaf 2-eared at the base; carpels margined on the back, tipped with a small inconspicuous point; stem filiform, creeping. ♃. H. Native of Iceland, Greenland, Norway, Siberia, Lapland, North America in marshes on the Rocky Mountains, Arctic Islands, &c. Fl. dan. t. 331. R. Ammáni Gun. fl. norv. no. 826. exclusive of synonyms. R. montànus, var. α, Bir. ren. 39. R. Gmelíni Schlecht. anim. ran. sect. 2. p. 35.—Gmel. sib. 4. t. 33. f. b. Like *R. Cymbalàriæ*, but from it easily distinguished by its trifid leaves.

Northern Crowfoot. Fl. Ap. May. Clt. 1820. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

89 R. PYGMÆ'US (Wahl. fl. lapp. no. 286. t. 8. f. 1.) leaves smooth, 3-5-cleft, radical ones stalked, cauline one sessile; stem 1-flowered; calyx smooth somewhat reflexed, longer than the petals; carpels roundish, pointed with the short hooked styles. ♃. H. Native of the Alps of Norway, Lapland, in irrigated places near rivulets under the rocks; North America in moist grassy places on the high parts of the Rocky Mountains, about Arctic sea coast, between long. 107° and 140°, about Behring's Straits; on Chamisso's Island, and on that of St. Lawrence; Spitzbergen and Labrador. Wahl. fl. lapp. no. 286. t. 8. f. 1. Mart. spitzb. cap. 3. t. 9. f. e. Lin. fl. lapp. no. 232. var. γ, t. 3. f. 3. Rchb. icon. bot. t. 2. f. 3, 4, 5. A very small plant with the appearance of *Saxífraga rivulàris*.

Pygmy Crowfoot. Fl. April, May. Clt. 1810. Pl. $\frac{1}{4}$ ft.

90 R. NIVA'LIS (Gun. norv. 627.) leaves smooth, radical ones kidney-shaped, stalked, 5-cleft, with entire ovate lobes, cauline leaves almost sessile, palmate; stem 1-flowered; calyx hairy, one half shorter than the obovate blunt petals. ♃. H. Native of Lapland, Norway, Iceland; North America on lofty parts of the Rocky Mountains, Copper Mountains and Arctic sea coast in muddy pools which become dry during summer, Behring's Straits, Kotzebue's Sound, Spitzbergen, &c.—Mart. spitzb. cap. 3. t. 1. f. d. Lin. fl. lapp, ed. 1. no. 232. t. 3. f. 2. Radical leaves rising after the flower. Stem villous under the flower, and furnished with two or three oval-oblong sessile cut or toothed leaves. Calyx spreading. Carpels beaked. Flowers pale yellow.

Var. β, *sulphùreus* (D. C. syst. 1. p. 273.) radical leaves cuneated at the base, hardly lobed to the middle, middle lobe half ovate, broadest at the base. Phips. voy. 202. R. nivàlis β, Wahl. fl. lapp. 157. R. prìmus. Mart. spitz. t. 6. f. c.

Snow Crowfoot. Fl. June, Aug. Clt. 1775. Pl. $\frac{1}{2}$ ft.

91 R. SABÌNII (R. Br. in app. to Capt. Parry's 1st voy. p. 265.) leaves 3-parted, radical ones on long petioles; segments elliptical, lateral ones semibifid; stem leaves sessile, linear, 3-parted; calyx hairy, about equal in length to the retuse petals. ♃. H. Native of Melville Island, shores of the Arctic Sea between the Mackenzie and Coppermine rivers.

Sabine's Crowfoot. Pl. $\frac{1}{4}$ foot.

92 R. A'RCTICUS (Richards in Frankl. 1st journ. ed. 1. app. p. 741.) leaves quite smooth, radical ones on long stalks, hastate, 3-parted; segments 3-4-cleft, obtuse; stem leaves linear-parted; stem simple, 1-flowered; calyx villous, reflexed, shorter than the petals which are very blunt. ♃. H. Native of North America in the Arctic regions. Hooker considers this identical with *R. affìnis*.

Arctic Crowfoot. Pl. $\frac{1}{4}$ foot.

93 R. FRÍGIDUS (Willd. spec. 2. p. 1312.) leaves smooth, radical ones cuneated, obovate or orbicular deeply toothed at the apex, cauline ones divided into 5 or 7 entire lobes; stem 1-flowered; calyx hairy, shorter than the emarginate petals. ♃. H. Native of Northern Asia on mountains as well as on the Altaian mountains in Siberia near springs. R. sulphùreus, D. C. syst. 1. p. 274. exclusive of the synonyms of Mart. and Wahl. R. Altàicus. Laxm. nov. comm. Gœtt. acad. petrop. 1774. vol. 18. p. 533. t. 8. Like *R. glaciàlis* and *R. nivàlis*.

Frigid Crowfoot. Fl. May, July. Pl. $\frac{1}{2}$ foot.

94 R. ESCHSCHÓLZII (Schlecht. anim. ran. 2. p. 16. t. 1.) leaves ciliated, radical ones stalked, 3-parted, with the partitions lobed; stem usually 2-flowered; calyx hairy, shorter than the petals; carpels obliquely ovate, pointed. ♃. H. Native of the islands of Unalaschka and St. George, N. W. America; near the limits of perpetual snow on the borders of streams upon the Rocky Mountains.

Var. β, *Hookèri*, petals small or abortive.

Eschscholz's Crowfoot. Pl. $\frac{1}{2}$ foot.

95 R. PERUVIA'NUS (Pers. ench. 2. p. 103.) leaves rather hairy, radical ones stalked, semiorbicular, crenated, cauline ones sessile, cleft into many linear entire lobes; calyx very villous. ♃. G. Native of Peru, in marshes on mount Antisana. Deless. icon. sel. 1. t. 37. Petals 5, orbicular. Carpels ovate, compressed, smooth.

Peruvian Crowfoot. Pl. $\frac{1}{2}$ foot.

96 R. PEDUNCULA'TUS (Viv. app. fl. cors. in Schlecht. Linnæa. p. 501. Spreng. syst. 2. p. 652.) radical leaves somewhat orbicular, crenate-toothed, the rest 3-parted, with the middle lobe stalked, trifid, and cut; scape usually leafless, 1-flowered; calyx spreading. ♃. H. Native of Corsica. Plant pubescent or hairy.

Peduncled Crowfoot. Pl. $\frac{1}{2}$ foot.

97 R. HU'MILIS (D. Don. in herb. Lamb.) plant pilose; radical leaves stalked, cordate, obtuse, slightly 3-lobed and crenate; stem short; peduncles long, radical, axillary, and terminal; carpels rather inflated, beaked. ♃. H. Native of Mexico. Flowers small, yellow.

Dwarf Crowfoot. Pl. 1-2 inches.

98 R. MULTICAU'LIS (D. Don. in herb. Lamb.) plant pilose;

stems numerous, prostrate, or ascending; radical leaves cordate-roundish, stalked, 3-lobed; lobes crenate; cauline leaves sessile, entire, opposite; calyx reflexed, much shorter than the petals, which are emarginate; carpels rather inflated, pointed; heads ovate. ♃. H. Native of Mexico. Allied to *R. repens*. Flowers middle-size, yellow.

Many-stemmed Crowfoot. Pl. ¼ foot.

99 R. POLYRHÌZOS (Steph. in Willd. spec. 2. p. 1324.) leaves smooth, radical ones stalked, 3-5-cleft, with ovate entire lobes: cauline leaves sessile, cleft into many linear-entire lobes; stem somewhat prostrate, 1-3-flowered; calyx spreading, smooth. ♃. H. Native of Caucasus, frequent about the colony of Sarepta, and at the rivers Terek and Volga; of the Caspian deserts, and the Altaian mountains. Deless. icon. sel. 1. t. 38. Bieb. pl. rar. ross. 1. t. 19. Petals obovate. Carpels smooth, awned.

Many-rooted Crowfoot. Fl. April, May. Pl. ¼ to ½ foot.

100 R. DEMÍSSUS (D. C. syst. 1. p. 275.) leaves smooth, radical ones stalked, 3-5-parted, with the partitions divided into linear lobes; scape almost naked, lying on the ground, 1-2-flowered; calyx spreading, pubescent. ♃. H. Native of Mount Lebanon. Trunk of root thick. Cauline leaves wanting or solitary, linear, simple or divided almost to the base into 3 linear lobes. Flowers smaller than those of *R. montànus*. Carpels somewhat orbicular, compressed, almost awnless.

Low Crowfoot. Pl. trailing.

101 R. PEDATÍFIDUS (Smith, in Rees' cyclop. no. 72. Hook. fl. bor. amer. p. 18. t. 8. B.) leaves somewhat pubescent, radical ones palmately or pedately cut into 3 or 5 linear quite entire lobes; scapes almost naked, erect, 1 or 2-flowered; calyx spreading, rather villous. ♃. H. Native of Siberia and North America on the barren summits of the Rocky Mountains. Stems usually simple 1-flowered, rarely bifid 2-flowered, with the two cauline leaves sessile. Flowers a little smaller than those of *R. àcris*. Carpels terminated by the somewhat recurved styles.

Pedate-leaved Crowfoot. Fl. May, June. Pl. ¼ to ½ foot.

102 R. MONTA'NUS (Willd. spec. 2. p. 1321.) radical leaves smooth, 3-parted, orbicular, with trifid blunt segments, cauline ones sessile, 3-5-parted into linear quite entire lobes; stem 1-flowered, clothed with pressed pubescence at the top; calyx smoothish. ♃. H. Native of the Alps of Austria, Switzerland, France, and the Pyrenees in rugged meadows. R. nivàlis, Scop. carn. ed. 2. no. 686. Jacq. austr. t. 325 and 326. but not of Lin. R. montànus, var. f. Bir. ren. 39. This is a common species on the higher mountains of Europe, where it is often confounded with *R. Villársii*, but differing in the stem usually bearing only two leaves, and in having an almost smooth spreading calyx, not villous with spreading hairs, as well as in the floral leaves being linear-entire, not as in *R. Gouàni*, deeply-toothed. Flowers a little larger than those of *R. àcris*. Stigmas beautifully revolute.

Var. β, *tenuifòlius* (D. C. syst. 1. p. 276.) segments of leaves acute. ♃. H. Native of the Alps of Provence and Jura. R. grácilis, Schleicher, pl. helv.

Mountain Crowfoot. Fl. May, July. Clt. 1775. Pl. ½ foot.

103 R. AFFÌNIS (R. Br. Parry, voy. app. p. 265. Hook. fl. bor. amer. p. 12. t. 6. A. a.) radical leaves pedately-multifid, stalked, cauline ones almost sessile; lobes of all linear; stem erect, 1-2-flowered, and is as well as the calyxes and ovaries pubescent; carpels with recurved beaks, collected into an oblong cylindrical head. ♃. H. Native of North America from Canada to the Arctic sea, on the Rocky Mountains and elsewhere. The whole plant is somewhat hairy. Radical leaves sometimes somewhat kidney-shaped, deeply crenated. Calyx hairy, spreading, or slightly reflexed; petals twice as large as the sepals.

Var. β, *apétalus* (petals somewhat shorter than the calyx or wanting; leaves less profoundly divided.) Hook. fl. bor. amer. p. 13. t. 6. f. A. b. Native of Melville Island and shores of the Arctic sea.

Var. γ, *subintegrifòlius* (radical leaves roundish, almost entire.) Native of Melville Island and shores of the Arctic sea. (Hook.)

Allied Crowfoot. Fl. May, June. Clt. 1826. Pl. ½ foot.

104 R. VILLA'RSII (D. C. fl. fr. ed. 3. vol. 4. p. 896.) leaves pubescent, radical ones almost orbicular, 3-parted, with trifid toothed acute segments; cauline leaves sessile, 3-5-parted into linear entire lobes; stem 1-flowered, pubescent at the top; calyx spreading, villous. ♃. H. Native of the Alps of Savoy, Dauphiny, and Provence, in rugged meadows. R. Breyniànus, Crantz. austr. 2. p. 91. t. 4. f. 2. R. Lappónicus, Vill. dauph. 4. p. 743. but not of Lin. R. montànus, var. d, Bir. ren. p. 39. R. Gouàni, Smith in Rees' cyclop. no. 41. R. oreophìlus, Bieb. suppl. 383. A doubtful species between *R. montànus*, *R. àcris*, and *R. Gouàni*, but differs from the first in the calyx being villous, not almost smooth, and in the lobes of the radical leaves being more toothed and acute, as well as in the trunk of root being oblique and blackish, from the second in the stem being 1-flowered, not many-flowered, as well as in the structure of its roots.

Villar's Crowfoot. Fl. May, July. Clt. 1819. Pl. ½ to ¾ ft.

105 R. INSULA'RIS (Viv. app. fl. cors. in Schlecht. Linnæa, 1. p. 502.) plant hairy; root fascicled-tuberous; radical leaves 3-parted; segments bifid and trifid; stem leaves trifid, on stem-clasping petioles; calyx spreading; sepals ovate acute, clothed with close-pressed hairs. ♃. H. Native of Corsica.

Island Crowfoot. Pl. ½ to ¾ foot.

106 R. UNCINA'TUS (D. Don. in herb. Lamb.) stem erect; radical leaves? cauline ones on long stalks, 3-parted; segments 3-lobed; lobes toothed or lobed, acute; floral leaves ternate; leaflets linear-lanceolate, acute, quite entire; peduncles slender, 1-flowered, terminal, and lateral; carpels few, ending in hooked points; heads globose. ♃. H. Native of Mexico. Flowers small, yellow. Root fibrous. Plant smooth.

Hooked-carpelled Crowfoot. Pl. 1 foot.

107 R. GOUA'NI (Willd. spec. 2. p. 1322.) radical leaves orbicular, divided into 5-deeply toothed lobes, cauline ones sessile, palmately-parted into toothed lobes; calyx somewhat villous. ♃. H. Native of the Pyrenees, Alps of Dauphiny, Hungary, in meadows. R. Pyrenæ'us, Goua. ill. 33. f. 1 and 2. not of Lin. R. furcàtus, Berg. fl. Bass. pyr. 2. p. 406. R. montànus, var. g, Bir. ren. 40. A very distinct species from *R. montànus*, in its larger habit and more ample flowers. Its stature is very variable; for instance, when growing on the tops of the higher Pyrenees it does not exceed 3 inches in height, but in lower moist situations it will grow to the height of 2 feet. Stem 1 or many-flowered. Flowers sometimes rather umbellate on short pedicels, sometimes on long pedicels. Floral leaves sometimes alternate and distant, but usually in the approximating mode of an involucre under the flower.

Gouan's Crowfoot. Fl. May, Aug. Clt. 1818. Pl. ½ to 2 ft.

108 R. A'CRIS (Lin. spec. 779.) leaves pubescent or somewhat smooth, 3-5-parted; segments trifid, jagged, those of the uppermost leaves linear and entire; stem erect, many-flowered, covered with pressed hairs; peduncles round and even; calyx rather villous; carpels somewhat orbicular, compressed, with short recurved points. ♃. H. Native throughout Europe; Siberia, Tauria, North America, in meadows and pastures, very common even on the loftiest mountains. Smith, eng. bot. t. 652. Curt. lond. fasc. 1. t. 39. Mart. rust. t. 30. Woods' suppl. t. 246. Bull. fr. t. 109. R. Sículus Presl. R. napellifòlius, var. Crantz. austr. 2. p. 90. t. 4. f. 1. Root somewhat tuberous; lower leaves sometimes blotched, with black in the middle. Calyx

spreading. This plant is very acrid and dangerous. Curtis says, that even pulling up the plant, and carrying it to some little distance, has produced a considerable inflammation in the palm of the hand: that cattle in general will not eat it; yet that sometimes when they are turned hungry into a new field of grass, or have but a small spot to range in, they will feed on it, and hence their mouths have become sore and blistered. According to Linnæus, sheep and goats eat it; but kine, horses, and swine refuse it. When made into hay it loses its acrid quality, but then it seems to be too stalky and hard to afford much nourishment; if it be of any use it must be to correct by its warmth the insipidity of grasses. It is called vulgarly *butter-flower*, or *butter-cup*, as well as *R. repens* and *R. bulbòsus*, under a notion that the yellow colour of butter is owing to these plants. It is richness of the pasture that communicates this colour and not these flowers, which the cattle seldom eat.

Var. β, múltiplex (flowers double). 4. H. Curt. bot. mag. t. 215. This plant is cultivated in gardens under the name of *Yellow Bachelor's buttons*.

Var. γ, sylváticus (D. C. syst. 1. p. 278.) petioles and leaves velvety-villous on the under surface. 4. H. Native of Europe in woods. R. sylváticus, Thuil. fl. par. ed. 2. vol. 1. p. 276. R. lanuginòsus, *β*. Fl. fr. ed. 3. vol. 4. p. 899. This variety is perhaps a proper species; it is much larger than the var. *α*, and the flowers more numerous, but smaller, and somewhat corymbose.

Var. δ, multifidus (D. C. l. c.) lobes of leaves deeply multifid. 4. H. R. polyánthemus, Lob. icon. 686. f. 1. This plant has the appearance of *R. polyánthemus*, in the leaves being many-parted, but it is more closely allied to *R. àcris*, in the carpels being terminated by straight points, not almost awnless, as well as in the stem being covered with pressed pubescence, not pilose.

Acrid, or Upright meadow Crowfoot. Fl. June, July. Pl. 2 ft.

109 R. BRU'TIUS (Tenore. fl. neap. prod. suppl. 1. p. 61.) leaves pubescent 3-5-parted, with 3-parted partitions, and lanceolate bifid lobes; stem erect, villous, many-flowered; calyx pressed, one-half shorter than the petals. 4. H. Native of Naples on Mount Pollino. Tenore. fl. neap. 1. t. 50. Like *R. àcris*, but differing in the segments of the leaves being broader and serrated, smoothish, not villous, as well as in the flowers being twice the size. It differs from *R. polyánthemus* in the leaves being digitately-parted, smoothish, and in the peduncles being round and even, not striated.

Brutian Crowfoot. Fl. June, July. Clt. 1823. Pl. 1 to 2 feet.

110 R. STEVE'NI (Bess. enum. volhy. no. 683.) leaves 3-5-parted, with wedge-shaped deeply toothed trifid segments, those of the upper ones linear; root with numerous fibres; stem almost naked; peduncles round; calyx hairy, spreading; stigmas spreading. 4. H. Native of Volhynia and Podolia in meadows. Like *R. àcris*.

Steven's Crowfoot. Fl. June, July. Clt. 1819. Pl. 1 to 2 feet.

111 R. CAUCA'SICUS (Bieb. fl. cauc. 2. p. 27.) radical leaves on long stalks, somewhat pubescent, 3-parted, with deeply toothed trifid lobes; stem leaves stalked, ternate, the uppermost ones with linear lobes; stem erect, fibrous at the neck; pedicels round; calyx spreading. 4. H. Native of Caucasus in subalpine situations. On grassy hills about Narza frequent. In habit like *R. àcris*, but with rather smaller flowers. Roots fibrous, with black fibres rising from the base. Carpels compressed, smooth, with hooked beaks.

Caucasian Crowfoot. Fl. Ju. Jul. Clt. 1820. Pl. 1½ to 2 feet.

112 R. RU'FULUS (Brot. fl. lus. 2. p. 367.) radical leaves 3-5-parted; lobes many-cleft; lower cauline leaves stalked, 3-parted, upper ones linear; stem erect, solid, not fistular, and is, as well as the round peduncles, villous; calyx spreading. 4. H. Native of Portugal, at the bottom of hills near Coimbra and elsewhere in Biera. R. chærophýllos, var. e, Bir. ren. 42. Very nearly allied to *R. àcris*. Root fascicled white. Stem clothed with subrufous hairs. Carpels compressed, acuminated.

Rufous-haired Crowfoot. Fl. June, July. Pl. 1 to 1½ foot.

113 R. POLYA'NTHEMUS (Lin. spec. 779.) leaves 3-5-palmate-parted, with deeply multifid partitions and linear lobes; stem erect, many-flowered, and is, as well as the petioles, covered with spreading pili; peduncles furrowed; calyx hairy; carpels almost awnless. 4. H. Native of Holland, Germany, Hungary, Russia, Sweden, Norway, in bushy places, coppices, and woods. R. polyánthos, Neck. Gallop. 240. R. napellifòlius, Crantz. austr. 2. p. 90. t. 4. f. 1.? R. multiflòrus, Gilib. in ust. del. 2. p. 418. Similar to *R. àcris*, var. *γ*, but differs in the leaves being much more dissected into narrower linear lobes, which are not toothed on the margins; stem and petioles more hairy; peduncles furrowed, not round; calyx more hispid, as well as in the ovaries being about 20, not 50.

Many-flowered Crowfoot. Fl. May, Ju. Clt. 1796. Pl. 1 to 2 ft.

114 R. NEMORÒSUS (D. C. syst. 1. p. 280.) radical leaves 3-5-cleft beyond the middle into wedge-shaped lobes, which are again divided into lobules, which are toothed at the apex; stem erect and is, as well as the petioles, covered with spreading hairs; peduncles furrowed; carpels terminated by hooked awns. 4. H. Native of Switzerland and France in woods. Like *R. polyánthemus*.

Var. α, multiflòrus (D. C. syst. 1. p. 280.) stem many-flowered; upper leaves divided into entire linear lobes. 4. H. Native of mountains at the foot of the Alps of Jura. R. polyánthemus Sut. fl. helv. 1. p. 341. Habit of *R. àcris*.

Var. β, pauciflòrus (D. C. syst. 1. p. 280.) stem 1-3-flowered; upper leaves somewhat lobed and deeply toothed, uppermost ones small. 4. H. Native of Vallais, Cevennes, Pyrenees, in subalpine situations. R. áureus Schleich. pl. helv. R. villòsus. St. Amand. fl. agr. 227. bouq. t. 5. Habit of *R. montànus*.

Grove Crowfoot. Fl. May, Jul. Clt. 1810. Pl. 1 to 2 feet.

115 R. BREYNIA'NUS (Crantz. aust. ex Spreng. syst. 2. p. 654.) stem erect, many-flowered, and is, as well as the leaves, villous; radical leaves palmate, 3-5-parted; lobes obovate-oblong, toothed; floral leaves quite entire; peduncles furrowed; calyx spreading; carpels with hooked points. 4. H. Native of the south of Europe in subalpine situations. R. nemoròsus var. *β*, D. C. syst. 1. p. 280. prod. 37 ?

Breynius's Crowfoot. Fl. May. July. Clt.? Pl. 1 foot.

116 R. LANUGINÒSUS (Lin. spec. 779.) leaves trifid, silky, with broad toothed rather cut lobes; stem erect, many-flowered, and is, as well as the petioles, clothed with reflexed hairs; peduncles round; carpels flat, terminated by hooked awns. 4. H. Native of Montpelier, Dauphiny, Switzerland, Austria, Germany, Denmark, Hungary, Tauria, Greece, in wooded mountains. Fl. dan. t. 397. Smith fl. græc. t. 519. A very distinct species from its congeners in the leaves being much broader and silky on both surfaces with pressed hairs.

Var. β, geraniifòlius (D. C. syst. 1. p. 281.) upper leaves 3-parted into oblong acuminate coarsely serrated lobes. 4. H. R. montànus subhirsùtus, &c. C. Bauh. pin. 182. Tourn. inst. 291.

Var. γ, párvulus (D. C. prod. 1. p. 37.) stem 1-2-flowered; leaves very minute. 4. H. Native of the Alps of Jura.

Var. δ, Constantinopolitànus (D. Urv. enum. pl. arch. no. 476.) radical leaves very large, on very long footstalks, trifid, with broad cut lobes, upper ones jagged, with linear segments all silky lanuginous; stem erect, lanuginous, many-flowered; calyx reflexed; carpels flat, somewhat orbicular, terminated by hooked awns. 4. H. Native in hedges about Constantinople, frequent.

Woolly-leaved Crowfoot. Fl. Ju. Jul. Clt. 1683. Pl. 1 to 1½ ft.

117 R. TUBERÒSUS (Lapeyr. abr. pyr. 320.) radical leaves large, 3-lobed; lobes distant, lateral ones 2-lobed, intermediate one wedge-shaped, 3-lobed, with cut lobules; stem rather ascending, pubescent; peduncles round, divaricating; calyx pressed. ♃. H. Native of the Pyrenees in meadows. Plant large. Trunk of root about the thickness of a finger. Like *R. nemoròsus*.

Tuberous-rooted Crowfoot. Fl. May, Jul. Clt. 1820. Pl. 1 ft.

118 R. ANEMONEFÒLIUS (D. C. syst. 1. p. 282.) radical leaves 3-parted, pubescent, with deeply toothed lobes, cauline ones ternate, with entire lobes; upper leaves long, linear, entire; stem erect, 1-2-flowered, smooth at the base, pubescent at the top; calyx reflexed. ♃. H. Native of Cappadocia. Petals obovate, very blunt, about the size of those of *R. gramíneus*.

Anemone-leaved Crowfoot. Fl. May, July. Pl. 1 foot.

119 R. NAPELLIFÒLIUS (D. C. syst. 1. p. 282.) radical leaves 3-parted, with the partitions divided into many linear lobes, floral ones 3-parted, with linear lobes; stem erect, 1-3-flowered, fibry at the neck and covered with pressed hairs; calyx pressed. ♃. H. Native of Cappadocia and in fields about Constantinople. Calyx hairy.

Napellus-leaved Crowfoot. Fl. Ju. Jul. Clt. 1822. Pl. ½ foot.

120 R. PLATYSPE'RMUS (Fisch. in litt. D. C. prod. 1. p. 37.) radical leaves many-cleft, cauline ones 3-parted, with linear lobes; stem erect, carpels compressed, orbicular, membranous, terminated by hooked awns. ♃. H. Native of Russia at the salt lake Inder, in the steppe Kirghisian. A very distinct species, nearly allied to *R. oxyspérmus* and *R. disséctus*.

Broad-seeded Crowfoot. Pl. ½ to 1 foot.

121 R. DISSE'CTUS (Bieb. fl. cauc. 2. p. 25. suppl. p. 381.) radical leaves somewhat pinnately-many-parted, with acute linear lobules; cauline leaf divided into very entire linear lobes; stem erect, 1-2-flowered, pubescent; calyx hairy, spreading. ♃. H. Native of Siberia towards the top of Mount Tschaturdag and elsewhere, and in Eastern Caucasus.

Dissected-leaved Crowfoot. Fl. May, Aug. Clt. 1818. Pl. ½ to 1 foot.

122 R. VILLÒSUS (D. C. syst. 1. p. 283.) leaves villous, ternate, with ovate, deeply toothed segments; floral leaves 3-parted with oblong almost entire lobes; stem erect, forked, covered with rather deflexed hairs; calyx hispid, spreading. ♃. H. Native of Persia. Ovaries terminated by hooked awns.

Villous Crowfoot. Pl. 1 foot.

123 R. CAPPADÒCICUS (Willd. spec. 2. p. 1326.) leaves pubescent, radical ones cordate, trifid, with toothed acuminated lobes; lower cauline leaves stalked, upper ones sessile, entire; stem erect, generally 2-flowered; calyx spreading; root præmorse. ♃. H. Native of Cappadocia. R. chærophýllos var. g. Bir. ren. 43. An intermediate plant between *R. àcris* and *R. lanuginòsus*. Stem simple or bifid at the top. Carpels ovate, rather compressed, smooth, terminated by hooked awns.

Cappadocian Crowfoot. Pl. 1 foot.

124 R. SERÍCEUS (Poir. dict. 6. p. 109) leaves silky-villous, radical ones stalked, 3-5-parted, cauline ones ternate, with stalked, 3-parted segments; lobes of all deeply serrated; stem erect, villous, many-flowered; calyx spreading. ♃. H. Native of the Mauritius. Deless. icon. sel. 1. t. 39. Habit of *R. àcris* or *R. polyánthemus*. Flowers about the size of those of *R. arvénsis*, with oblong petals. Carpels compressed, acuminated.

Silky Crowfoot. Pl. 1½ foot.

125 R. RHÆADIFÒLIUS (D. C. syst. 1. p. 284.) leaves nearly smooth, pinnately ternate, lower ones stalked, long, with oval 3-lobed deeply toothed segments; lobes of upper leaves linear; stem erect, branched, almost smooth; calyx reflexed. ♃. H. Native of Mogador in fields, and perhaps also in the Canary islands. Deless. icon. sel. 1. t. 40. Flowers small.

Rhæas-leaved Crowfoot. Pl. 1 foot.

126 R. RE'PENS (Lin. spec. 779.) leaves ternate, with wedge-shaped, 3-lobed, deeply-toothed segments; runners creeping, rising from the neck of the stem; flower bearing stems rather erect; calyx pressed; carpels terminated by straight points. ♃. H. Native throughout Europe in meadows, moist pastures, and shady waste places, in towns, neglected gardens, very common; also in the mountains of North America. Smith eng. bot. 516. Curt. lond. fasc. 4. t. 38. Mart. rust. t. 29. Fl. dan. t. 95.—Gmel. fl. sib. 4. p. 206. no. 54. t. 84. R. prostràtus, Poir. dict. 6. p. 113. R. inféstus Sal. prod. 373. This plant varies much according to the soil and situation where it grows. It is very acrid in taste and blisters the skin.

Var. β, flore pleno (flowers double) Tab. icon. 53. f. 1.—Ger. herb. 957. f. 2.—Besl. Eyst. vern. 1. t. 13. f. 2.

Var. γ, eréctus (D. C. syst. 1. p. 285.) flowering stems erect, without runners.

Var. δ, glabràtus (D. C. syst. 1. p. 285.) leaves and stems very smooth. R. lúcidus, Poir. dict. 6. p. 113.

Var. ε, linearílobus (D. C. prod. 1. p. 38.) runners creeping, very long, bearing flowers; lobes of leaves very narrow.

Creeping Crowfoot. Fl. May, Aug. Brit. Pl. ½ to 1 foot.

127 R. CALEYA'NUS, plant pilose; stem prostrate, many-flowered; radical leaves on long stalks, upper cauline ones sessile, all ternate; segments 3-parted, lobed, middle one on a long stalk; calyx reflexed; carpels compressed, terminated by short points, disposed in ovate heads. ♃. H. Native near London in dry places, particularly in the late Mr. Caley's garden at Bayswater.

Caley's Crowfoot. Fl. May, Aug. Britain. Pl. trailing.

128 R. MARGINA'TUS (D. Urv. enum. pl. arch. no. 479.) root fibrous; stem branched at the base, spreading, rather hairy; leaves surrounded by a callose margin, lower ones stalked, ternate, with crenated blunt segments; stem leaves with linear segments; calyx reflexed; carpels rounded, flat, marginated, terminated by rather hooked points. ♃. H. Native on hills about Trapesus. Petals small.

Marginated-carpelled Crowfoot. Fl. May, July. Pl. 1 foot.

129 R. JAPÓNICUS (Langsd. ex Fisch. in litt. D. C. prod. 1. p. 38.) leaves palmately ternate, with roundish deeply and bluntly toothed segments; stem creeping; calyx reflexed. ♃. H. Native of Japan, near Nagasaki, R. Langsdorfii, Spreng. syst. 2. p. 652. Carpels compressed, smooth, terminated by hooked points. This plant is called in Japan *Kimbu-Nohanwa*.

Japan Crowfoot. Pl. creeping.

130 R. DIFFU'SUS (D. C. prod. 1. p. 38.) plant villous; leaves roundish, 3-lobed, toothed, cordate at the base; stem creeping, diffuse; pedicels 1-flowered, opposite the leaves; calyx pressed; carpels oval, smooth, dotted, terminated by straight points. ♃. H. Native of Nipaul in inundated places. Flowers small. Stem creeping.

Diffuse Crowfoot. Pl. creeping.

131 R. GERANOÌDES (H. B. et Kth. nov. gen. et spec. amer. 5. p. 44.) plant villous; radical leaves ternate; segments stalked, trifid, cuneated at the base, deeply toothed; stem ascending, few-flowered; pedicels 1-flowered opposite the leaves; petals oblong; calyx somewhat reflexed. ♃. G. Native of New Granada on Mount Quindiu, also of the island of Java, according to Blume. Carpels smooth, compressed, terminated by straight points.

Geranium-like Crowfoot. Pl. ½ foot.

132 R. CHILE'NSIS (D. C. syst. 1. p. 286.) stems procumbent, and are hispid as well as the petioles; leaves rather villous, cordate, orbicular, 3-5-cleft, with deeply toothed lobes; calyx very villous. ♃. F. Native of Chili near Talcacuano. The affinity of this plant is doubtful, owing to the carpels being unknown.

Chili Crowfoot. Pl. ½ to 1 foot.

133 R. lappa'ceus (Smith in Rees' Cyclop. no. 61.) leaves villous, stalked, pinnate or pinnatifid, with ovate, trifid, sharply and deeply lobed segments; stem erect, many-flowered; calyx spreading; carpels terminated by hooked points. ♃. H. Native of New Holland near Port Jackson. This species is allied to *R. pinnátus*, but the carpels are not tuberculated.

Var. β, *obtusàtus* (D. C. syst. 1. p. 287.) leaves shorter and blunter, 3-parted; stem almost naked, 2-flowered.

Var. γ, *pubescens* (D. C. syst. i. p. 287.) stem and petioles clothed with pressed hairs; calyx hispid.

Burdock Crowfoot. Pl. 1 foot.

134 R. pilòsus (H. B. et Kth. nov. gen. and spec. amer. 5. p. 45.) stem forked, ascending; petioles beset with spreading hairs; leaves pinnate, with trifid grossly toothed segments, those of the upper ones linear, oblong, all clothed with close pressed hairs; calyx reflexed, nearly smooth; carpels terminated by straight points. ♃. F. Native of South America, particularly about Santa-fe-de-Bogota. Carpels disposed into globose heads.

Pilose Crowfoot. Pl. ½ foot.

135 R. Nepaule'nsis (D. C. prod. 1. p. 39.) stem erect, dichotomous, hairy as well as the leaves, lower leaves ternate; leaflets oblong-cuneated, lobed and toothed, upper ones 3-parted, entire; calyx villous, reflexed, a little longer than the oblong, blunt petals; carpels ovate, with straight points. ♃. H. Native of Nipaul. R. trilobàtus. D. Don. prod. fl. nep. p. 194. R. ternàtus. Thunb.

Nipaul Crowfoot. Pl. 1 foot.

136 R. petiola'ris (H. B. et Kth. nov. gen. et spec. amer. 5. p. 45.) radical leaves on very long stalks, clothed with close-pressed silky-pubescence; partitions, trifid, deeply toothed; floral leaves 3-parted, with linear lobes; stem erect, forked; calyx reflexed. ♃. F. Native of Mexico near Santa-Rosa. Carpels ovate. glabrous, terminated by very short straight points.

Long-stalked Crowfoot. Pl. 1-2 feet.

137 R. dichótomus (Moc. et Sess. fl. mex. ic. ined. D. C. syst. 1. p. 288.) leaves smoothish, radical ones on very long stalks, bipinnate; stem erect, dichotomous; calyx reflexed. ♃. F. Native of Mexico. Flowers like those of *R. bulbòsus*. Carpels terminated by straight points. Radical leaves longer than the flowering stem.

Dichotomous-stemmed Crowfoot. Pl. 1 foot.

138 R. Pe'rsicus (D. C. syst. 1. p. 288.) leaves smooth, radical ones stalked, pinnate, with 3-lobed segments: lobes ovate, cuneated at the base, and regularly toothed at the apex; stem leaves ternate, uppermost ones 3-parted, rather pubescent; stem erect, dichotomous, clothed with close-pressed pubescence; calyx spreading, villous on the outside. ♃. H. Native of Persia. Flowers about the size of those of *R. repens*, or a little larger.

Persian Crowfoot. Pl. 1 foot.

139 R. plebe'ius (R. Br. prod. nov. holl. vol. 2. ined. D. C. syst. 1. p. 288.) stem erectish, dichotomous at the base, and is, as well as the petioles, beset with spreading hairs, but smoothish towards the apex; leaves ternate, villous, with stalked, ovate, deeply toothed segments; upper leaves linear, entire; calyx somewhat reflexed. ♃. F. Native of New Holland at Hunters-river, Hawkesbury. Carpels compressed, smooth, terminated by somewhat hooked points.

Plebeian Crowfoot. Fl. May, June. Clt. 1820. Pl. 1½ foot.

140 R. hirtus (Banks and Sol. MSS. D. C. syst. 1. p. 289.) stem erect, dichotomous; petioles and peduncles very hairy; cauline leaves stalked, lower ones ternate, with stalked ovate-toothed segments; middle segment 3-lobed; upper leaves oval-oblong; calyx somewhat reflexed. ♃. H. Native of New Zealand in grassy places near Tigadus, Tolago, Opuragi, and Totaranui. Very like *R. plebèius*. Carpels compressed, ending in short straight points.

Hairy Crowfoot. Fl. May, July. Pl. 1 foot.

141 R. híspidus (Michx. fl. bor. amer. 1. p. 321.) stem erect, branched, clothed with spreading hairs, as well as the petioles; leaves on long stalks, ternate, upper ones almost sessile: leaflets trifid cut, with lanceolate segments, which are callose at the apex; pedicels covered with close-pressed pubescence; calyx pilose, at length reflexed. ♃. H. Native of North America in wet fields and on the banks of ditches and rivers, from Canada to Carolina, and from the shores of Hudson's Bay to the Pacific. Flowers the size of those of *R. àcris*. Carpels orbicular compressed, terminated by very short points. Neck of root somewhat tuberous.

Hispid Crowfoot. Fl. June, Aug. Clt.? Pl. 1 foot.

142 R. recurva'tus (Poir. dict. 6. p. 123.) stem erect, clothed with spreading hairs as well as the petioles; leaves 3-parted, villous, with oval toothed partitions; calyx pilose, reflexed; carpels with hooked points. ♃. H. Native of North America in shady woods, from New York to Carolina, Labrador, mouth of the Columbia, and on the eastern declivity of the Rocky Mountains. Deless. icon. sel. 1. p. 41. R. lanuginòsus, Walt. fl. carol. 159. R. Pennsylvánicus, var. Bir. ren. p. 41. R. saniculæfórmis, Muhl. ex. Rafin. Like *R. Pennsylvánicus*, but differing in the leaves being 3-parted, not ternate, that is to say, not cleft to the base but confluent, as well as in the carpels being collected into a somewhat globose head, not an ovate head, and in having hooked not straight points. Root almost bulbous, especially with the neck clothed with the sheaths of the petioles of the old leaves. Flowers small. Petals elliptical, almost white, sometimes abortive.

Var. β, *Nelsònii* (D. C. syst. 1. p. 290.) lobes of leaves approximate; pedicels clothed with close-pressed hairs, length of leaves. ♃. H. Native of the island of Unalaschka.

Var. γ, *Hookerii* (stem and leaves smoothish.) Native of North America in mountain woods, north of Smoking River.

Recurved-styled Crowfoot. Fl. May. Clt.? Pl. 1½ foot.

143 R. Pennsylva'nicus (Lin. suppl. 272.) stem erect, branched, covered with stiff spreading hairs, as well as the petioles; leaves on long stalks, ternate, villous, with stalked, acutely 3-lobed, and deeply serrate segments; calyx spreading at length, reflexed, longer than the petals; carpels with straight points. ♃. H. Native of North America in low, moist, gravelly meadows, from Canada to Pennsylvania, and from the shores of Hudson's Bay to the Pacific. R. Canadénsis, Jacq. misc. 2. p. 343. icon. rar. 1. t. 105. Flowers the size of those of *R. àcris*.

Pennsylvanian Crowfoot. Fl. Jul. Aug. Clt. 1785. Pl. 1 to 2 ft.

144 R. fasciula'ris (Muhl. in Big. fl. bost. ed. 2. p. 226.) stem erect, branched; leaves ternate, quinate, pinnate, covered with close-pressed hairs; leaflets oblong-obovate, or cuneated pinnatifid-lobed; calyx spreading, villous underneath, shorter than the petals; carpels roundish, compressed, terminated by long recurved beaks, disposed in round heads. ♃. H. Native of North America in dry places and hills about Boston, and from Canada to the south of Lake Winepeg. Roots numerous, fascicled, rather fleshy.

Fascicled-rooted Crowfoot. Fl. April, May. Clt.? Pl. ½ foot.

145 R. Schlechtenda'lii (Hook. fl. bor. amer. p. 21. Graham in edinb. phil. jour. for 1829.) radical leaves stalked, 3-parted, cut, pilose; segments wedge-shaped, fringed, with a callose point at the apex; stem leaves stalked, with ovate-lanceolate entire pilose segments; stem erect, branched, pilose; carpels smooth, with rather straight beaks, collected into a globular head. ♃. H. Native of North America on the Rocky

Mountains. R. fasciculàris, Schlecht. anim. ran. sect. 2. p. 30. t. 2. Stem hollow, flattened. Radical leaves 3-parted, with the middle lobe trifid and the lateral ones 2-cleft, and cut again into 2-3 minor lobes. Calyx hairy, reflexed.

Schlechtendal's Crowfoot. Fl. May, June. Clt. 1826. Pl. ½ ft.

146 R. BE'CKII; leaves all radical, pubescent, stalked, 3-5-cut; scape villous, 1-flowered, longer than the leaves; calyx permanent; petals oblong-ovate. ♃. H. Native of Missouri in plains. R. nov. spe. Beck in amer. jour. scienc. vol. 12. April, 1828.

Beck's Crowfoot. Pl. ½ foot.

147 R. BELVÌSII (D. C. syst. 1. p. 291.) stem erect, branched, furnished with a few spreading hairs as well as the petioles; leaves smooth, ternate, with 3-lobed segments; lobes oblong acutely-cut at the apex; calyx smooth, spreading, shorter than the petals. ♃. H. Native of North America. Flowers a little smaller than those of *R. àcris*. Carpels compressed, even, terminated by short straight points.

Belvis's Crowfoot. Fl. June, July. Pl. 1½ foot.

148 R. MARYLA'NDICUS (Poir. dict. 6. p. 126.) stem erect, a little branched, clothed with soft hairs at the base as well as the petioles, and with close-pressed pubescence at the top; leaves smoothish, ternate, with 3-lobed segments, and oblong acute deeply toothed lobes; calyx smooth, spreading shorter than the petals. ♃. H. Native of North America in shady woods, Maryland, Pennsylvania to Virginia. Root fibrous, fascicled. Stem 2-3-flowered. Flowers pale yellow, a little larger than those of *R. àcris*. Carpels compressed, with straight points.

Maryland Crowfoot. Fl. May, July. Clt. 1811. Pl. 1 foot.

149 R. NÍTIDUS (Muhl. cat. Elliott. carol. 2. p. 61.) plant smoothish; radical leaves on long stalks, ternate; leaflets stalked, profoundly trifid or 3-parted; lobes broad-lanceolate trifid cut; lobes of the cauline leaves almost linear, entire, or trifid; calyx spreading, at length reflexed, rather hairy; carpels orbicular, compressed, marginate, terminated by short points. ♃. H. Native of North America on the lower plains of Columbia; Canada; Lower Carolina, &c. R. septentrionàlis, Poir. dict. 6. p. 123. Pursh. fl. amer. sept. 2. p. 395. R. Caroliniànus, D. C. syst. 1. p. 292. R. híspidus, var. Mich. fl. bor. amer. 1. p. 321. R. lanuginòsus, var. Pursh. fl. amer. sept. 2. p. 394.

Shining Crowfoot. Fl. June, July. Clt. 1826. Pl. 1 to 2 feet.

150 R. TOMENTO'SUS (Poir. dict. 6. p. 127.) stem ascending, very villous, 1-2-flowered; leaves stalked, downy, ternate, upper ones sessile, ovate, entire; calyx very villous, somewhat reflexed. ♃. H. Native of Upper Carolina. R. lanuginòsus, Pursh. ex. Lamb. herb. Like *R. pubéscens* and *R. Marylándicus*. Roots fibrous, fascicled. Flowers yellowish-white; petals a little longer than the calyx.

Downy Crowfoot. Fl. May, July. Clt. 1820. Pl. ½ foot.

151 R. PRÆMÒRSUS (H. B. et Kth. nov. gen. et spec. amer. 5. p. 47.) stem erect, usually 2-flowered, villous as well as the petioles; leaves ternate, with bluntly and deeply-toothed segments, lateral ones bifid, middle ones trifid, stalked; calyx reflexed; petals 10 to 15, wedge-shaped. ♃. H. Native of South America on mount Antisana. Like *R. Marylándicus* in habit, but differing in having 10 to 15 petals. Carpels with short straight points.

Præmorse-rooted Crowfoot. Pl. ½ foot.

152 R. BONPLANDIA'NUS (H. B. et Kth. nov. gen. et spec. amer. 5. p. 46.) stems erect, 2-3-flowered, rather hairy; leaves trifid, 3-parted and ternate, upper surface smooth, under surface pilose-pubescent, with crenate-serrated 2-3-lobed segments; calyx hairy, reflexed; petals 10 to 12, rounded at the apex. ♃. H. Native of New Granada at the height of 3000 feet.

Bonpland's Crowfoot. Pl. ½ to 1 foot.

153 R. GEOÌDES (H. B. et Kth. nov. gen. et spec. amer. 5. p. 47.) stem erect, 1-3-flowered, very villous as well as the petioles; leaves villous, trifid, or 3-parted, with ovate-toothed lobes; calyx reflexed; petals 10, oblong-linear. ♃. F. Native of Mexico in the mountains. Habit of *Gèum montànum*. Petals twice as long as calyx. Hairs of the stem spreading, those of the leaves closely pressed.

Geum-like Crowfoot. Pl. ½ foot.

154 R. SIBBALDIOÌDES (H. B. et Kth. nov. gen. et spec. amer. 5. p. 48.) stem almost naked, 1-flowered; leaves pilose, pinnate, with ovate-toothed segments; terminal segment 3-lobed; floral leaves pinnatifid; calyx spreading, shorter than the oblong petals. ♃. F. Native of South America on the high mountain of Quindiu or Antisana. A very dwarf herb, with the habit of *Sibbáldia procùmbens*. Radical leaves crowded, dark green. Carpels ovate, rather compressed, terminated by short straight points.

Sibbaldia-like Crowfoot. Pl. ¼ foot.

155 R. DELPHINIFO'LIUS (H. B. et Kth. nov. gen. et spec. amer. 5. p. 48.) stems erect, few-flowered, hairy; leaves ternate; lateral segments bifid, middle one 3-parted, with deeply-serrated bifid or trifid laciniæ and lanceolate lobes; calyx pilose, reflexed; petals 15. ♃. F. Native of Mexico on the mountains at the height of 5000 feet.

Larkspur-leaved Crowfoot. Pl. 1 foot.

156 R. PEDUNCULA'RIS (Smith in Rees' cyclop. no. 49.) leaves smoothish; radical ones stalked, ternate, with 3-lobed segments, which are acutely cut at the apex; cauline leaves 1 or 2, linear or trifid; stem erect, 1-leaved, 1 or 2-flowered; calyx at length reflexed; petals 8-10, oblong. ♃. H. Native of the Straits of Magellan on the borders of woods, at a place called *Fresh-water Bay* or *Baye Duclos*. Habit of *R. bulbòsus*. Carpels globose, even, with hooked points. Stem more or less hairy.

Peduncled-flowered Crowfoot. Fl. Dec. Pl. 1 foot.

157 R. GRANDIFLO'RUS (Lin. spec. 781.) leaves rather villous, radical ones stalked, ternate, with unequally jagged segments; stem-leaves linear or divided into linear lobes; stem erect, villous, few-flowered; calyx reflexed. ♃. H. Native of Cappadocia and about Constantinople. Desf. Choix. 57. t. 44. Flowers larger than those of *R. bulbòsus*.

Great-flowered Crowfoot. Fl. May. Clt. 1817. Pl. ½ to 1 ft.

158 R. PALU'STRIS (Lin. MSS. Smith in Rees' cyclop. no. 52.) leaves rather hairy, stalked, cleft in 3 beyond the middle, with blunt recesses and ovate-cut toothed lobes; stem erect, branched, almost naked; carpels even, terminated by straight short points. ♃. H. Root a little like that of *R. bulbòsus*.

Var. α, orientàlis (D. C. syst. 1. p. 294.) stem trichotomous; radical leaves on short stalks. ♃. H. Native of the Levant. R. orientàlis, palústris, apii folio, &c. Tour. cor. 20. Stems numerous.

Var. β, Córsicus (D. C. syst. 1. p. 295.) stems dichotomous; radical leaves on very long stalks. ♃. H. Native of Corsica. R. Corsicus, D. C. fl. fr. 5. p. 637. Herb dark green; style hardly hooked.

Marsh Crowfoot. Pl. 1 foot.

159 R. CYMBALARIFO'LIUS (Balb. in Mor. 1. p. 2.) root fascicled; leaves rather hairy, radical ones on long stalks, orbicular 3-lobed: lobes coarsely-crenate, cauline leaves trifid and simple; stem branched dichotomous, rather naked, filiform; sepals reflexed; carpels smooth, hooked. ♃. H. Native of the island of Sardinia in rivulets.

Cymbalaria-leaved Crowfoot. Pl. ½ foot.

160 R. ORTHORY'NCHUS (Hook. fl. bor. amer. p. 21. t. 9.) plant beset with adpressed hairs; stem erect, slender, branched, and rather leafy; radical leaves stalked, ternate; leaflets linear-multifid, with white callose tips; calyx reflexed; styles straight, longer than the carpels, which are broadly semi-ovate, com-

pressed, and marginate. ♃. H. Native of North America, not unfrequent on the low points of land near rivers on the north-west coast. This species comes very near to *R. dichótomus*, D. C. and *R. fasciculàris*, Muhl.

Hard-beaked-leaved Crowfoot. Fl. May, Jul. Clt. 1826. Pl. 1 ft.

161 R. bulbo'sus (Lin. spec. 778.) radical leaves stalked, ternate or quinate-pinnate, with trifid or quinquifid deeply-toothed 3-lobed segments; middle segment stalked; stem erect, bulbous at the neck; calyx reflexed; petals obcordate. ♃. H. Native throughout Europe in pastures, meadows, grass-plats, and waste ground every where; also in North America. Smith, eng. bot. 8. t. 515. Curt. lond. fasc. 1. t. 38. Mart. rust. t. 28. Mill. illustr. t. 51. Fl. dan. t. 551. Plant more or less hairy. This species though acrid is commonly eaten along with other herbage, by domestic cattle. The root, which is said to be the most acrid part of the plant, and which is said to raise blisters with less pain and more safety than Spanish flies; hence these roots have been applied for that purpose, particularly to the joints in cases of gout. According to Hoffman, beggars make use of them to blister their skin, with a view of exciting compassion. The juice of the herb is said to be more acrid than that of *R. sceleràtus*, and if applied to the nostrils excites sneezing. The roots lose their stimulating quality by drying, and are even eatable when boiled. Hogs are fond of them, and frequently dig them up. The flowers are vulgarly called *butter-flower*, *butter-cups*, *king's-cups*, *gold-cups*, and they are the *cuckoo buds of yellow hue* of Shakspeare. *R. rèpens* and *R. àcris*, however, are all confounded under these names by the vulgar.

Var. β, *múltiplex*; flowers double. This, with the double flowering *R. àcris*, is called in the gardens *Double yellow Bachelor's buttons*.

Var. γ, *bracteàtus* (Schleich. pl. helv. or brachiatus, Schleich. cat.)

Bulbous-rooted Crowfoot. Fl. May, Ju. Britain. Pl. ½ to 2 ft.

Sect. V.—Echine'lla (εχινος, *echinos*, a hedge-hog; in allusion to the prickly or tubercled carpels,) D. C. prod. 1. p. 41. carpels scabrous, with tubercles or prickles (f. 9. *e*.) Annual plants with small yellow flowers.

§ 1. *Leaves dissected.*

162 R. philonòtis (Retz. obs. 6. p. 31.) leaves 3-lobed or ternate, with deeply-toothed blunt lobes; middle lobe stalked; calyx reflexed; stem erect, many-flowered; carpels bearing a row of small tubercles at the margin. ⊙. H. Native of south and middle Europe in moist meadows and waste or cultivated ground that is liable to be overflowed by water; also in North America in old meadow and low wet grounds, from New England to Pennsylvania. R. bulbòsus, var. β. Huds. 241. R. agràrius, All. auct. p. 27. R. sardòus, Crantz. austr. 2. p. 84. R. pallídior, Vill. dauph. 4. p. 751. R. hirsùtus, Ait. hort. kew, ed. 1. vol. 2. p. 268. Curt. lond. 2. t. 40. Smith, engl. bot. t. 1504. R. pállidus, Reiss. in Schrad. journ. bot. 1. p. 425. R. Palénsis, Berg. fl. bass. pyr. 2. p. 405. Herb very variable in luxuriance, of a paler hue than most of this genus, and clothed with fine silky spreading hairs. The name sardous, given by Jacquin, on account of its being supposed to be the plant that caused the sardonic laugh.

Var. β, *intermèdius* (Poir. dict. 6. p. 116.) leaves almost without hairs. ⊙. H. Native in humid places. R. púmilus, Thuil. fl. par. ed. 2. vol. 1. p. 277, but not of Poir.

Var. γ, *párvulus* (Lin. mant. 76.) stem dwarfish, usually 1-flowered. ⊙. H. Native in dry, stony, arid, exposed places. R. parviflòrus, Gouan. fl. monsp. 270.

Moisture-loving or Pale-hairy Crowfoot. Fl. June, Oct. Britain. Pl. ¼ to 1 foot.

163 R. lacinia'tus (Baugm. enum. str. trans. 2. p. 131. Schlecht. anim. 2. p. 36.) stem erect, silky-villous as well as the leaves, which are ternate-3-parted; segments trifid, linear, toothed; peduncles elongated, filiform, densely pilose; calyx spreading; carpels muricated and mucronate. ⊙. H. Native of Transylvania on dry mountains.

Jagged-leaved Crowfoot. Fl. June, July. Clt. 1828. Pl. 1 ft.

164 R. tubercula'tus (Kit. ex. Balb. cat. hort. taur. 1813. p. 64.) leaves smooth, deeply multifid, with linear acute lobes; stem erect, many-flowered; carpels compressed, furnished with very blunt tubercles at the sides. ⊙. H. Native of Hungary, Iberia, and north of Tauria in corn fields. Very like *R. arvénsis*, but differing in the carpels being tubercled, not prickly.

Tubercled-carpelled Crowfoot. Fl. Ju. Jul. Clt. 1817. Pl. 1 ft.

165 R. arve'nsis (Lin. spec. 780.) leaves smooth, first ones toothed at the apex; radical ones 3-parted; cauline ones multifid, with linear lobes; stem erect, many-flowered; carpels very prickly at the sides. ⊙. H. Native throughout middle and south Europe in corn fields common; in North America about Charlestown. Engl. bot. t. 135. Curt. lond. fasc. 6. t. 36. Mart. rust. t. 56. Fl. dan. t. 219. R. echinàtus, Crantz. aust. 2. p. 118. but not of Lin. This plant is very acrid and dangerous to cattle, though they are said to eat it greedily. M. Brugnon, who has given a particular account of its qualities, relates that three ounces of the juice killed a dog in 4 minutes. Several sheep were killed by feeding on this herb near Turin, which first led to an investigation of the matter. Cholic, with inflammation of the stomach, were the symptoms, which were best removed by pouring vinegar down the animals' throats. Hence, like most vegetable poisons, this Crowfoot seems to act on the nerves, and yet black spots were found in the sheep's stomachs.

Var. β, *orientàlis* echinatus, arvensis, crassiore fructu, Vaill. herb. The carpels of this variety are almost double the size of those of var. *a*, and the prickle much longer.

Corn-field Crowfoot. Fl. June, Aug. Britain. Pl. 1 foot.

166 R. murica'tus (Lin. spec. 780.) leaves smooth, stalked, somewhat orbicular, 3-lobed, and coarsely toothed; stem rather erect, or diffuse; peduncles opposite the leaves; calyx spreading; carpels beset with prickly tubercles, each ending in a straight acuminated horn. ⊙. H. Native throughout the whole region of the Mediterranean, from Portugal to Tauria in low humid places. A very variable plant, therefore many names have been given to it by authors. Smith, fl. græc. t. 522. Lam. ill. 498. —Clus. hist. 233. f. 2.

Var. β, *Creticus* (D. C. prod. 1. p. 42.) stem erect.—Mor. hist. 2. p. 440. sect. 4. t. 29. f. 24. Native of Crete.

Var. γ, *Carolìnus* (D. C. prod. 1. p. 42.) petals longer than the calyx. Native of Carolina and Virginia. R. muricàtus, Michx. fl. bor. amer. 1. p. 321. R. echinatus, Vent. cels. t. 73.

Var. δ, *Tucumánicus* (D. C. prod. 1. p. 42.) carpels less acuminated. Native of South America near the river Plate. R. palústris echinàtus. Fewill. obs. 3. p. 58. t. 18.

Var. ε, *Brasiliànus* (D. C. prod. 1. p. 42.) sheaths of petioles dilated. Native of Brazil by the sea-side in humid places. R. ventricòsus, Vent. cels. 73. R. muricàtus, St. Hil. fl. bras. p. 7.

Muricated-carpelled Crowfoot. Fl. Jul. Aug. Clt. 1683. Pl. ½ ft.

167 R. chìus (D. C. syst. 1. p. 300.) leaves rather villous, cordate, orbicular, broadly toothed; stems erect, villous; pedicels opposite the leaves; calyx reflexed; carpels tubercled, each ending in an acuminated hooked horn. ⊙. H. Native of the island of Scio. Root calyx, and petals like those of *R. philonòtis*. Leaves like those of *R. parviflòrus*, and with the carpels of *R. muricàtus*.

Scio Crowfoot. Fl. June, July. Clt. 1827. Pl. ½ foot.

168 R. cornu'tus (D. C. syst. 1. p. 300.) leaves smooth, biternate; segments 3-lobed, with the lobes oblong-linear, acute;

pedicels opposite the leaves; calyx reflexed; carpels finely tubercled, each ending in a long acuminated horn. ⊙. H. Native of Syria. This species is intermediate between *Ranúnculus* and *Ceratocéphalus*.

Horned Crowfoot. Pl. ½ foot.

169 R. PINNA'TUS (Poir. dict. 6. p. 126.) leaves villous, pinnate; leaflets stalked, oblong, acute, somewhat pinnatifid; pedicels opposite the leaves, calyx reflexed; carpels oval, finely tubercled, mucronate with the short styles. ⊙. H. Native of the East Indies and the Cape of Good Hope. Root with blackish fibres. Stem branched, hispid.

Var. α, Sonneràtii (D. C. prod. 1. p. 42.) Native of India. R. parviflòrus, var. c. Bir. ren. 46.

Var. β, Hermánni, (D. C. prod. 1. p. 42.) Native of Cape of Good Hope. R. Africanus pratensi hirsuto similis. Herm. cat. pl. afr. p. 18.

Pinnate-leaved Crowfoot. Pl. 1 foot.

170 R. PARVIFLÒRUS (Lin. spec. 780.) leaves villous, orbicular, 3-lobed, coarsely toothed or cut; stem decumbent, covered with soft hairs; pedicels opposite the leaves; calyx a little reflexed, equal in length to the petals; carpels granular-tubercled. ⊙. H. Native almost throughout Europe in low humid places; plentiful in Britain. Smith. eng. bot. t. 120.—Ray. angl. 3. p. 248. t. 12. f. 1.—Mor. hist. 2. p. 440. sect. 4. t. 28. f. 1. Hairy Crowfoot. Petiv. engl. herb. t. 38. f. g.

Var. β, acutílobus, (D. C. prod. 1. p. 42.) leaves deeply 3-lobed; lobes cut at the apex; teeth acute. Native of Teneriffe.

Var. γ, eréctus, (D. C. prod. 1. p. 42.) stem erect; leaves 5-lobed or coarsely 5-toothed. Native of Syria.

Small-flowered Crowfoot. Fl. May, Ju. Eng. Pl. trailing.

171 R. TRÍLOBUS (Desf. atl. 1. p. 437. t. 113.) leaves somewhat villous or smooth; first ones roundish, crenated, the rest 3-parted; lobes diverging, cuneated at the base, toothed at the apex; stem erect; pedicels opposite the leaves; calyx at length somewhat reflexed, shorter than the petals; carpels granularly-tubercled. ⊙. H. Native of the regions of Mediterranean, Barbary, Cyprus, Greece, Naples, France, and of Teneriffe. R. parviflòrus, var. b, Bir. ren. 46. R. Rosàni Tenore. prod. fl. neap. This species is allied on the one hand to *R. parviflòrus* and on the other to *R. philonòtis*.

Three-lobed-leaved Crowfoot. Fl. Ju. Jul. Clt. 1823. Pl. ½ ft.

172 R. CORDÍGERUS (Viv. app. fl. cors. in Schlecht. Linnæa 1. p. 502.) plant clothed with silky hairs; radical leaves cordate, roundish-ovate, crenate-toothed, entire, or 3-lobed, stem ones cut or quite entire; stem usually 2-flowered, or with radical, naked, 1-flowered peduncles; calyx reflexed; carpels tubercled. ⊙. H. Native of Corsica.

Heart-bearing Crowfoot. Pl. ½ foot.

173 R. SESSILIFLÒRUS (R. Br. prod. fl. holl. vol. 2. ined. D. C. syst. 1. p. 302.) leaves rather villous, kidney-shaped, 3-parted or coarsely toothed; stems procumbent; flowers sessile, opposite the leaves; carpels granularly-tubercled. ⊙. H. Native of New Holland about Port Jackson. The disposition of the flowers is very near to that of *R. nodiflòrus*.

Sessile-flowered Crowfoot. Fl. June, July. Pl. prostrate.

174 R. VERRUCÒSUS (Sternb. in gaz. bot. ratisb. 1826.) leaves villous, stalked, ternate; segments trifid, acutely and deeply toothed, all stalked; stem erect, villous; root bulbous; calyx reflexed; carpels tubercled. ♃. H. Native about Trieste.

Warted-fruited Crowfoot. Pl. 1 foot.

§ 2. *Leaves entire.*

175 R. OPHIOGLOSSIFÒLIUS (Vill. dauph. 4. p. 732. t. 49.) lower leaves stalked, cordate, obtuse, upper ones oblong, sessile; stem erect, fistulous; peduncles opposite the leaves; carpels granularly-tubercled. ⊙. H. Native of the south of Europe in moist meadows and bogs, particularly in France, about Montpelier, Portugal, Italy, &c. R. flámmula var. f. Bir. ren. p. 37. R. ophioglossoìdes, Willd. spec. 2. p. 1320. R. cordifòlius, Bast. fl. main. et loir. 207. R. Telonénsis Robert. R. fistulòsus, Brign. fasc. rar. pl. forogul 25. R. uliginòsus, Tenore in litt. Carpels ovate, compressed.

Adders'-tongue-leaved Crowfoot. Fl. Ju. Clt. 1823. Pl. ½ ft.

176 R. ULIGINO'SUS (Willd. enum. 586.) leaves ovate and lanceolate, serrated, smooth; stem ascending, fistulous; peduncles opposite the leaves; petals length of calyx. ⊙. H. Native of Teneriffe. Very like *R. flámmula* and *R. ophioglossifòlius*. Flowers as small as those of the *abortìvus*. The immature fruit has only been seen; they are disposed in a globose head, and appear to be granularly-tubercled.

Bog Crowfoot. Fl. June, July. Clt. 1829. Pl. ½ foot.

177 R. NODIFLO'RUS (Lin. spec. 773.) radical leaves stalked, oval-oblong; flowers sessile opposite the leaves; carpels granularly-tubercled, scarcely beaked. ⊙. H. Native of France and Hungary, &c. in low places where the rain remains a considerable time. Carpels collected into a globose head.

Var. α, dentàtus (D. C. prod. 1. p. 43.) leaves 3-nerved, toothed at the apex, Native of Hungary. R. nodiflòrus. Walds. et Kit. hung. 2. p. 192. t. 176. R. nodiflòrus, var. β, Sims, bot. mag. t. 2171. var. γ, sículus, &c.—Petiv. gaz. 39. t. 24. f. 9.

Knot-flowered Crowfoot. Clt. 1714. Pl. ½ foot.

178 R. LATERIFLO'RUS (D. C. syst. 1. p. 251.) leaves radical, stalked, oval-oblong; flowers sessile, opposite the leaves or axillary; carpels granularly-tubercled, beaked by the elongated styles. ⊙. H. Native of Syria. Deless. icon. sel. 1. t. 30.—Cuss. hort. cath. 185.

Lateral-flowered Crowfoot. Pl. ¾ foot.

† *Species not sufficiently known.*

§ 1. *Leaves entire.*

179 R. OBTUSIU'SCULUS (Raf. in journ. bot. 1808. vol. 1. p. 225.) Native of North America, in marshes of New Jersey. Stem erect, simple; leaves stalked, lanceolate, bluntish; flowers few, terminal.

Bluntish-leaved Crowfoot. Pl. 1 foot.

§ 2. *Leaves multifid.*

180 R. DE'BILIS (Raf. in journ. bot. 1808. vol. 1. p. 225.) Native of Pennsylvania near German-town. Stem weak; leaves few, bifid, cut, serrated, on long half-jointed stalks; flowers terminal, solitary.

Weak Crowfoot. Pl. procumbent.

181 R. FORSKŒ'HLII (D. C. syst. 1. p. 303.) R. multífidus, Forsk. fl. ægyp. 102. R. chærophýllos, Var. a. Bir. ren. 42. Native of Arabia. Leaves multifid, lower ones pinnately jagged. Stem 2 feet high, erect, many-flowered, round at the base, striated at the apex, pilose; calyx equal in length to the corolla.

Forsköhl's Crowfoot. Pl. 2 feet.

182 R. CANTONE'NSIS (D. C. prod. 1. p. 43.) Native of China near Canton. Hecatònia pilòsa, Lour. coch. 371. D. C. syst. 1. p. 228. Stem erect, branched, pilose; leaves pilose, ternate, lanceolate, serrated; flowers terminal, solitary; carpels acuminated, collected into a globose head. (Lour.)

Canton Crowfoot. Pl. 2 feet.

183 R. LAGASCA'NUS (D. C. prod. 1. p. 43.) Native of Spain. R. pubéscens. Lag. cat. hort. madr. p. 19. Plant hairy; peduncles elongated, 1-flowered; calyx pilose, reflexed; leaves 3-parted, 3-lobed, crenated, upper ones lanceolate, quite entire. (Lag.)

Lagasca's Crowfoot. Pl. ?

184 R. HORNEMA'NNI (Schlecht. anim. 2. p. 36.) Native of North America. R. tuberòsus, Horn. hort. hafn. 2. p. 527. Calyx reflexed, pilose; peduncles furrowed; leaves triternate;

leaflets 3-lobed, hairy; root tuberous? bulbous? Very like *R. philonòtis*.

Hornemann's Crowfoot. Pl. 1½ foot.

185 R. OBTUSIFÒLIUS (Horn. hort. hafn. 2. p. 528. Schlecht. anim. 2. p. 36.) Native of Spain. Very like *R. lanuginòsus*, but the lobes of the leaves are blunt.

Blunt-leaved Crowfoot. Pl. ?

Cult. The species belonging to section *Batrachium* require to be grown in water: those belonging to sections *Ranunculàstrum* and *Thòra* will grow in any common garden soil, either in a moist or dry situation, and being all grumose-rooted plants, they should be increased by offsets from the roots, or by seeds; those belonging to section *Hecatònia*, being all fibrous-rooted plants, should be increased by dividing the plants at the root or by seeds; they will thrive very well in any kind of soil, but a moist situation suits most of them best, and some of them will grow in water, such as *R. biternàtus*, *flámmula*, *lingua*, &c. and those belonging to section *Echinélla*, being all trifling annual plants, only require to be sown in the open ground; they will thrive in any kind of soil, either in a wet or dry situation. The species most worth the cultivator's care are the following: *R. rutæfòlus*, *isopyroìdes*, *glaciàlis*, *alpéstris*, *aconitifòlius*, *platanifòlius*. *Pyrenæ'us*, *amplexicaúlis*, *parnassifòlius*, *gramíneus*, *grácilis*, *fumariæfòlius*, *Illýricus*, *Asiaticus*, *àcris var. flore-plèno*, *repens var. flore-plèno*, *Krapfia*, and *macropétalus*, &c. In the cultivation of all, the situations where each grow naturally should be consulted.

XV. CASA'LEA (in honour of Abbate Manuel Ayres de Casal, who in his Corographia Brasiliana mentions many plants.) St. Hil. fl. bras. 1. p. 8.

Lin. syst. *Polyándria*, *Polygýnia*. Calyx of 3-coloured, petal-like sepals. Petals 3, sometimes only 1 or 2 from abortion, usually shorter than the sepals, unguiculate, each furnished with a fleshy orbicular scale on the inside at the base. Stamens 4-18, but generally 6. Carpels numerous, compressed, smooth, each ending in a point, disposed in hemispherical or globular heads. Small, smooth, marsh herbs, with fibrous roots and erect or decumbent rooting stems. Leaves entire or parted. Peduncles 1-flowered opposite the leaves. Flowers small, white, or yellow.

1 C. SESSILIFLÒRA (St. Hil. fl. bras. 1. p. 9.) stems prostrate, hairy; leaves 3-parted, cut, pilose, ciliated, radical ones stalked, rather orbicular, upper ones almost sessile, somewhat triangular, truncately-cuneated at the base; flowers sessile; stamens 5-6. ⊙. H. Native of Brazil in marshes in the province of Cis Platine. Flowers yellowish; petals white at the base.

Sessile-flowered Casalea. Fl. Nov. Pl. prostrate.

2 C. PHYTEUMÆFÒLIA (St. Hil. fl. bras. 1. p. 9.) stem erect; leaves stalked, radical ones usually cordate, lower stem ones ovate, middle ones oblong-rhomboid, uppermost ones almost linear acute; fruit bearing peduncles erectish; stamens usually 12; heads of carpels ovate. ⊙. H. Native of Brazil in marshes in the province of Minas Geraes. Ranúnculus phyteumæfòlius, Spreng. syst. app. 218. Sepals white, a little shorter than the petals, which are also white.

Var. β, Bonariénsis (St. Hil. fl. bras. 1. p. 10.) flowers a little larger than in the species; stem more branched; leaves all toothed, radical ones a little smaller; stamens 5-12. ⊙. H. Native of Brazil in the province of St. Paul, in marshes, and of Buenos Ayres. Ranúnculus Bonariénsis. Pers. ench. 1. p. 103. C. heterophýllus, Smith in Rees' cycl. no. 12. Flowers white.

Phyteuma-leaved Casalea. Fl. Sep. Pl. 1 to 2 feet.

3 C. FICARIÆFO'LIA (St. Hil. fl. bras. 1. p. 10.) plant quite smooth; stem rather decumbent; leaves cordate, angular, quite blunt, upper ones rather truncate at their base, orbicularly-triangular or ovate; fruit bearing peduncles spreading; flowers small; petals elliptical-lanceolate; stamens 5-6; heads of carpels globose. ⊙. H. Native of Brazil in the province of Rio Grande do Sul in humid places and rivulets. Petals and sepals whitish.

Var. β, mìnor (St. Hil. fl. bras. 1. p. 10.) stem much smaller, erect; leaves smaller, crenate-angular, or slightly or coarsely crenated; radical ones more orbicular than the rest; flowers yellow. ⊙. H. Native of Brazil and Buenos Ayres in marshes. Ranúnculus Bonariénsis, Poir. dict. 6. p. 102. Deless. icon. sel. 1. p. 29. D. C. syst. 1. p. 250. R. cochleariæfòlius, Horn. cat. hort. hafn.

Ficaria-leaved Casalea. Fl. May, Jul. Clt. 1817. Pl. ¼ to ½ ft.

4 C. ASCE'NDENS (St. Hil. fl. bras. 1. p. 11. t. 1.) plant quite smooth; stems ascending, slender; leaves stalked, radical ones cordate-roundish; coarsely crenate, stem ones cordate, crenated, upper ones rather obovate, or somewhat obovate 3-lobed, uppermost ones very small, usually linear; petals obovate-oblong; stamens usually 4; heads of carpels cylindrically-oblong. ⊙. H. Native of Brazil near Monte Video in marshes. Ranúnculus cordifòlius, Spreng. syst. app. p. 218. Flowers white; sepals longer than the petals.

Ascending Casalea. Fl. Nov. Pl. ¼ to ½ foot.

5 C. FLAGELLIFO'RMIS (St. Hil. fl. bras. 1. p. 11.) plant quite smooth; stem creeping, rooting; leaves rather orbicular, cordate at the base, obsoletely angular; flowers minute; stamens usually 5; heads of carpels globose. ⊙. H. Native of Brazil in the provinces of Minas Geraes and St. Paul in marshes, as well as of Chili and Peru. Ranúnculus flagellifórmis, Smith in Rees' cyclop. no. 13. D. C. syst. 1. p. 251. R. hydrocótile, Domb. ined. R. renifórmis, Lamb. herb. Flowers white; petals very minute, usually 2.

Var. β, lutéscens (St. Hil. fl. bras. 1. p. 12.) leaves less cordate; calyx and corolla yellowish. ⊙. H. Native of Brazil in the province of Rio Grande do Sul. in bogs.

Whip-formed Casalea. Fl. Sept. March. Pl. creeping.

Cult. Casalea is a genus of trifling annual plants not worth cultivating, except in the gardens of the curious. They only require to be sown in the open ground about the middle of April, in a moist warm situation, however many of them will grow in a dry situation.

XVI. APHANOSTE'MMA (*a, priv.*; *φαινω, phaino*, to appear, *στεμμα, stemma*, a crown, in allusion to the small petals.) St. Hil. fl. bras. 1. p. 13.

Lin. syst. *Polyándria*, *Polygýnia*. Calyx of 5, coloured, petal-like deciduous sepals. Petals 5, scarcely manifest, distant, orbicular, somewhat bilabiate, in the form of glands, unguiculate, with a nectariferous hollow at the base of each, deciduous. Stamens and ovaries indefinite. Stigmas minute. Carpels rather orbicular, compressed, somewhat marginate, collected into a small ovate head. A smooth herb, with lobed multifid leaves. Peduncles opposite the leaves. Corolla valvate in the bud.

1 A. APIIFO'LIUM (St. Hil. l. c.) ⊙. H. Native of Brazil near Monte Video, as well as of Buenos Ayres in marshes. Ranúnculus apiifòlius, Pers. ench. 2. p. 105. Deless. icon. sel. 1. t. 26. Stem glaucous, branched, but sometimes almost simple, with corymbose branched panicles. Leaves almost cordate, orbicular, obtuse, divided into 5-6 lobes beyond the middle; lobes usually trifid, middle one profoundly 5-cleft or trifid; segments more or less toothed, bluntish; upper leaves almost sessile 3-parted, with linear, narrow acute, quite entire segments, uppermost leaves sessile, linear, narrow, with two membranous auricles at the base of each. Sepals obtuse, white, or reddish. Petals much smaller than the stamens.

Parsley-leaved Aphanostemma. Pl. 1 to 2 feet.

Cult. The seeds of this plant may be sown in a pot of earth and placed in a hot-bed, taking care to keep it moist, and when

the plants are of sufficient size they may be planted out in a moist or boggy situation, where they will probably ripen their seeds.

XVII. FICA'RIA (from *ficus*, a fig, so named, because the grumose roots bear tubercles resembling little figs,) Dill. nov. gen. p. 108. t. 5. D. C. syst. 1. p. 304. prod. 44.

LIN. SYST. *Polyándria*, *Polygýnia*. Calyx of 3-sepals, soon falling off. Petals 9, foveolate on the inside at the base. Stamens and ovaries numerous. Carpels smooth, compressed, blunt. Smooth perennial herbs with yellow flowers. Petals 8 to 12.

1 F. RANUNCULOÌDES (Mœnch. meth. 215.) roots grumose; stem leafy; leaves cordate; sepals 3. ♃. H. Native throughout the whole of Europe, in meadows, bushy places, and about hedge banks. Plentiful in Britain. Ranúnculus Ficària, Lin. spec. 774. Smith, engl. bot. t. 584. Curt. lond. fasc. 2. t. 39. Mart. rust. t. 21. Fl. dan. 499. F. vérna, Huds. 244. D. C. syst. 1. p. 304. Flowers golden yellow. The young leaves of this plant, according to Linnæus, are sometimes used as greens in Sweden. The particular form of the roots probably recommended this plant as a cure for the piles, hence its English name Pilewort. These roots or tubercles lie near the surface, and are sometimes laid bare by the rains, and in this state have induced the ignorant, under the influence of superstition, to fancy that it rained wheat, which the tubercles somewhat resemble. The plant is injurious in moist grass lands, but is effectually destroyed by a dressing of coal or wood ashes. We usually find the flower closed from five in the evening to nine in the morning, and in wet weather.

Var. β, multiplex; flowers double yellow.

Crowfoot-like Pile-wort or Lesser Celandine. Fl. April. Britain. Pl. ¼ to ½ foot.

2 F. GLACIA'LIS (Fisch. in litt. icon.) roots fibrous, fascicled; leaves ovate; scapes naked, 1-flowered; sepals 5. ♃. H. Native of Dauria on the top of Mount Tchockondo. Cáltha glaciàlis, Spreng. syst. 2. p. 660. Stamens and ovaries numerous, about the length of the calyx. Fruit unknown. Having the petals of *Ficaria*, but differing in the calyx being of 5 leaves. Habit of *Cáltha appendiculàta*, D. C. syst. 1. p. 305.

Icy Pilewort. Fl. April? Pl. ½ foot.

Cult. Ficaria will thrive well in any common garden soil, and will succeed best under the shade of trees. The double variety of *F. Ranunculoìdes* is a very desirable plant. They are easily increased by separating the tubers of the roots in the autumn.

Tribe IV.

HELLE'BOREÆ (plants agreeing with Helléborus,) D. C. syst. 1. p. 306. prod. 1. p. 44. Calyx and corolla imbricated in the bud (f. 14. *a*.) Petals sometimes wanting (f. 10. *a*.) sometimes irregular, bilabiate, nectariferous (f. 11. *e*. f. 12. *b*.) Calyx of 5 petal-like sepals (f. 11. *b*. f. 12. *a*.) Carpels capsular, opening on the inside (f. 11. *c*. f. 12. *c*.) many-seeded.

XVIII. CA'LTHA (a syncope of καλαθος, *kalathos*, a goblet, in allusion to the form of the corolla, which may be likened to a golden cup.) Pers. ench. 2. p. 107. D. C. syst. 1. p. 306. prod. 1. p. 44.

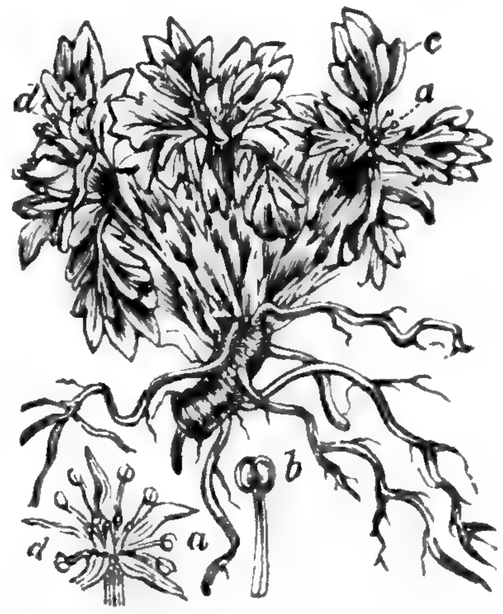
LIN. SYST. *Polyándria*, *Polygýnia*. Calyx coloured, of 5 orbicular petal-like sepals (f. 10. *a*.) Petals wanting; stamens numerous (f. 10. *b*.) Ovaries 5 to 10. Capsules 5 to 10 compressed, spreading, 1-celled, many-seeded. Herbs perennial, very smooth, somewhat acrid. Flowers golden coloured, and their juice gives a yellow colour to butter. *C. nàtans* has white flowers.

The English name of the genus *Marsh Marigold* is given to it because the species inhabit humid places, and in the flowers resembling those of the Marigold.

SECT. I. PSYCHROPHÌLA (ψυχρος, *psychros*, cold, and φιλεω, *phileo*, to love; inhabitants of cold countries,) D. C. syst. 1. p. 307. prod. 1. p. 44. Calyx permanent. Scapes 1-flowered. Radical leaves halbert-shaped, with the appendages rising upwards.

1 C. APPENDICULA'TA (Pers. ench. 2. p. 107.) scape 1-flowered, very short; leaves trifid; wedge-shaped; sepals 5; pistils 8. ♃. H. W. Native on humid mountains in the Straits of Magellan, and on subalpine hills in Terra del Fuego. C. paradóxa, Sol. mss. Forst. Lin. soc. trans. 8. p. 34. Two lateral lobes of leaves elevated in the form of appendages. Scapes length of leaves. Sepals oblong-lanceolate marcescent (f. 10.)

FIG. 10.



Appendiculate-leaved Marsh Marigold. Pl. ¼ foot.

2 C. SAGITTA'TA (Cav. icon. 5. no. 456. t. 414.) scape 1-flowered; leaves halbert-shaped, auricled; auricles inflexed; sepals 9-10; pistils 25. ♃. F. W. Native at Port Egmont, in one of the Falkland islands, and in rivulets at Success Bay in South America. C. multicapsulàris, Sol. mss. Forst. Lin. soc. trans. 8. p. 324. Flowers yellow. Stamens one-half shorter than the ovate blunt sepals.

Halbert-leaved Marsh Marigold. Pl. ¼ foot.

3 C. KAMTSCHA'TICA (Spreng. syst. 2. p. 666.) scape 1-flowered; leaves ovate, quite entire, somewhat 3-nerved; outer sepals 5, inner ones deciduous; carpels 1-seeded. ♃. H. Native of Kamtschatka. R. Kamcháticus, D. C. syst. 1. p. 43. prod. 1. p. 48. Flowers yellow. Perhaps *Ficària glaciàlis* will prove to be a species of *Cáltha*.

Kamtschatka Marsh Marigold. Pl. ½ foot.

SECT. II. POPULA'GO (from *populus*, the poplar-tree, in allusion to the species growing in humid places among poplar-trees, or perhaps from the shape of the leaves, which they somewhat resemble.) Tourn. inst. 273. t. 145. D. C. syst. 1. p. 308. prod. 1. p. 44.—Cáltha, Lin. gen. no. 703. Calyx deciduous. Stems leafy. Leaves cordate or kidney-shaped, with the auricles not inflexed.

4 C. PALU'STRIS (Lin. spec. 784.) stem erect; leaves cordate, somewhat orbicular, roundly-crenate, with rounded auricles. ♃. H. W. Native almost throughout the whole of Europe, as well as of Western Asia and North America, in marshy meadows, and about the margins of ponds, rivers, and brooks. Fl. dan. 668. Smith, engl. bot. 506. Curt. lond. fasc. 1. t. 40. Stems dichotomous; peduncles furrowed. Flowers large golden-coloured, and if gathered before they expand are said to be a good substitute for capers. The juice of the petals boiled with alum stains paper yellow. Cows will not eat it, unless compelled by extreme hunger; it is therefore a vulgar notion wholly unfounded, that the yellowness of butter in the spring is caused by this plant. Boerhaave says, that when kine eat the plant it occasions such an inflammation, that they generally die.

Var. β, multiplex; flowers double. ♃. H. W. Cultivated in gardens.

Var. γ, minor (Mill. dict. no. 2.) stem generally 1-flowered, ascending. ♃. H. Native of the north of England and Scotland on the tops of mountains, in marshy places. This plant in a wild state does not exceed in size the *Ficària ranunculoìdes*, but when cultivated it grows to the size of *C. radìcans*, bearing

two or three flowers on each stem. C. Ficaroìdes, Don, in Hed. stat. Forf. appendix.

Common *Marsh* Marigold. Fl. March, April. β. in May. Britain. Pl. α, 1 foot, γ, ¼ foot.

5 C. RIPA'RIA; leaves broad-kidney-shaped sharply crenate-toothed; auricles or lobes rounded, distant, coarsely-toothed; stem erect, many-flowered. ♃. H. W. Native of Britain in several places, particularly on the banks of the river Thames in marshes. Plant large, pale green. This plant appears to be the type of the *Double-flowered Caltha*, cultivated in gardens.

River Marsh Marigold. Fl. Ap. May. Britain. Pl. 1½ foot.

6 C. RADÌCANS (Forst. in trans. Lin. soc. 8. p. 321. t. 17.) stem creeping; leaves triangular, somewhat cordate, sharply crenate. ♃. H. Native of Scotland by the sides of lakes and rivulets, near Forfar; about the Pentland hills and in Roslin woods; more common in some spots near Edinburgh than *C. palústris;* in marshes near Collace, Perthshire. Smith, engl. bot. 2175.

Rooting Marsh Marigold. Fl. May, Ju. Scotland. Pl. ½ foot.

7 C. HIMALE'NSIS (D. Don prod. fl. nep. p. 195.) stem ascending, dichotomous; branches 2-flowered; leaves sagittate-cordate, on long stalks, crenate, with a wide recess at the base; lobes toothed, somewhat truncate; sepals 6, ovate. ♃. H. W. Native of Nipaul at Gosaingsthan in overflowed places. C. Emodòrum, Spreng. syst. app. p. 220. Flowers deep yellow. Capsules elliptical, smooth, each with a long beak.

Himmaleh Marsh Marigold. Fl. Aug. Pl. ½ foot.

8 C. INTEGE'RRIMA (Pursh. fl. amer. sept. 2. p. 390.) stem erect, corymbose; leaves orbicular, cordate, quite entire, floral ones sessile, kidney-shaped, obsoletely crenate at the base; sepals oval. ♃. H. W. Native of North America in wet meadows and small rivulets, from New England to Virginia. Flowers smaller than those of *C. palústris;* sepals subobovate, very blunt.

Very-entire-leaved Marsh Marigold. Fl. May, July. Pl. 1 ft.

9 C. ASARIFO'LIA (D. C. syst. 1. p. 309.) stem rather erect, 1-flowered; leaves cordate, kidney-shaped, crenate, with a broad recess; sepals 6 or 7, oval. ♃. H. W. Native of the island of Unalaschka and the Aleutian isles. Radical leaves stalked. Very like *C. palústris*, but smaller.

Asarabacca-leaved Marsh Marigold. Fl. Ap. May. Clt. 1824. Pl. ½ foot.

10 C. PARNASSIFO'LIA (Raf. new york. med. rep. 2. p. 351. no. 28. and in journ. bot. 1808. 1. p. 229.) stem only bearing one flower and one leaf; radical leaves stalked, lanceolate, cordate, very blunt, many-nerved; sepals elliptical. ♃. H. W. Native of North America in shady cedar swamps of New Jersey and Carolina. R. ficarioìdes, Pursh. fl. amer. sept. 2. p. 389. Ranúnculus Ficària, Walt. fl. car. 159. Flowers deep yellow, about the size of those of *Ficaria*.

Parnassia-leaved Marsh Marigold. Fl. June, July. Clt. 1815. Pl. ¼ to ½ foot.

11 C. LEPTOSTA'CHYA (D. C. syst. 1. p. 310. Hook. fl. bor. amer. p. 22. t. 10.) stem bearing one leaf and 1-2-flowers; radical leaves stalked, ovate, cordate, crenate, many-nerved; sepals 10, linear or oblong. ♃. H. W. Native of the western coast of North America, at a place called Prince William's Sound, and in alpine swamps on the Rocky Mountains. Capsules 8 or 10, on very short stipes, pointed.

Slender-spiked Marsh Marigold. Pl. 1 foot.

12 C. BIFLO'RA (D. C. syst. 1. p. 310.) stem bearing only one leaf and 2-flowers; radical leaves stalked, kidney-shaped, crenate, with a very broad recess; sepals oblong. ♃. H. W. Native on the western coast of North America on Banks's Islands. Petioles dilated at the base into a membranous sheath.

Two-flowered Marsh Marigold. Pl. ½ foot.

13 C. FLABELLIFO'LIA (Pursh. fl. amer. sept. 2. p. 390. t. 17.) stem procumbent, many-flowered; leaves dilated, kidney-shaped, with very spreading sharply-toothed lobes; sepals obovate; capsules terminated by hooked points. ♃. H. W. Native of Pennsylvania in a large sand spring on Pokono-mountain. Flowers middle sized. Allied on one side to *C. nàtans*, and on the other to *C. radìcans*.

Fan-leaved Marsh Marigold. Fl. Jul. Aug. Clt. 1818. Pl. procumbent.

14 C. ARCTICA (Br. Br. in app. to capt. Parry's voy. p. 265.) stem creeping; leaves kidney-shaped, repand-crenate, obtuse; capsules 12-16, imbricate, with recurved beaks; anthers linear, 20 or more. ♃. H. M. Native of Melville Island and along the coast of the Arctic Sea, from long. 107° to 150°. Flowers white.

Arctic Marsh Marigold. Pl. ¼ foot.

15 C. NA'TANS (Pall. itin. ed. min. 3. p. 248.) stem floating; leaves cordate, kidney-shaped, with the lobes rather approximate, obsoletely crenate behind, and toothed in front; sepals oval; capsules terminated by straight beaks. ♃. H. W. Native in the most eastern parts of Siberia, and about the town of Irkousk, floating in stagnant water; North America on the surface of deep spagnous bogs in the woody central districts, from Canada to lat. 60°.—Gmel. fl. sib. 4. p. 192. t. 82. Flowers white, with a tinge of red. C. Baikalénsis Demidow.

Floating Marsh Marigold. Fl. May, July. Clt. 1816. Pl. floating.

Cult. Being all natives of marshes or shallow water, they must be kept in a moist situation. C. natans requires to be planted in a pond or water cistern. All are easily increased by dividing the plants at the roots or by seeds.

XIX. TRO'LLIUS (a name given to this plant by Conrad Gesner. It is derived from *trol* or *trolen*, an old German word signifying something round, in allusion to the form of the flowers, whence also the English name *Globe Flower*.) Lin. gen. no. 700. D. C. syst. 1. p. 311. prod. 1. p. 45.

Lin. syst. *Polyándria Polygýnia.* Calyx of 5-10-15 deciduous. petal-like coloured sepals. Petals 5 to 20, small, linear, flattened, unilabiate. Stamens and ovaries numerous. Capsules numerous, sessile, columnar, many-seeded. Smooth, perennial, upright, slightly acrid herbs. Leaves deeply divided and cut. Referable to *Ranúnculus* and *Chrysánthemum* in habit, but in character to *Helléborus*.

1 T. EUROPÆ'US (Lin. spec. 782.) sepals about 15, converging into a globe; petals from 5-10, length of stamens; leaves divided into many deep, pinnatifid, cut lobes. ♃. H. Native almost throughout the whole of Europe in shady mountain, rather moist situations. Not rare in Westmoreland, Cumberland, Durham, Wales, and the Lowlands of Scotland. Smith, engl. bot. t. 28. Fl. dan. 133. Lois. herb. amat. t. 69. T. altíssimus, Wend. flor. 1818. p. 578. Flowers bright yellow, rather pale. The country people of Westmoreland, Scotland, and Sweden consider this as a sort of festival flower, going in parties to gather it for the decoration of their doors and apartments, as well as their persons.

Var. β, *húmilis* (D. C. prod. 1. p. 45.) plant smaller, only bearing one flower on each stem; flower hardly raised above the leaf. T. húmilis, Crantz. austr. 2. p. 124. exclusive of synon. of Buxb. T. mínimus, Wendl. l. c. p. 579. ♃. H. Native of Austria.

European Globe Flower. Fl. May, Ju. Britain. Pl. 1½ to 2 ft.

2 T. LEDEBOU'RII (Rchb. icon. t. 272. ex. Spreng. syst. app. p. 220.) sepals 5-spreading; petals 10-12, linear, longer than the stamens. ♃. H. Native of Siberia.

Ledebour's Globe Flower. Fl. May, June. Clt. 1829. Pl. 2 ft.

3 T. EMARGINA'TUS; sepals numerous, converging into a globe; petals linear, emarginate, almost twice as long as the stamens. ♃. H. Native of? common in gardens. Flower orange.

Emarginate-petalled Globe Flower. Fl. May, June. Clt.? Pl. 1½ to 2 feet.

4 T. NAPELLIFO'LIUS (Rœp. in flor. 1820. p. 105.) sepals 12, converging into a globe; petals from 5 to 10, length of stamens; styles recurved; leaves usually 7-parted. ♃. H. Native of? T. mèdius, Wend. in flor. 1818. p. 579. Stems and branches straight or stems spreading, with recurved branches. Flowers golden-yellow.

Napellus-leaved Globe Flower. Fl. May, Ju. Clt.? Pl. 2 ft.

5 T. ASIA'TICUS (Lin. spec. 782. exclusive of the synonyms of Buxb. and Tourn.) sepals 10, spreading; petals 10, longer than the stamens. ♃. H. Native of Siberia in woods and meadows. About Barnaoul, and perhaps about Petersburgh. Curt. bot. mag. t. 225. Very like *T. Europæ'us*, but the stems are usually 1-flowered. Flowers dark yellow.

Asiatic Globe Flower. Fl. May, Ju. Clt. 1759. Pl. 1 to 1½ ft.

6 T. CAUCA'SICUS (Stev. in mem. nat. mosc. 3. p. 265.) sepals 10, spreading; petals 10, shorter than the stamens. ♃. H. Native of the eastern parts of Caucasus on Alp. Schahdaghad. Like *N. Asiáticus*, but the petals are shorter than the stamens. Flowers yellow.

Caucasian Globe Flower. Fl. May, June. Clt. 1817. Pl. 1 ft.

7 T. PA'TULUS (Sal. trans. Lin. soc. 8. p. 303.) sepals 5, spreading; petals from 1 to 5, equal in length with the stamens. ♃. H. Flowers golden-yellow.

Var. α, *pedunculàtus* (D. C. prod. 1. p. 46.) flower elevated considerably above the upper leaf. ♃. H. Native of Siberia.

Var. β, *subinvolucràtus* (D. C. syst. 1. p. 313.) flower not elevated above the upper leaf. ♃. H. Native of Cappadocia on the highest mountains in places moistened by the melting of the snow. Helléborus ranunculìnus, Smith, icon. ined. 1. p. 37. t. 37.—Buxb. cent. 1. p. 15. t. 22. Plant hardly the length of a finger.

Spreading-flowered Globe Flower. Fl. May, June. Clt. 1800. Pl. α 1, β ¼ foot.

8 T. AMERICA'NUS (Muhl. and Gaissenh. in Donn. cat. hort. cant.) sepals from 5-10-15, spreading; petals from 5 to 20, retuse, shorter than the stamens. ♃. H. Native of Pennsylvania and New York, in shady wet places on the mountains, and in alpine rivulets on the eastern declivities of the Rocky Mountains. Lodd. bot. cab. t. 56. Sims, bot. mag. t. 1988. T. láxus, Sal. in Lin. trans. 8. p. 303. Gaissènia vérna, Raf. schm. in journ. bot. 1808. vol. 2. p. 168. Flowers pale yellow, smaller than those of the other species. Drummond affirms they are white in the plant he discovered on the Rocky Mountains.

American Globe Flower. Fl. May, Jul. Clt. 1805. Pl. ½ to ¾ ft.

9 T. PU'MILUS (D. Don. prod. fl. nep. p. 195.) sepals roundish-oval; petals 12, linear-lingulate, blunt, one-half shorter than the stamens; radical leaves 5-parted and jagged; stem 1-flowered. ♃. H. Native of Nipaul at Gasaingsthan. Stem almost naked, erect, smooth; segments of leaves pinnatifid, with the lobes lanceolate, entire, or acutely 3-toothed. Flowers large, orange-coloured.

Dwarf Globe Flower. Fl. Aug. Pl. ¼ to ½ foot.

Cult. Shewy border flowers. They will do well in any common garden soil, and are easily increased by dividing the plants at the root or by seeds. A shady moist situation suits them best.

XX. ERA'NTHUS (from ερα, *era*, the earth, and ανθος, *anthos*, a flower; because the bright yellow blossoms seem to lie upon the earth.) Sal. in Lin. soc. trans. 1807. vol. 8. p. 303. D. C. syst. 1. p. 314. prod. 1. p. 46.—Kóllea *Bir.*—Robértia *Merat.*

LIN. SYST. *Polyándria, Polygýnia.* Involucrum situated under the flower (f. 11. *a.*) cleft into many segments. Flower sessile (f. 11. *b.*) Calyx of from 5 to 8, coloured petal-like, oblong, deciduous sepals (f. 11. *b.*) Petals from 6 to 8, tubular, very short, with an unequally two-lipped mouth (f. 11. *e.*) Stamens from 20 to 30. Ovaries 5-6. Capsules on pedicels (f. 11. *c.*) Seeds globose, disposed in a single row.—Pretty little tuberous rooted plants, with divided leaves, valuable for the early period at which they flower.

The English name of the genus, *Winter Aconite*, is given to it from its time of flowering, and from the leaves resembling those of Aconite.

1 E. HYEMA'LIS (Sal. in Lin. soc. trans. 8. p. 303.) sepals from 6 to 8, oblong. ♃. H. Native of France, Switzerland, Italy, Austria, in humid shady places, at the bottoms of mountains, on hills, and in groves. Helléborus hyemàlis, Lin. spec. 783. Jacq. aust. t. 202. Curt. bot. mag. t. 3. Helléborus monánthus. Mœnch. Flowers yellow. (f. 11.)

FIG. 11.

Winter Aconite. Fl. Jan. Mar. Clt. 1596. Pl. ⅛ foot.

2 E. SIBI'RICUS (D. C. syst. 1. p. 315.) sepals 5, oval. ♃. H. Native of the eastern parts of Siberia, in moist places. Habit of *E. hyemàlis.* Seeds globose, rather compressed. Flowers yellow.

Siberian Winter Aconite. Fl. Mar. Ap. Clt. 1826. Pl. ⅛ ft.

Cult. Winter Aconite is a well-known flower. Being a low growing plant, it is well adapted for the front of flower borders, where it will thrive in common garden soil; and it is increased rapidly by offsets from the tubers.

XXI. HELLE'BORUS (from ελειν, *helein*, to cause death, and βορα, *bora*, food; poisonous qualities of plants). Adans. fam. 458. Lin. gen. no. 702. Lam. ill. 499. D. C. syst. 1. p. 315. prod. 1. p. 46.

LIN. SYST. *Polyándria, Polygýnia.* Calyx permanent of 5 roundish, obtuse, large sepals, which are generally green. Petals from 8-10, very short, tubular, narrowest in the lower part, nectariferous. Stamens from 30 to 60. Ovaries from 3-10; stigmas terminal, orbicular. Capsules coriaceous. Seeds oval, disposed in two rows, on a linear double notched receptacle. Fetid, stiff, coriaceous, nearly smooth herbs with divided leaves, of dangerously cathartic qualities, especially the roots.

§ 1. *Scapes leafless bearing* 1 *or* 2 *flowers.*

1 H. NI'GER (Lin. spec. 783.) radical leaves pedate, quite smooth; scape leafless, bearing 1 or 2 flowers and bracteas. ♃. H. Native of woody mountains in many parts of Europe, particularly in Provence, Piedmont, Austria, Styria, Greece, &c. Jacq. aust. t. 201. Curt. bot. mag. t. 8. Woodw. med. bot. 1. p. 50. t. 18. Flower large, with a white or rose-coloured corolla-like calyx. The fibres of the root only are used in medicine. They are of a deep brown on the outside, white or yellowish-white within, and of a nauseous and bitterish taste, exciting a sense of heat and numbness in the tongue, and of a nauseous smell. Neuman got from 2880 grains 380 alcoholic and 181 watery extract; and inversely 362 watery and 181 alcoholic. Its active constituent seems to be of a volatile nature, for it loses its virtues by keeping. In large doses

Black Hellebore is a drastic purgative; in smaller doses it is diuretic and emmenagogue. It has been used as a purgative in cases of mania, melancholy, coma, dropsy, worms, and psora. But its use requires very great caution, for its effects are very uncertain, and affected by many circumstances.—It may be exhibited in the form of an extract, although its activity be much dissipated by the preparation. An infusion and tincture certainly promise to be medicines of more uniform powers. Edin. new disp. p. 360.

Black Hellebore, or Christmas Rose. Fl. Jan. Mar. Clt. 1596. Pl. ½ to 1 foot.

§ 2. *Stem few-flowered, somewhat dichotomous, bearing an almost sessile, cleft, or cut floral leaf.*

2 H. orienta'lis (Gars. exot. t. 19. f. B. ex. Lam. dict. 3. p. 92.) radical leaves pedate, pubescent on the under surface; floral leaves almost sessile, palmate; peduncles usually bifid; sepals oval, coloured. ♃. H. Native of the Levant on mountains. Plentiful on mountains about Thessalonica and near Constantinople. Desf. choix. pl. cor. p. 58. t. 45. H. officinàlis. Sal. in Lin. trans. 8. p. 305. Smith fl. græc. t. 583. Calyx purplish, permanent; stamens and petals soon falling off. An intermediate species between *H. nìger* and *H. víridis*. This is the *black hellebore* of the ancients, formerly celebrated as a medicine in mania, epilepsy, and dropsy. It is called *Zopleme* by the Turks, and by the Greeks Σναρφη, and is still kept in the shops of the East. The medicinal qualities of the root are acrid and violently purgative.

Eastern Hellebore. Pl. 1 foot.

3 H. purpura'scens (Walds. et Kit. pl. hung. 2. p. 105. t. 101.) radical leaves pubescent on the under surface, palmate, with the segments cuneated at the base, and from 3-5-lobed at the apex; stem 2-flowered; floral leaves almost sessile; sepals roundish, coloured. ♃. H. Native of Hungary, Podolia, and Volhynia. Flowers purplish.

Var. β, Boccòni (D. C. prod. 1. p. 47.) stem longer than the leaves.—Boc. Mus. 2. p. 26. t. 11. f. R. ♃. H. Native of the Apennines of Etruria. Perhaps a distinct species.

Purplish Hellebore. Fl. Mar. April. Clt. 1817. Pl. 1 ft.

4 H. odo'rus (Walds. et Kit. ex Willd. enum. p. 592.) radical leaves palmate, pubescent on the under surface; segments oblong, undivided, quite entire at the base, but serrated at the apex; stem bifid; sepals ovate-oblong, acutish, green. ♃. H. Native of Hungary. Like *H. purpuráscens* and *H. víridis*, differing from the first in the flowers being green, not purplish.

Sweet-scented Hellebore. Fl. Mar. Apr. Clt. 1817. Pl. 1 ft.

5 H. vi'ridis (Lin. spec. 784.) radical leaves very smooth, cauline ones almost sessile, palmate; peduncles generally bifid; sepals roundish-ovate, green. ♃. H. Native in woods and thickets, on a chalky soil, particularly in Germany, Italy, France, and England in Oxfordshire, Cambridgeshire, Sussex, and other chalk counties, indubitably wild, although not common; near Hartfield, Middlesex, about Great Marlow and High Wickham, Bucks, and in the north-west part of Norfolk. Smith eng. bot. t. 200. Curt. lond. fasc. 6. t. 34. Jacq. aust. t. 106. Schkuhr. handb. no. 1536. t. 154. Blackw. herb. t. 509 and 510. Flowers green. Haller reckons up all the reputed virtues of *Hellebore* under this species; which indeed seems to be what German practitioners have substituted for the true plant of the ancients *H. orientàlis*.

We learn from the *Flora Londinensis*, that the roots of this plant are used in London for the true *Black Hellebore;* and probably their qualities are the same, for this species is even more nearly allied to the ancient Greek plant *H. orientàlis* than the *H. nìger*.

Green Hellebore. Fl. Ap. May. Britain. Pl. 1½ foot.

6 H. atroru'bens (Walds. et Kit. pl. hung. 3. p. 301. t. 271.) radical leaves very smooth, pedate, paler and shining underneath; cauline leaves almost sessile, palmate; stem somewhat angular, bifidly branched; sepals roundish, coloured. ♃. H. Native of Hungary in woods and bushy places, in great plenty at Korenicza. Flowers dark purple, particularly the edges of the sepals.

Dark-purple-flowered Hellebore. Fl. Feb. Apr. Clt. 1820. Pl. 1½ foot.

7 H. dumeto'rum (Walds. et Kit. ex Willd. enum. p. 592.) radical leaves very smooth, pedate; cauline leaves almost sessile, palmate; stem round, bifidly branched; sepals roundish, green. ♃. H. Native of Hungary. Flowers green.

Thicket Hellebore. Fl. Mar. Apr. Clt. 1817. Pl. 1 foot.

8 H. multi'fidus (Robert. de Visiani in fl. bot. zeit. 1829. p. 13.) stem tall, angular, bifid; branches few-flowered; radical leaves on long stalks, large, coriaceous, smooth, pedate-parted; lobes dichotomous, with an entire cuneated base; segments narrow, lanceolate, acuminated, sharply serrated and very veiny; floral leaves palmate-parted almost sessile; sepals broad, ovate. ♃. H. Native of Dalmatia on the mountains. Resembles *H. dumetòrum* but larger in size, and flowers more copious, but also greenish.

Multifid-leaved Hellebore. Fl. April, May. Pl. 1½-3 feet.

§ 3. *Stem leafy, many-flowered; peduncles furnished with bracteas.*

9 H. fœ'tidus (Lin. spec. 784.) stem many-flowered, leafy; leaves pedate, very smooth; segments oblong-linear. ♃. H. Native in thickets and waste ground on a chalky or gravelly soil, particularly in Portugal, Spain, Italy, Switzerland, France, Germany. England more common than H. viridis in chalky counties. Smith eng. bot. 613. Woodv. med. bot. t. 19. Bull. herb. t. 71. An evergreen plant with green flowers, which are tinged with purple on the edges. The whole herb is fœtid, acrid, violently cathartic, with a nauseous taste, especially when fresh. The leaves, when dried, are sometimes given as a domestic medicine to destroy worms; but they must be used sparingly, being so violent in their operation that many instances of their fatal effects are recorded. A dose of about 15 grains of the powder of the dried leaves is given to children, which proves gently emetic and purgative. The decoction of about a drachm of the fresh leaves being considered equal to 15 grains of the dry ones; it is usually repeated on two, and sometimes three successive mornings, and seldom fails to bring away worms, if there be any in the intestinal canal.

Fœtid Hellebore. Fl. Mar. Apr. Britain. Pl. 1 to 2 feet.

10 H. lívidus (Ait. hort. kew. ed. 1. vol. 2. p. 272.) stem many-flowered, leafy; leaves ternate, very smooth, glaucous on the under surface; segments ovate, lanceolate. ♃. H. Native of Corsica. Curt. bot. mag. t. 72. H. argutifòlius Viv. An evergreen plant with livid flowers, a little larger than those of *H. fœ'tidus*.

Var. β, integrílobus (D. C. prod. 1. p. 47.) segments of leaves quite entire. ♃. H. H. trifòlius. Mill. dict. no. 4. but not of Lin.

Livid-flowered Hellebore. Fl. Jan. May. Clt. 1710. Pl. 1 ft.

Cult. All the species of this genus will thrive well in any common garden soil, but they will grow best if planted under the shade of trees. They are easily increased by dividing the plants at the roots or by seeds.

XXII. CO'PTIS (from κοπτω, *kopto*, to cut, in reference to the numerous divisions of the leaves). Salisb. Lin. soc. trans. 8. p. 305. D. C. syst. 1. p. 321. prod. 1. p. 47.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 5 or 6 coloured, petal-like, deciduous sepals. Petals small, cucullate. Stamens

from 20 to 25. Capsules from 6 to 10, on long stalks, somewhat membranous, 4-6-seeded, pointed with the style, stellately disposed. Small, smooth, stiffish, perennial tufted herbs, with divided leaves and small white flowers.

1 C. trifòlia (Sal. in Lin. soc. trans. 8. p. 305.) leaves ternate, leaflets obovate, blunt, toothed, hardly 3-lobed; scape 1-flowered. ♃. H. Native of Iceland, Norway, Greenland, Siberia, and Kamtschatka in swamps in woods, North America in cedar swamps and mountain bogs, (but according to Dr. Richardson it is found in dry sandy and mossy places) from Canada to Virginia and Labrador. Helléborus trifòlius, Lin. amœn. 2. p. 355. t. 4. f. 18. Lodd. bot. cab. 173. Big. med. bot. 1. p. 60. t. 5. Anemòne Greenlándica, Oed. fl. dan. t. 566. A small plant with white flowers and yellow roots. It is called *Tissavoyanne-jaune* by the French, all over Canada. The leaves and stalks are used by the Indians for giving a fine yellow colour to several kinds of work which they make of skins. The French dye wool, &c. yellow with this plant. The root is used about Boston in North America as a remedy for *aphthoric* affections of the mouth, and also affords an agreeable stomachic bitter infusion.

Three-leaved Coptis. Fl. Ap. Jul. Clt. 1782. Pl. $\frac{1}{8}$ foot.

2 C. asplenifo'lia (Sal. in Lin. soc. trans. 8. p. 306.) leaves biternate; leaflets rather pinnatifid, very acutely serrated; scape 2-flowered. ♃. H. Native on the north-west coast of America and Japan. Hook fl. bor. amer. p. 23. t. 11. Thalíctrum Japónicum, Thunb. in Lin. soc. trans. 2. p. 337. Willd. spec. 2. p. 1303. Flowers white, larger than those of *C. trifòlia*.

Spleenwort-leaved Coptis. Pl. $\frac{1}{4}$ foot.

Cult. These pretty little plants will thrive best in a bed of peat earth, in a moist situation, or to be kept in pots and placed among other alpine plants. They may be increased by dividing the plants at the root or by seeds.

XXIII. ISOPY'RUM, (from ισος, *isos*, equal, πυρος, *pyros*, wheat. A name given by the Greeks to a plant resembling *Nigélla*, the seeds of which had the same taste). Lin. gen. 701. Gært. fruct. 1. p. 312. t. 65. f. 5. D. C. syst. 1. p. 323. prod. 1, p. 48.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 5, petal-like deciduous sepals (f. 12. *a.*). Petals 5, equal, tubular, 2-lipped (f. 12. *b.*), with the outer lip bifid. Stamens from 15 to 20. Ovaries from 2 to 20. Styles longitudinally stigmatose on the inside. Capsules sessile, 1-celled (f. 12. *c.*), oblong, compressed, membranous, many-seeded. Seeds minute, dotted (f. 12. *d.*). Small slender, smooth, erect herbs. Leaves ternate; leaflets stalked, 3-lobed, or cut, membranous. Flowers small, stalked, white.

1 I. thalictroi'des (Lin. spec. 783.) capsules from 1 to 3; sepals blunt; root creeping, fascicled, or grumose; leaf-stalks dilated at the base into membranous auricles. ♃. H. Native of the Pyrenees, Italy, Dauphiny, Carniolia, Silesia, Hungary, Greece, &c. in mountain woods. Jacq. aust. t. 105. I. aquilegioìdes. Lin. spec. 783. Helléborus thalictroìdes. Lamb. dict. 3. p. 98. I. thalictrifòlium. Sal. in Lin. soc. trans. 8. p. 306. Capsules ovate, somewhat compressed, awned with the elongated styles. Flowers small, white (f. 12.)

FIG. 12.

Meadow-rue-like Isopyrum. Fl. Mar. Apr. Clt. 1759. Pl. $\frac{3}{4}$ foot.

2 I. grandiflòrum (Fisch. in litt. D. C. prod. 1. p. 48.) capsules from 4-5; scape radical, 1-flowered; sepals oval, greatly exceeding the size of the leaflets. ♃. H. Native of the Altaian Mountains. Stamens one half shorter than the sepals. Flowers white.

Great-flowered Isopyrum. Fl. May, June. Pl. $\frac{1}{2}$ foot.

3 I. fumarioi'des (Lin. spec. 783.) capsules from 10 to 20; root slender, simple, perpendicular; leaf-stalks not dilated at the base. ⊙. H. Native of Siberia in groves, and among nitrous rubbish in Dauria. Schkuhr. handb. 2. no. 1531. t. 153. Helléborus fumarioìdes, Lam. dict. 3. p. 99. I. aquilegioìdes, Spreng. pug. 1. p. 40. no. 72. exclusive of the synonyms. Capsules compressed, pointed with the short styles. Flowers small, white.

Fumitory-like Isopyrum. Fl. Ju. Clt. 1741. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

4 I. adoxoi'des (D. C. syst. 1. p. 324.) capsules from 2 to 5; sepals bluntish; root tuberous; leaf-stalks not dilated at the base. ♃. H. Native of Japan near Nagasaki. I. capnoìdes, Fisch. in litt. Capsules from 3 to 4 oblong, many-seeded. Flowers small, white.

Adoxa-like Isopyrum. Pl. $\frac{1}{4}$ foot.

Cult. These pretty little plants will thrive well in any common garden soil. The perennial species may be either increased by dividing the plants at the roots or by seeds. The annual species only require to be sown where they are intended to remain.

XXIV. ENE'MION (apparently a corruption of *Anemòne.*) Raf. journ. phys. 1820. g. 1. p. 70. D. C. prod. 1. p. 48.

Lin. syst. *Polyándria, Tetragýnia.* Calyx of 5 petal-like deciduous sepals. Stamens from 20 to 30, with club-shaped filaments, and roundish 2-lobed anthers. Pistils from 2 to 6, but generally 4, with the style about the length of the ovaries; capsules from 2 to 6, ovate, stellately disposed, compressed, pointed with the styles, 2-seeded; seeds oval. Perhaps sufficiently distinct from *Isopỳrum.*

1 En. biterna'tum (Rafin. l. c.) ♃. H. Native of Kentucky at Lexington. Flowers the size of those of *Anemòne quinquefòlia*, and probably white.

Biternate-leaved Enemion. Pl. $\frac{1}{2}$ foot.

Cult. This plant will require to be planted in a border of peat soil, or in pots in the same kind of soil. It may be either increased by dividing the plants at the roots or by seeds.

XXV. GARIDE'LLA (in honour of Pierre Garidel, M.D. physician at Aix in Provence, author of Histoire des Plantes qui naissent en Provence, 1719, with many figures). Tourn. inst. 655. t. 43. Lin. gen. 541. Gært. fruct. 2. p. 174. t. 118. D. C. syst. 1. p. 325. prod. 1. p. 48.

Lin. syst. *Polyándria, Decándria, Trigýnia.* Calyx of 5, deciduous, hardly petal-like sepals. Petals 5, 2-lipped, bifid. Stamens from 10 to 40. Ovaries 3, connected; styles very short. Capsules from 2 to 3, many-seeded, connected together into a 2 or 3-celled capsule, hardly 2 or 3-horned. Small, slender, erect, inconspicuous herbs. Leaves multifid, with linear segments. Flowers small, whitish, solitary on the tops of the peduncles. Differing from *Nigélla* in having only 3 capsules terminated by very short styles, not 5-10 capsules with elongated styles.

1 G. nigella'strum (Lin. spec. 753.) petals sessile, spreading; stamens from 10 to 12. ⊙. H. Native in sunny places among olives and vines in Provence, &c. Leaves finely divided like those of *Delphìnium consólida.* Calyx purplish; corolla white. Lam. ill. t. 379. f. 1. Sims, bot. 1266. Bois. fl. europ. 6. t. 320.

Nigella-like Garidella. Fl. Ju. July. Clt. 1736. Pl. 1½ foot.

2 G. unguicula'ris (Lam. ill. t. 379. f. 2.) petals erect, converging, with long claws; stamens 40. ⊙. H. Native about Aleppo. Stem angular branched. Leaves stalked, pinnately jagged, with acute spreading segments. Flowers greenish brown;

bracteas solitary tricuspidate. Ovaries 2 or 3 connected, ovate, scabrous.

Clawed-petalled Garidella. Fl. June, July. Pl. 1 foot.

Cult. Inconspicuous annual plants; only require to be sown in the open border.

XXVI. NIGE'LLA (from *niger*, black, because of the colour of the seeds, which is the part of the plant known in cookery.) Tourn. inst. 258. t. 134. Lin. gen. no. 685. Gært. fruct. 2. p. 174. t. 118. D. C. syst. 1. p. 326. prod. 1. p. 48.

LIN. SYST. *Polyándria, Pentagýnia.* Calyx of 5 coloured petal-like spreading deciduous sepals. Petals small, from 5 to 10, 2-lipped, with a hollow nectariferous claw. Stamens numerous. Ovaries from 5 to 10, more or less joined together at the base, each terminated by the long simple style. Capsules more or less connected together, terminated by the elongated styles, opening on the inside, many-seeded. Embryo linear.—Erect, annual, smoothish herbs. Root slender, perpendicular, fibrous at top. Leaves finely cut, like *Fennel.* Flowers solitary, on the top of the stems or branches. Capsules usually ornamented with callose dots or glands. The seeds have an acrid aromatic taste, especially those of the species in Section II., and are therefore used as a popular condiment.

The genus is called *Fennel-Flower* in English, because the leaves resemble those of *Fennel.*

SECT. I. NIGELLA'STRUM (from *Nigella* and *astrum*, an affixed signification, like) Mœnch. meth. 313 and 311. D. C. syst. 1. p. 326. prod. 1. p. 48. Sepals yellow. Stamens disposed in one row. Capsules compressed, connected at their base. Seeds flat, orbicular.

1 N. CORNICULA'TA (D. C. syst. 1. p. 326.) capsules from 3 to 5, smooth, connected at their base, diverging and reflexed at the top; styles arched outwardly. ⊙. H. Native —? Flowers yellow.

Horned-capsuled Fennel Flower. Fl. June, Sep. Clt. 1822. Pl. ¾ foot.

2 N. CILIA'RIS (D. C. syst. 1. p. 327.) capsules from 8 to 10, hispid, connected at their base, stellately spreading; styles straight. ⊙. H. Native of the Levant near Bairout. Deless. icon. sel. 1. t. 45. Flowers yellow.

Ciliary-fruited Fennel Flower. Fl. Ju. Sep. Clt.? Pl. 1 foot.

3 N. ORIENTA'LIS (Lin. spec. 753.) capsules from 5 to 10, smooth, connected together from the base almost to the middle, hardly diverging; styles straight. ⊙. H. Native about Aleppo in corn fields, and in fields in Eastern Caucasus and Middle Iberia. Sims, bot. mag. t. 1264. Gært. fruct. 2. p. 174. t. 118. f. 1. Flowers yellow. Seeds girded by a membranous margin.

Eastern Fennel Flower. Fl. June, Sep. Clt. 1699. Pl. 1½ foot.

SECT. II. NIGELLA'RIA (altered from *Nigella*, see) D. C. syst. 1. p. 328. prod. 1. p. 49. Sepals spreading, bluish. Stamens disposed in many rows, collected into 8 or 10 bundles. Seeds ovate, angular.

4 N. HISPA'NICA (Lin. spec. 753.) anthers pointed; styles from 8 to 10, erect: capsules smooth, with one nerve on the back, connected beyond the middle into an obconical fruit; stem erect, smooth, with erect branches. ⊙. H. Native of the South of Spain, and Barbary, in corn fields. Desf. fl. atl. p. 430. t. 212. Sims, bot. mag. t. 1265. Flowers usually blue, but are sometimes white or cream-coloured.

Spanish Fennel Flower. Fl. Ju. Sep. Clt. 1629. Pl. 1 to 2 ft.

5 N. FŒNICULA'CEA (D. C. syst. 1. p. 328.) anthers pointed; styles from 5 to 6, erect; capsules smooth, 3-nerved on the back, connected beyond the middle into an obconical fruit; stem erect, smooth, with somewhat divaricating branches. ⊙. H. Native of Tauria in corn fields.—Moris. hist. 3. p. 516. sect. 12. t. 18. f. 6.? Seeds triquetrous. Flowers from white to blue.

Fennel-like Fennel Flower. Fl. June, Sep. Clt.? Pl. 1 foot.

6 N. DIVARICA'TA (Beaupre in D. C. syst. 1. p. 329.) anthers pointed; styles 5, erectish; capsules smooth, connected beyond the middle into an obconical fruit; stem smooth, with very divaricating branches. ⊙. H. Native of Tauria and Egypt. Deless. icon. sel. 1. t. 46. Flowers blueish.

Divaricate-branched Fennel Flower. Fl. Ju. Sep. Clt.? Pl. 1½ ft.

7 N. ARVE'NSIS (Lin. spec. 753.) anthers pointed; styles from 5 to 7, circinnately revolute outwardly; capsules smooth, connected beyond the middle into an obconical fruit, which is narrowest at the base; stem smooth, with rather diverging branches. ⊙. H. Native of middle and south Europe in corn fields, also in the north of Africa. Bull. herb. t. 126. Lam. ill. t. 888. f. 1. Smith, fl. græc. t. 512. Schkuhr. handb. 2. p. 92. t. 146. Flowers white or blue, single or double. The seeds are sometimes used instead of those of *N. satìva;* but they are not so aromatic, nor have they the same pleasant smell.

Corn-field Fennel Flower. Fl. Ju. Sep. Clt. 1683. Pl. 1 to 1½ ft.

8 N. ARISTA'TA (Sibth. and Smith, fl. græc. t. 510. prod. 1. p. 373.) anthers pointed; capsules connected into a turbinate fruit; stem smooth; flowers surrounded by a leafy involucrum. ⊙. H. Native near Athens. Habit almost of *N. Damascèna.* Flowers blue.

Awned Fennel Flower. Fl. June, Sep. Pl. 1½ foot.

9 N. SATÌVA (Lin. spec. 753.) anthers blunt; capsules muricated, connected almost to the top into an ovate fruit; stem erect, rather hairy; flowers naked. ⊙. H. Native of Montpelier and Barbary in corn fields. Smith, fl. græc. t. 511. Flowers blueish.

Var. β, *Crética* (D. C. syst. 1. p. 331.) styles longer than the flowers.—Clus. hist. 2. p. 108.—Moris. hist. 3. p. 515. sect. 12. t. 18. f. 2. N. segetatis, Bieb. fl. taur. 2. p. 16. Flowers blue.

Var. γ, *citrìna* (D. C. l. c.) seeds yellow; flowers double.—Moris. hist. 3. p. 516. sect. 12. t. 18. f. 5.

Var. δ, *Indica* (Roxb. mss. ex. Fleming in jour. bot. 1814. 4. p. 203. jour. pharm. 1814. p. 253.) stem and leaves smooth. Native of the East Indies.

Formerly the seeds of *N. sativa* were much in use as a carminative, stimulant, and errhine, but this medicine is become deservedly obsolete. They are still used in some parts of Germany and Asia in cookery instead of spice, being a pleasant aromatic. They are said to be extensively used in the adulteration of pepper as well as those of *N. arvénsis.* The leaves are also sometimes used.

Cultivated Fennel Flower. Fl. Ju. Sep. Clt. 1548. Pl. 1½ ft.

SECT. III. EROBA'TOS (from ερος, *eros*, love, and βατος, *batos ?*) D. C. prod. 1. p. 49. Sepals white or blue. Stamens numerous, disposed in many rows. Capsules 5, connected together into a 10-celled fruit, with the 5 inner cells seminiferous, and the 5 outer ones empty. Involucrum multifid, leafy, situated under the flower.

10 N. DAMASCE'NA (Lin. spec. 753.) anthers blunt; carpels 5, 2-celled, connected even to the top into an ovate-globose capsule; flowers surrounded by a leafy involucrum; sepals spreading. ⊙. H. Native of the south of Europe, from Portugal to Tauria, in cultivated fields. Curt. bot. mag. t. 22. Smith, fl. græc. t. 509. Schkuhr. hand. t. 146. Gært. fruct. 2. p. 174. t. 118. f. 1. Flowers white or blue, single or double.

Damascus Fennel Flower. Fl. Ju. Sep. Clt. 1570. Pl. 1 to 2 ft.

11 N. COARCTA'TA (Gmel. fl. bad. 2. p. 502.) anthers blunt;

flowers involucrate; sepals erect, connivent. ♃. H. Native — ? Flowers small, white.

Strained Fennel Flower. Fl. Ju. Sep. Clt. 1793. Pl. ½ foot.

Cult. Plants of easy culture, only requiring to be sown in the open border. They are curious and ornamental.

XXVII. AQUILE'GIA (*aquila*, an eagle, because of the form of each petal, separated with two sepals attached to it. *Columbine*, its English name, from *columbus*, a pigeon, from the same cause.) Tourn. inst. t. 242. Lin. gen. no. 275.

LIN. SYST. *Polyándria, Pentagýnia.* Calyx of 5-coloured petal-like deciduous sepals. Petals 5, gaping above, 2-lipped, outer lip large, flat; inner lip very small, each petal drawn out into a hollow spur, which is callous at the apex, and protruding between the sepals. Capsules 5, erect, many-seeded, pointed with the styles.—Erect perennial herbs, with fibrous roots. Radical leaves on long stalks twice or thrice ternate, with trifid-toothed, usually blunt segments; upper ones divided into linear lobes. Flowers white, blue, rose, or purple rarely dirty yellow. Qualities hardly acrid, bitterish, somewhat astringent and tonic. Seeds acrid.

1 A. VULGA'RIS (Lin. spec. 752.) spurs incurved; capsules villous; stem leafy, many-flowered, and is as well as the leaves smoothish; styles not exceeding the stamens in length. ♃. H. Native of most parts of Europe, as well as of Japan; in meadows, pastures, and thickets. Smith, engl. bot. t. 295. Fl. dan. t. 695. Flowers either single or double, blue, white, rose-coloured, purple or variegated, or spotted with the same colours.

Var. β, alpìna (Huds. angl. 235.) stem usually 1-flowered; spurs less curved than in var. *α*. ♃. H. Native of England at Matlock, Bath.

Var. * *corniculàta* (D. C. syst. 1. p. 334.) flower double; petals spurred; spur drawn out downwards. ♃. H.—Clus. hist. 2. p. 204. f. 1.

* * *invérsa* (D. C. syst. 1. p. 334.) flower double; petals horned: horn inverted. ♃. H.—Clus. hist. 2. p. 204. f. 2.

* ** *stellàta* (D. C. syst. 1. p. 335.) flower double; petals flat, spurless, coloured. ♃. H.—Clus. hist. 2. p. 205. f. 1.

* *** *degèner* (D. C. syst. 1. p. 335.) flower double; petals and sepals flat, spurless, green. ♃. H.—Clus. hist. 2. p. 205. f. 2.—Barrl. icon. t. 608.

The whole plant has been recommended to be used medicinally, but it belongs to a suspicious natural order, and Linnæus affirms that children have lost their lives by an over-dose of it. The virtues ascribed to a tincture of the flowers as an antiphlogistic, and for strengthening the gums and deterging scorbutic ulcers in the mouth, appear to be better founded; the tincture being made with an addition of the vitriolic acid, and differing but little from our officinal tincture of roses.

Common Columbine. Fl. May, July. Britain. Pl. 1 to 2 ft.

2 A. CÆRU'LEA (Torrey. ann. lyc. nat. hist. new york, vol. 2. p. 161.) spurs straight, almost twice the length of the limb of the petals; styles and stamens shorter than the corolla; stipulas acute; segments of leaves deeply lobed. ♃. H. Native of North America on the Rocky Mountains. Flowers blue.

Blue Columbine. Pl. 1 foot?

3 A. BREVISTY'LA (Hook. fl. bor. amer. p. 24.) plant rather pubescent; spurs incurved, shorter than the limb; styles short, inclosed; stamens rather shorter than the corolla. ♃. H. Native of North America in the western parts of Canada, and as far north as Bear Lake. A. vulgàris? Richards. in Frankl. 1st. journ. ed. 2. app. p. 21. Stem and leaves as in *A. vulgàris*, but the flowers are one-half smaller, blue.

Short-styled Columbine. Fl. May, July. Pl. 1 to 2 feet.

4 A. VISCÒSA (Gouan. fl. monsp. p. 267. illustr. 33. t. 19.) spurs incurved; capsules villous; stem bearing one, two, or three flowers, almost naked, and is as well as the leaves clothed with clammy pubescence; styles not exceeding the stamens in length. ♃. H. Native of Spain, Portugal, south of France, Piedmont, Naples, &c. in rugged mountainous places, exposed to the sun.—Lachen. act. helv. 8. p. 146. t. 5. Scarcely distinct from *A. vulgàris*, unless by being clothed with clammy pubescence, and the flowers being larger, purple.

Clammy Columbine. Fl. May, June. Clt. 1752. Pl. 1½ foot.

5 A. GLANDULÒSA (Fisch. ined. Link. enum. 2. p. 84.) spur incurved; one-half shorter than the limb; upper part of the herb as well as capsules clothed with glandular hairs. ♃. H. Native of the Altaian mountains. A. speciòsa, D. C. syst. 1. p. 336.

Var. α, discolor (D. C. prod. 1. p. 50.) petals white; sepals blue.

Var. β, cóncolor (D. C. prod. 1. p. 50.) petals, as well as sepals, blueish-violet.

Glandular Columbine. Fl. May, July. Clt. 1822. Pl. 2 feet.

6 A. SIBÍRICA (Lam. dict. 1. p. 150.) spur incurved; capsules very smooth; stem 1 or 2-flowered, almost naked, smooth: sepals very blunt. ♃. H. Native of Dauria in woods. A. vulgàris Dahùrica, Willd. spec. 2. p. 1246.—Deless. icon. sel. 1. t. 47. Flowers with blue sepals and white petals.

Siberian Columbine. Fl. May, July. Clt. 1806. Pl. 1 foot.

7 A. ALPÌNA (Lin. spec. 752.) spurs straight, but somewhat incurved at the apex, one-half shorter than the petals; stem leafy, 2 or 3-flowered; segments of leaves deeply divided into linear lobes. ♃. H. Native on the Alps of Piedmont and Switzerland in shady humid places. Deless. icon. sel. 1. t. 48. Sweet. brit. fl. gard. t. 218. A. alpìna, var. *α*, D. C. fl. fr. 4. p. 912. Flowers large, blue. The most shewy of all the species.

Var. β, grandiflòra (D. C. syst. 1. p. 337.) sepals oval; spur length of limb. ♃. H. Native of Siberia on the Altaian Alps. A. grandiflòra, Patr. ined. Perhaps A. glandulòsa cóncolor?

Alpine Columbine. Fl. May, July. Clt. 1731. Pl. 1 foot.

8 A. PYRENA'ICA (D. C. fl. fr. 4. p. 912. syst. 1. p. 337.) spurs straight, hardly shorter than the limb; stem almost naked, 1-flowered; segments of leaves deeply divided into linear lobes. ♃. H. Native of the Pyrenees and Apennines on the higher pastures and on rocks. A. viscòsa, Trev. delph. p. 23. t. 2. A. alpìna, var. *β*. D. C. fl. fr. 4. p. 912. Flowers middle sized, blue. Like *A. alpìna*, but smaller in all its parts.

Pyrenean Columbine. Fl. May, July. Clt. 1818. Pl. 1 foot.

9 A. CANADE'NSIS (Lin. spec. 752.) spurs straight, longer than the limb; styles and stamens protruding; sepals acutish, a little longer than the petals; segments of leaves 3-parted, bluntish, and deeply toothed at the apex. ♃. H. Native of North America, from Canada to Carolina, in the crevices of rocks. Abundant at the mouth of the Columbia river, especially about Fort Vancouver. Curt. bot. mag. 246. Schkuhr. handb. no. 1434. t. 146. Lois. herb. amat. t. 305.—Mill. icon. t. 47. Flowers scarlet, mixed with yellow.

Var. β, hýbrida (Hook. fl. bor. amer. p. 24.) spurs a little incurved at the apex; stamens shorter than in var. *α*; flowers for the most part purple. ♃. H. Native of North America among the Rocky Mountains.

Canadian Columbine. Fl. April, May. Clt. 1640. Pl. 1 to 2 ft.

10 A. FORMÒSA (Fisch. in litt. with a figure D. C. prod. 1. p. 50.) spurs straight, much longer than the petals and stamens, which are very short; styles not protruding; sepals lanceolate, much longer than the petals. ♃. H. Native of Kamtschatka. Like *A. Canadénsis* in habit, as well as in colour and form of the flowers.

Beautiful Columbine. Fl. April, June. Clt. 1822. Pl. 1 to 1½ ft.

11 A. VIRIDIFLÒRA (Pall. act. petrop. 1779. p. 262. t. 11.) spurs straight, longer than the petals; stamens equal in length with the petals; styles protruding; sepals oval-oblong, shorter

than the petals. ♃. H. Native of Siberia. Jacq. icon. rar. 1. t. 102. Murr. comm. Gœt. 1780. p. 8. t. 2. A. flàva, Lam. dict. 1. p. 149. Stem almost naked, 2-3-flowered. Flower about the size of those of *A. Canadénsis*, of a yellowish-green colour.

Green-flowered Columbine. Fl. May, Jul. Clt. 1780. Pl. 1½ ft.

12 A. atropurpu'rea (Willd. enum. 577.) spurs straight, equal in length with the petals; styles and stamens about the length of the sepals; sepals length of petals. ♃. H. Native of Siberia. Ker. bot. reg. t. 922. A. viridiflòra β. Willd. spec. 2. p. 1247. Flowers dark-purple or blueish-violet.

Var. α, brevistyla (Willd. enum. p. 577.) styles not so long as the stamens. ♃. H.

Var. β, Dahùrica (Patr. in D. C. syst. 1. p. 338.) styles protruding beyond the other parts of the flower; leaves smooth. ♃. H. Native of Dauria on hills and mountains. Deless. icon. sel. 1. t. 49.

Var. γ, Fischeriàna (D. C. prod. 1. p. 51.) styles protruding beyond the other parts of the flower; leaves villous on the under surface. ♃. H. A. atropurpùrea, Fisch. ined.

Dark-purple-flowered Columbine. Fl. May, Jul. Clt. ? Pl. 1½ ft.

13 A. hy'brida (Sims, bot. mag. t. 1221.) spurs straight, hardly incurved at the apex, longer than the petals, which are very blunt; styles hardly exceeding the length of the stamens and petals; sepals acute, length of petals; stem and leaves clothed with very delicate pubescence. ♃. H. Native of Siberia. A. Sibírica, Donn, cant. ? A. speciòsa, var. α, D. C. syst. 1. p. 336. Stem many-flowered. Flowers twice the size of those of *A. Canadénsis*, with dark purple sepals, yellowish petals and purple spurs, which are green at the tips.

Hybrid Columbine. Fl. May, Ju. Clt. 1827. Pl. 1 to 2 feet.

14 A. parviflòra (Ledeb. act. petrop. 1815. 5. p. 514. no. 32.) spurs straight, short, almost equal in length with the blunt petals; stamens recurved, length of the acute sepals; stem 2 or 3-flowered, and is as well as the leaves smooth. ♃. H. Native of Siberia in woods at the river Lena.—Gmel. sib. 4. p. 186. t. 47. Stem almost naked. Flowers blue, smaller than those of *A. Canadénsis*. Ovaries pubescent.

Small-flowered Columbine. Fl. May, July. Clt. 1819. Pl. 1 ft.

15 A. anemonoìdes (Willd. gess. naturf. berl. 1811. t. 9. f. 6.) spurs straight, very short, equal in length with the petals; petals thrice as short as calyx; peduncles radical, 1-flowered, almost naked. ♃. H. Native of Siberia on the Altaian mountains. Perhaps a variety of *A. glandulòsa*, according to Fischer. Flower purple ?

Anemone-like Columbine. Fl. My. Ju. Clt. 1827. Pl. ¼ to ½ ft.

Cult. All the species of Columbine are very ornamental, and deserve to be cultivated in every garden. They will thrive in any common garden soil, and are easily increased by dividing the plants at the roots or by seeds, which generally ripen in abundance.

XXVIII. DELPHI'NIUM (from δελφιν, *delphin*, a dolphin, on account of the resemblance between the nectary of the plant, and the imaginary figures of the dolphin.) Tourn. inst. 426. t. 241. Lin. gen. no. 681. Gært. fruct. 1. p. 310. t. 65. Lam. illust. t. 432. D. C. syst. 1. p. 340. prod. 1. p. 51.)

Lin. syst. *Polyándria, Tri-Pentagýnia*. Calyx deciduous, petal-like, irregular, with the upper sepal drawn out below into a spur. Petals 4; 2 upper ones drawn out at the base into appendages within the spur.—Erect branching herbs. Leaves stalked, cauline ones palmately-multifid. Flowers racemose, usually blue or violet, seldom white.

The genus is called *Pied d' Alouette* in French, because of the long spur resembling the talon of a lark, whence also the English name *Larkspur*.

Sect. I. Conso'lida (from *consolido*, to reunite, because the *D. consólida* being formerly reputed as a most powerful vulnerary. The name is applied to this section, because all the plants it contains resemble *D. consólida*.) D. C. syst. 1. p. 341. prod. 1. p. 51. Ovary one. Petals 4, connected together. Spur containing only the appendage of one of the petals. Annual herbs.

1 D. axillariflòrum (D. C. syst. 1. p. 341.) stem almost simple, smoothish, with the branches hardly diverging; flowers axillary, almost sessile; bracteas multifid, situated under the flower. ⊙. H. Native of the Levant. Deless. icon. sel. 1. t. 50. Sepals oblong, acute, pale-blue. Leaves ternate or biternate, with multifid segments.

Axillary-flowered Larkspur. Fl. June, July. Pl. 1 foot.

2 D. Oliveria'num (D. C. syst. 1. p. 341.) stem smooth, a little branched, with the branches hardly diverging; flowers few, loosely racemose; pedicels length of bracteas; capsules smooth. ⊙. H. Native between Bagdad and Vermancha in cultivated fields. Flowers blueish-purple, twice the size of those of *D. Ajàcis*.

Oliver's Larkspur. Fl. June, July. Clt. 1825. Pl. 1½ foot.

3 D. Aja'cis (Lin. spec. 748.) stem erect, smoothish, almost simple, with the branches hardly diverging; flowers in long dense racemes; pedicels length of bracteas; capsules pubescent. ⊙. H. Native of Tauria.—Clus. hist. 2. p. 206. f. 1. Flowers either white, blue, rose, flesh-coloured, or purple, or variegated, with the same colours, double or single. Called *Ajàcis*, because some traces may be perceived in the flower of what may be likened to the letters A J A.

Ajax's or Rocket Larkspur. Fl. Ju. Jul. Clt. 1573. Pl. 1½ ft.

4 D. conso'lida (Lin. spec. 748.) stem erect, smoothish, with divaricating branches; flowers few, loosely racemose; pedicels longer than the bracteas; capsules smooth. Native in corn-fields throughout Europe, also in Pennsylvania and Virginia. Smith, engl. bot. 1839. Fl. dan. t. 683. Lam. illust. t. 482. f. 1. D. segetum, Lam. Flowers either single or double, white, blue, red or purple, or variegated with these colours. The name is derived from *consólido*, to unite; it being formerly reputed as a most powerful vulnerary. It is said to be ingredient in those French cosmetics, which are so destructive of the surface of the skin. It is called *Pied d' Alouette* in France, and *Rittersporn* in Germany. It is a common garden annual, as well as *D. Ajàcis*. The seeds are acrid and poisonous.

Uniting or Branched Larkspur. Fl. June, July. England. Pl. 1 to 3 feet.

5 D. pauciflòrum (D. Don. prod. fl. nep. p. 196.) stem erect, branched, upper part villous, the rest smooth, as well as leaves; flowers solitary, remote, on long peduncles; capsules smooth? ⊙. H. Native of Nipaul at Narainhetty. D. consólida, Hamilt. mss. Flowers violet. Spur shorter than the flower.

Few-flowered Larkspur. Fl. June, July. Pl. 1 foot.

6 D. pube'scens (D. C. fl. fr. 5. p. 641. syst. 1. p. 343.) stem straight, pubescent, somewhat branched at the top; flowers in loose racemes; pedicels longer than the bracteas; leaves and capsules pubescent. ⊙. H. Native of the south of France in corn-fields. D. consólida, Sibth and Smith, fl. græc. t. 504. D. ambíguum, Lois. not. p. 85. but not of Lin. Flowers blue.

Pubescent Larkspur. Fl. Ju. July. Clt. 1816. Pl. 2 or 3 feet.

7 D. rígidum (D. C. syst. 1. p. 144.) stem erect, much branched, stiff; leaves and capsules velvety-canescent; pedicels 3-times longer than the bracteas. ⊙. H. Native of the Levant. Deless. icon. sel. 1. t. 52. Flowers pale-purple, smaller than those of *D. consólida*.

Stiff Larkspur. Fl. June, July. Pl. 1 foot.

8 D. pusíllum (Labill. syr. dec. 4. p. 5. t. 2. f. 1.) stem erect, very slender, 2-4-flowered, and is as well as the leaves pubescent; pedicels a little longer than the linear bracteas. ⊙. H.

Native near Damascus at the bottom of the mountain called Dgebel-cher, D. pygmæ'um, Poir. dict. 2. p. 458. Leaves pedately 3 or 5-cleft, with oblong or linear lobes. Flowers very few, small, of a pale-violet colour, and pubescent on the outside, with a straight awl-shaped spur.

Small Larkspur. Fl. May, June. Pl. 2 inches.

9 D. TENUÍSSIMUM (Sibth. and Smith, fl. græc. t. 505.) stem erect, slender, a little branched, and rather pubescent at the apex; pedicels much longer than the awl-shaped bracteas. ⊙. H. Native of Greece about Athens. Flowers small, blueish-violet; capsules smooth.

Very slender Larkspur. Fl. June, July. Pl. ½ foot.

10 D. ACONÌTI (Lin. mant. p. 77.) stem erect, much branched, rather pubescent; leaves pedately-multifid; pedicels very long; spur horizontal, incurved and cleft at the top. ⊙. H. Native of the Dardanelles and about Damascus. Vahl. symb. 1. p. 40. t. 13. Aconìtum monógynum, Forsk. cat. pl. const. p. 27. no. 248. D. incànum, Clark. in Spreng. new. entd. 3. p. 162.? Flowers livid, variegated with purple and green on the inside.

Aconite-like Larkspur. Fl. June, July. Clt. 1801. Pl. 1 foot.

11 D. EXSE'RTUM (D. C. syst. 1. p. 345.) stem erect, branched, smooth; leaves ternate; segments stalked, palmately-multifid; pedicels hardly longer than the bracteas; spur straight; stamens protruding. ⊙. H. Native of the Levant. Flowers blue, very small for the size of the plant. Deless. icon. sel. t. 53.

Exserted-stamened Larkspur. Fl. June, July. Pl. ¾ foot.

12 D. FLA'VUM (D. C. syst. 1. p. 346.) stem erect, branched, upper part pubescent; leaves palmately many-parted; pedicels distant, length of flowers; spur straight, spreading; stamens protruding a little; capsules cylindrical, pubescent. ⊙. H. Native of the Levant. Deless. icon. sel. t. 54. Flowers like those of *D. aconìti*, but yellowish.

Var. a, velutìnum (D. C. syst. 1. p. 346.) the whole plant is pubescent; bracteoles in the middle of pedicel.

Var. β, glaúcum (D. C. syst. 1. p. 346.) plant smooth at the base, but pubescent at the top; bracteoles at the base of the pedicels.

Yellow-flowered Larkspur. Fl. June, July. Pl. ¾ foot.

SECT. II. DELPHINE'LLUM (a dim. of *Delphinium*, which see). D. C. syst. 1. p. 346. prod. 1. p. 52. Ovaries 3. Petals free, smooth. Spur usually containing the appendage of one petal only. Annual plants.

13 D. AMBI'GUUM (Lin. spec. 749.) stem erect, rather velvety; leaves 3 or 5-parted, with pinnatifid partitions; racemes loose; spur straight, pubescent, shorter than the calyx; ovaries villous. ⊙. H. Native of Mauritania. Flowers like those of *D. consólida*, blue, pubescent on the outside.

Ambiguous Larkspur. Fl. Jul. Aug. Clt. 1759. Pl. 2 ft.

14 D. CARDIOPE'TALUM (D. C. syst. 1. p. 347.) stem erect, a little branched; leaves smooth, ternate, with multifid segments and linear lobes, those of the branches as well as the lower bracteas are multifid; racemes crowded; petals stipitate, orbicular, and cordate at the base. ⊙. H. Native of the Pyrenees in valleys. D. peregrìnum, Lam.—Moris. hist. 3. p. 466. sect. 12. t. 4. f. 3. Flowers dark blueish-violet.

Heart-petalled Larkspur. Fl. Ju. Jul. Clt. 1818. Pl. 1 ft.

15 D. GRA'CILE (D. C. syst. 1. p. 347.) stem erect, a little branched; leaves smoothish, stiff, ternate, many-cleft, with linear lobes; those of the branches as well as the bracteas are linear; racemes lax; petals stipitate, ovate, cordate at the base. ⊙. H. Flowers pale blue, variegated with white.

Var. a, glàbrum (D. C. l. c.) stem and leaves smooth. ⊙. H. Native of Andalusia in Spain.

Var. β, velutìnum (D. C. syst. 1. p. 348.) stem and leaves velvety-pubescent. ⊙. H. Native of Spain about Aranjuez.

Weak Larkspur. Fl. June, July. Pl. 1 foot.

16 D. JU'NCEUM (D. C. fl. fr. 5. p. 641. syst. 1. p. 348.) stem erect, much branched; leaves smooth, stiff, lower ones multifid, those of the branches as well as the bracteas are linear and entire; racemes lax; petals stipitate, elliptical. ⊙. H. Native of Italy near Nice, Sicily, Tunis near Sfax, and all the islands in the Archipelago; in rugged sunny places and fields. D. peregrìnum. Lin. spec. 749. All. pedem. no. 1508. t. 25. f. 3. Smith græc. t. 506. Flowers blueish-violet; petals variegated with white.

Var. β, subvelutìnum (D. C. syst. 1. p. 348.) stem and leaves velvety-pubescent. ⊙. H. Native on Mount Lebanon.

Rush Larkspur. Fl. June, Jul. Clt. 1629. Pl. ½ to 1 foot.

17 D. FORSKŒ'LII (Rchb. ill. t. 5.) stem erectish, dwarf, a little branched, downy; lower leaves 3-toothed, upper ones linear, acute, all sessile and puberulous; racemes loose, few-flowered; lower petals obovate-lanceolate. ⊙. H. Native of the Dardanelles. D. grandiflòrum, Forsk. fl. æg. arab. p. 212. Stem white with down and curled hairs above; branches and branchlets terminated by 1-3-flowers, bearing 2 small bracteas in the middle of each peduncle. Flowers a little larger than those of *D. peregrìnum*, of a violet colour; young ones puberulous. Capsules 3, pubescent.

Forsköl's Larkspur. Fl. June, July. Pl. ½ foot.

18 D. NA'NUM (D. C. syst. 1. p. 349.) stem erectish, dwarf, and is, as well as leaves, velvety-pubescent; lower leaves 3 or 5-lobed, upper ones linear; racemes loose, 2 or 3-flowered; lower petals orbicular. ⊙. H. Native about Alexandria in sandy places and of the Dardanelles. D. peregrìnum. Delile, ill. fl. ægypt. 17. but not of Lin. Like *D. júnceum, var. β.* Flowers blueish-violet, with whitish petals, large for the size of the plant.

Dwarf Larkspur. Fl. June, July. Pl. ¼ to ½ foot.

19 D. HALTERA'TUM (Sibth. and Smith, fl. græc. t. 507.) stem erect, branched; leaves smooth, many-parted; lower floral ones trifid, upper ones entire; racemes loose; petals spreading, lower ones stipitate, orbicular. ⊙. H. Native of Sicily. Flowers blueish-purple. Like *D. júnceum.*

Small-winged Larkspur. Fl. June, July. Pl. 1 foot.

20 D. VIRGA'TUM (Poir. suppl. 2. p. 458.) stem erect, branching from the base; leaves smooth, lower ones trifid with toothed lobes, those of the branches and flowers entire and acute; racemes loose; lower petals stipitate, ovate. ⊙. H. Native of Syria. Deless. icon. sel. 1. t. 55. Herb pale green. Flowers blueish-purple.

Twiggy Larkspur. Fl. June, Jul. Clt. 1823. Pl. 1 foot.

21 D. MACROPE'TALUM (D. C. syst. 1. p. 350.) stem erect, much branched; leaves smooth, membranous, lower ones palmately-multifid, upper ones linear, very acute; racemes loose; lower petals stipitate, ovate. ⊙. H. Native of the north of Africa about Mogador. Deless. icon. sel. 1. t. 55. Flowers blueish-violet.

Long-petalled Larkspur. Fl. June, July. Pl. 1 to 2 feet.

22 D. OBCORDA'TUM (D. C. syst. 1. p. 350.) stem erect, branched: leaves smooth, cauline ones 3-lobed, with the lobes somewhat bifid; branch and floral leaves entire, acute; racemes loose; lower petals stipitate, obcordate. ⊙. H. Native of Barbary. Flowers blue, distant from each other.

Obcordate-petalled Larkspur. Fl. June, July. Pl. 1½ foot.

23 D. TRIBRACTEOLA'TUM (D. C. syst. 1. p. 350.) stem erect, branched; lower leaves palmately-lobed; racemes loose; pedicels bearing 3 bracteas; lower petals stipitate, orbicular, cordate at the base. ⊙. H. Native of Barbary. Flowers middle-sized, blue, with a straight spur, which is about 4 lines long.

Three-bracted-pedicelled Larkspur. Fl. June, July. Pl. 1 foot.

SECT. III. DELPHINA'STRUM (an alteration from *Delphinium*, which see). D. C. syst. 1. p. 351. prod. 1. p. 53.

Ovaries 3 or 5. Petals free, lower ones usually bifid with a bearded disk. Spur elongated, containing the appendages of two petals. Perennial plants, they are usually called *Bee Larkspur*, because the bearded petals resemble a *Bee*.

§ 1. *Limb of lower petals entire.*

24 D. GRANDIFLÒRUM (Lin. spec. ed. 1. p. 531. ed. 2. p. 749. Richb. ill. t. 12.) leaves palmately-many-parted into distant linear lobes; pedicels longer than the bracteas; petals shorter than the calyx, two lower ones somewhat orbicular, with obliquely inflexed, entire borders; racemes spreading, few-flowered, diverging. ♃. H. Native of Siberia near the Volga, and in Dauria, about Oulcapin, &c. Sims, bot. mag. 1686. D. virgàtum, Jacq. fil.—Mill. icon. t. 250.—Gmel. sib. 4. p. 187. t. 78. Flowers either double or single, large, blue, and the intermediate shades to white. A very ornamental plant.

Var. β, *Chinénse* (Fisch. in litt. Lod. bot. cab. t. 71. Rchb. ill. t. 13.) stem stiff, straight; racemes many-flowered, lateral ones erectish; lower petals suborbicular; colour of flowers easily changed by cultivation. ♃. H. Native of China. Flowers blue and the intermediate shades to white, with the two lower petals bearded with yellow hairs. A very ornamental plant.

Var. γ, *Fischèri* (Rchb. ill. t. 14.) racemes many-flowered, lateral ones twiggy, erectish; petals quadrate-oblong, two lower ones obovate. ♃. H. Native of China. Flowers pinkish-purple.

Great-flowered Larkspur. Fl. Ju. Sep. Clt. 1816. Pl. 1 to 2 ft.

25 D. CHEILA'NTHUM (Fisch. in litt. D. C. syst. 1. p. 352.) stem erect, branched; leaves 5-parted, with oblong, acuminated, subtrifid and somewhat toothed lobes; petals shorter than the calyx, two lower ones with obliquely inflexed, ovate, entire limbs; capsules reticulately-painted, pubescent. ♃. H. Native of Dauria about Doroninsk. Ker. bot. reg. t. 473. Schrank. pl. rar. 52. with a figure. D. Dahùricum. Stev. ined.—Gmel. sib. 4. p. 187. t. 76. Flower size and colour of those of *D. grandiflòrum*.

Lip-flowered Larkspur. Fl. Ju. Sep. Clt. 1819. Pl. 2 to 3 ft.

26 D. VIRE'SCENS (Nutt. gen. amer. 2. p. 14.) stem simple, pubescent; leaves on long footstalks, 3 or 5-parted, with linear subtrifid segments; racemes few-flowered; spur longer than the flower. ♃. H. Native of North America in the plains of the Missouri. Flowers greenish?

Greenish-flowered Larkspur. Fl. June, Sept. Pl. 2 feet.

§ 2. *Limb of lower petals bifid.*

27 D. PUNI'CEUM (Pall. voy. 8. p. 327. no. 336. Lin. fil. suppl. 267.) petioles dilated and sheathing at the base; leaves many-parted, even to the base, into linear lobes; recemes elongated; spur straight, blunt, rather longer than the pedicel, but shorter than the flower. ♃. H. Native in the arid desert of Tartary about the Volga, &c. Flowers dark purple, pubescent on the outside.

Var. β, *Damæcòrnu*, segments of leaves stalked, with diverging lanceolate lobes. ♃. H.—Gmel. sib. 4. t. 77? Flowers larger than in var. α.

Scarlet Larkspur. Fl. June, Sept. Clt. 1785. Pl. 1 foot.

28 D. ALBIFLO'RUM (D. C. syst. 1. p. 353.) petioles dilated and sheathing at the base; leaves many-parted, with linear lobes; racemes elongated, crowded; bracteas membranous, broad-lanceolate; spur straight, blunt, rather longer than the pedicel. ♃. H. Native of Armenia. Deless. icon. sel. 1. t. 58. Flowers like those of *D. puníceum*, but white, and smooth on the outside.

White-flowered Larkspur. Fl. Jul. Aug. Clt. 1823. Pl. 3 ft.

29 D. OCHROLEU'CUM (Stev. diss. ined. D. C. prod. 1. p. 54. syst. 1. 546.) petioles dilated and sheathing at the base; leaves many-parted, with linear awl-shaped segments; racemes short; spur acute, longer than the flower; capsules smooth. ♃. H. Native of Iberia. D. puníceum, var. Bieb. fl. taur. cauc. 2. p. 13. Flowers white or cream-coloured, pubescent on the outside.

Cream-coloured-flowered Larkspur. Fl. Ju. Sept. Clt. 1817. Pl. 2 feet.

30 D. HY'BRIDUM (Willd. spec. 2. p. 1229.) petioles dilated and sheathing at the base; leaves many-parted, with linear lobes; racemes crowded; spur straight, longer than the flower. ♃. H. Native of Tauria and Caucasus. D. hirsùtum, Pers. ench. 2. p. 81. Lower part of plant smooth, upper part velvety-pubescent. Flowers blue, with the two lower petals bearded with white hairs.

Var. β, *fissum* (Waldst. et Kit. pl. hung. 1. p. 83. t. 81.) racemes elongated; lobes of lower petals narrower and longer than in var. α. ♃. H. Native of Hungary near Walachia in bushy places, Flowers darker blue than those of var. α.

Hybrid Larkspur. Fl. Ju. Aug. Clt. 1794. Pl. 3 to 4 feet.

31 D. VELUTI'NUM (Bert. exc. p. 12.) petioles dilated and sheathing at the base; leaves 5-parted, multifid, with linear lobes; racemes loose, and are, as well as the stems, clothed with very soft down; spur curved; lower bracteas longer than the flowers. ♃. H. Native of Italy on the mountains. D. hýbridum var. γ. D. C. syst. 1. p. 554. Flowers blue.

Var. β, D. orientale perenne aconiti folio, flore cæruleo. Tourn. cor. 30. ♃. H. Native of Armenia.

Velvety Larkspur. Fl. July, Aug. Clt. 1819. Pl. 3-4 feet.

32 D. PENTA'GYNUM (Lam. dict. 2. p. 264.) petioles dilated and sheathing at the base; lower leaves 5-lobed, with the lobes cut and bluntish at the apex: upper leaves 5-parted, many-cleft into linear lobes; petals shorter than the calyx. ♃. H. Native in corn-fields at Algiers, on cretaceous hills in Portugal, also Gibraltar. Desf. atl. 1. p. 427. t. 111. Herb branched, velvety, or smooth at the bottom. Flowers large, blue or violet.

Five-styled Larkspur. Fl. Ju. Jul. Clt. 1819. Pl. 1 to 2 ft.

33 D. MENSI'ESII (D. C. syst. 1. p. 355.) petioles hardly dilated at the base; leaves 5-parted, with trifid entire linear lobes; bracteas trifid; root grumose. ♃. H. Native of the north-west coast of America, Kotzebue's Sound, Puget Sound, Columbia River, and in California. D. tuberòsum. Menz. MSS. Lindl. bot. reg. t. 1192. Flowers about the size and colour of those of *D. grandiflòrum*, pubescent on the outside, with a straight spur.

Menzies's Larkspur. Fl. June, July. Clt. 1826. Pl. 1 to 2 ft.

34 D. E'LEGANS (D. C. syst. 1. p. 355.) petioles hardly dilated at the base; leaves smooth, 5-parted, with 3-5-cleft lobes, and linear-lanceolate acute lobules; racemes loose, few-flowered; petals shorter than the calyx; spur curved, shorter than the sepals. ♃. H. Native of North America? Flower beautiful dark-blue, smaller than those of *D. grandiflòrum*.

Var. β, *múltiplex*. Flower double, of a beautiful dark-blue colour. Moris. fl. consp. t. 43. D. grandiflòra flòre pleno, Hort. This has been long known in the gardens under the name of *Double Larkspur*.

Elegant Larkspur. Fl. June, July. Clt. 1741. Pl. 1½ foot.

35 D. AMŒ'NUM (Stev. ined. D. C. syst. 1. p. 546.) petioles hardly dilated at the base; leaves pubescent underneath, 5-parted, with lanceolate pinnatifid lobes, and linear acute lobules; racemes branched; petals shorter than the calyx; spur straight. ♃. H. Native of Siberia.—Gmel. sib. 4. p. 187. t. 77. exclusive of the synonym of Amman. Flowers beautiful blue.

Pleasing Larkspur. Fl. Ju. Jul. Clt. 1818. Pl. 2 or 3 ft.

36 D. TRICO'RNE (Mich. fl. bor. amer. 1. p. 314.) petioles smooth, hardly dilated at the base; leaves 5-parted, with 3-5-cleft lobes, and linear lobules; petals shorter than the calyx; capsules 3, reflexed, arched, spreading from the base. ♃. H. Native of North America on the sides of shady and fertile hills, on

the banks of rivers from Virginia to Carolina; particularly plentiful about Harper's Ferry on the Potowmac, Virginia. A small plant with beautiful blue flowers. Deless. icon. sel. 1. t. 59.

Var. β, multiflòrum (D. C. syst. 1. p. 356.) plant much more pubescent; flowers from 15 to 20 in dense racemes.

Three-horned Larkspur. Fl. May, June. Pl. $\frac{3}{4}$ foot.

37 D. SI'MPLEX (Doug. MSS. in Hook. fl. bor. amer. p. 25.) petioles dilated at the base; leaves 3-parted, profoundly jagged, with linear lobes, and are pubescent as well as the stems; racemes strict, almost simple; petals bearded; spur straight, longer than the limb. ♃. H. Native of North America on the subalpine range, west of the Rocky Mountains near the Columbia, plentiful. Allied to *D. azùreum*, but that has the leaves smooth, the racemes shorter, and the flowers with a much smaller spur, which is curved inwards. Flowers deep blue.

Simple-stemmed Larkspur. Fl. May, Jul. Clt. 1826. Pl. 3 ft.

38 D. AZU'REUM (Mich. fl. bor. amer. 1. p. 314.) petioles hardly dilated at the base; leaves 3-5-parted, many-cleft, with linear lobes; racemes straight; petals all bearded at the apex, lower ones very villous. ♃. H. Native of North America on the borders of woods in a sandy soil, from Carolina to Georgia. On the banks of the Missouri and Mississippi. Flowers large, beautiful sky-blue.

Sky-blue Larkspur. Fl. May, July. Clt. 1805. Pl. 3 feet.

39 D. EXALTA'TUM (Ait. hort. kew. ed. 1. vol. 2. p. 244.) petioles not dilated at the base; leaves flat, cleft into 3-5-7-parts beyond the middle, with wedge-shaped lobes which are trifid or jagged, and acuminated at the apex; racemes straight; spur straight, length of the calyx. ♃. H. Native of North America in rocky shady places in the mountains of Virginia and Carolina and on the Rocky Mountains. D. tridáctylum, Mich. fl. bor. amer. 1. p. 314. Flowers blue, middle sized, sometimes white.

Exalted or Bee Larkspur. Fl. Jul. Aug. Clt. 1758. Pl. 3 to 6 feet.

40 D. URCEOLA'TUM (Jacq. coll. 1. p. 153. icon. rar. 1. t. 101.) petioles not dilated at the base; leaves concave, cleft beyond the middle into three, with wedge-shaped lobes, which are cut and acuminated at the apex; racemes straight; spur straight, rather longer than the calyx. ♃. H. Native of North America? Sims, bot. mag. t. 1791. Upper part of stem smooth, lower part pubescent. Flowers blue, suffused with red, not pure blue.

Urceolate-leaved Larkspur. Fl. Ju. Jul. Clt. 1801. Pl. 5 feet.

41 D. REVOLU'TUM (Desf. cat. h. par. ed. 2. p. 148.) petioles not dilated at the base; leaves orbicular, cordate, 5-cleft, with cut, acute, deflexed lobes; pedicels furnished with 3 bracteas; ovaries smooth. ♃. H. Native? Stem fistular, mealy. Flowers pale blue with brown petals.

Revolute-leaved Larkspur. Fl. June, July. Pl. 4 or 5 feet.

42 D. MESOLEU'CUM (Link. enum. hort. berl. 2. p. 80.) leaves rather dilated at the base, with wedge-shaped segments, which are deeply serrated at the top; upper part of the stem as well as the peduncles pubescent. Native of? Moris, fl. consp. t. 25. Flowers blue, with pale yellow or whitish petals.

Middle-white-flowered Larkspur. Fl. June, Aug. Clt. 1822. Pl. 3 feet.

43 D. PALMATI'FIDUM (D. C. syst. 1. p. 358.) petioles not dilated at the base; leaves ciliated, 5-cleft, somewhat truncate at the base, with the lobes cut at the apex: upper leaves of 3 entire trifid lobes; with the nerves hairy underneath; bracteoles, capsules, and calyxes smooth. ♃. H. Native of Siberia. Flowers blue, with brownish petals.

Var. α, hispidum (D. C. syst. 1. p. 358.) stems hispid with spreading hairs; pedicels smoothish.—Gmel. sib. 4. p. 187. t. 79.

Var. β, glabéllum (D. C. l. c.) stem almost smooth; pedicels rather hispid with spreading hairs.—Gmel. sib. 4. p. 187. t. 75.?

Palmate-cleft-leaved Larkspur. Fl. June, July. Clt. 1827. Pl. 2 or 3 feet.

44 D. INTERME'DIUM (Ait. hort. kew. ed. 1. vol. 1. p. 243.) petioles not dilated at the base; leaves cordate, 5-7-cleft, upper ones 3-lobed, with all the lobes deeply serrated; pedicels, bracteoles, calyxes and ovaries smooth. ♃. H. Native of Silesia, Hungary, Switzerland, and the Pyrenees, in alpine valleys. Flowers blue. D. elàtum, Lin.?

Var. α, pilosíssimum (D. C. syst. 1. p. 358.) stem very hairy; leaves villous, with the nerves on the upper surface pilose; racemes branched. ♃. H. Native of Siberia.—Gmel. sib. 4. p. 167. t. 80.?

Var. β, alpìnum (Waldst. et Kit. pl. hung. 3. p. 273. t. 246.) stem almost smooth; leaves pubescent; racemes branched. ♃. H. Native of Hungary.—Clus. hist. 2. p. 94. f. 2.

Var. γ, leptostàchyum (D. C. syst. 1. p. 359.) stem and petioles smooth; leaves pubescent; racemes short and simple. ♃. H. Native of the Pyrenees. D. intermèdium, Lapeyr. abr. p. 304.?

Var. δ, ranunculifòlium (D. C. syst. 1. p. 359.) stem smooth; petioles pilose; leaves pubescent; racemes simple, lax. ♃. H. Native of Switzerland.

Var. ε, láxum (D. C. l. c.) stem and leaves smooth, with acutely cut lobes: racemes lax, branched. ♃. H.—Mill. icon. t. 119.

Intermediate Larkspur. Fl. Ju. Jul. Clt. 1710. Pl. 4 to 8 ft.

45 D. CUNEA'TUM (Stev. diss. ined. D. C. syst. 1. p. 359.) petioles not dilated at the base; leaves wedge-shaped at the base, 5-7-lobed, with the lobes cut and acute; racemes lax, branched; bracteas and calyxes smooth; capsules rather pubescent. ♃. H. Native of Russia at the lower Volga. Deless. icon. sel. 1. t. 61. Ker. bot. reg. 327. D. hýbridum, Lin. herb. D. azùreum. hort. D. elàtum β, Lam. dict. 2. p. 265. Flowers beautiful blue, with brownish petals, two lower petals bearded with yellow hairs.

Var. β, pubiflòrum, (D. C. prod. 1. p. 55.) pedicels, bracteoles, calyxes and younger capsules velvety with fine dense down. ♃. H. Native about Saratof.

Wedge-leaved Larkspur. Fl. Ju. Jul. Clt. 1816. Pl. 3 or 4 ft.

46 D. VILLO'SUM (Stev. in litt. hort. dorp. D. C. prod. 1. p. 53.) petioles hardly dilated at the base; leaves smooth, cuneated at the base, 3-5-lobed, with the lobes cut and acute; racemes lax; pedicels bracteate, and are, as well as capsules, villous; spur straight. ♃. H. Native of? Flowers blue. An intermediate plant between *D. cuneàtum* and *D. dyctiocárpum*.

Villous Larkspur. Fl. Ju. Jul. Clt. 1818. Pl. 4 or 6 feet.

47 D. DYCTIOCA'RPUM (D. C. syst. 1. p. 360.) petioles not dilated at the base; leaves 5-7-lobed; lobes, oblong, acute, and deeply pinnatifid; upper leaves somewhat 3-parted, with narrow entirish lobes; racemes lax, branched; bracteas and calyxes smooth; capsules reticulated, with the keel and margin ciliated. ♃. H. Native of Siberia. Habit of *D. elàtum* or *D. cuneàtum*. Flowers beautiful blue with brown petals, two lower petals hispid, with yellow hairs. Spur straight. A smooth plant.

Netted-capsuled Larkspur. Fl. Ju. Jul. Clt. 1817. Pl. 4 or 6 ft.

48 D. LAXIFLO'RUM (D. C. syst. 1. p. 360.) petioles not dilated at the base; leaves 3-7-lobed, with the lobes oblong, acute, and deeply pinnatifid: upper leaves somewhat 3-parted, with narrow, entire lobes; racemes loose, branched; bracteoles and ovaries pubescent. ♃. H. Native of Siberia. Stems hispid at the bottom. Flowers blue.

Lax-flowered Larkspur. Fl. June, July. Clt.? Pl. 4 or 6 feet.

49 D. MONTA'NUM (D. C. fl. fr. 5. p. 641. syst. 1. p. 360.) petioles not dilated at the base; leaves pubescent, 5-lobed, lobes wedge-shaped at the base, but trifid and cut at the apex; racemes simple; bracteas, calyxes, and capsules pubescent; spur bent inwards. ♃. H. Native of the Pyrenees and the Alps of

Provence, Piedmont, and Switzerland. D. hirsùtum, Roth. Beitr. 88. D. elàtum, All. pedem. no. 1504. D. elátum, var. *a*, Lam. dict. 2. p. 265. D. intermèdium, Lois. not. p. 86. Herb velvety, with down. Flowers blue, pubescent.

Var. β, bracteòsum (D. C. syst. 1. p. 361.) lower bracteas longer than the flowers; petals all bearded at the top. ♃. H. Native on the Alps about Barcelonne. A more luxuriant plant than *var. a.*

Mountain Larkspur. Fl. June. July. Clt. 1816. Pl. 4 to 6 ft.

50 D. dasyca'rpum (Stev. ined. D. C. syst. 1. p. 547.) petioles not dilated at the base; leaves pubescent, 5-lobed; lobes lanceolate, somewhat trifid, deeply toothed at the apex; racemes simple, pubescent; pedicels thrice as long as the bracteas; sepals rather villous, twice as long as the petals; spur straight. ♃. H. Native of Caucasus about Nartsa. Flowers a little larger than those of *D. montànum*, of a beautiful blue, with dark brown petals. Capsules pubescent.

Thick-capsuled Larkspur. Fl. Ju. Jul. Clt. 1819. Pl. 4 or 6 ft.

51 D. care'la (Hamilt. mss. D. Don, prod. fl. nep. p. 195.) petioles not dilated at the base; leaves 5-lobed, hairy, with deeply-lobed wedge-shaped segments; bracteas and calyxes pilose; spurs curved, obtuse, length of pedicels; capsules smooth. ♃. H. Native of Nipaul at Narainhetty. D. scabriflòrum, D. Don. in Wern. mem. 3. p. 412. Stem pilose towards the top. Racemes straight, few-flowered. Flowers of a dirty-blue colour. Capsules 3. *Carela* is the name of the plant in Nipaul.

Carela Larkspur. Fl. July, Aug. Pl. 4 feet.

52 D. speciòsum (Bieb. fl. taur. cauc. 2. p. 12.) petioles not dilated at the base; leaves pubescent, 5-lobed; lobes deeply serrated; bracteas lanceolate, villous, clammy; spur curved; capsules smooth. ♃. H. Native of Caucasus on Alp Kraischaur. Deless. icon. sel. 1. t. 62. Flowers blue, with dark-brown petals, the two lower ones bearded with yellow hairs in the disk and white hairs on the margins.

Shewy Larkspur. Fl. July, Aug. Clt. 1816. Pl. 2 to 4 feet.

53 D. flexuòsum (Bieb. fl. taur. cauc. 2. p. 12.) petioles not dilated at the base; leaves 5-lobed; lobes cut; stem flexuous, and is as well as petioles hairy; bracteas linear; capsules smooth. ♃. H. Native of Caucasus and Iberia. Trev. delp. obs. p. 15. t. 1 and 2. f. a. b. c. and d. D. ciliàtum, suppl. enum. hort. dorp. 1811. ex Stev. Stems reddish, and furnished with a few white hairs. Flowers smaller than those of *D. speciòsum*, blue, with dark-brown petals.

Flexuous-stemmed Larkspur. Fl. July, Aug. Clt. 1817. Pl. 3 or 4 feet.

54 D. tríste (Fisch. in litt. D. C. syst. 1. p. 362.) petioles not dilated at the base; leaves 3-5-parted; lobes narrow, somewhat pinnatifid, acute; upper leaves 3-parted, with entire lobes; racemes loose; capsules pubescent. ♃. H. Native of Dauria and Siberia. D. obscùrum, Stev. diss. ined. Flowers dark-brown, suffused with a little red at the edges of the sepals, and with a somewhat violaceous spur, (Fisch.) but according to Steven. they are dark-purple; they smell somewhat like bugs.

Sad-coloured Larkspur. Fl. July, Sept. Clt. 1819. Pl. 2 ft.

Sect. IV. staphisa'gria (σταφις, *staphis*, a bunch of dry raisins; αγρια, *agria*, wild, in allusion to the dry wrinkled seed bearing some resemblance to a dry raisin.) C. and J. Bauh. D. C. syst. 1. p. 362. prod. 1. p. 56. Ovaries from 3 to 5. Petals free. Spur short, containing the appendages of two petals. Capsules ventricose. Seeds few, large, rather globose.—Biennials.

55 D. Requie'nii (D. C. fl. fr. 5. p. 642. syst. 1. p. 362.) spur almost as long as the calyx; bracteas inserted on the middle of the pedicels. ♂. H. Native of the Stœchades Islands Deless. icon. sel. 1. t. 63. Lower part of herb smooth, or scarcely pubescent, upper part hispid with long crowded spreading hairs. Leaves on long stalks, lower ones cleft into 5 broad cuneated 3-5-toothed lobes, upper ones divided into 5-linear entire lobes. Flowers blueish, hispid.

Requien's Larkspur. Fl. June, July. Clt. 1819. Pl. 1½ foot.

56 D. pictum (Willd. enum. 574.) spur about the length of the calyx; bracteas inserted at the base of the pedicels; petioles pubescent; pedicels hardly longer than the flowers. ♂. H. Native of the south of Europe. Sweet. fl. gard. t. 123. D. staphysàgria, Woodv. med. bot. t. 154. D. marítimum, Cav. Differing from *D. pictum* in the leaves being 5-7-cleft, usually variegated with white; racemes more crowded, and the pedicels longer. Flowers lead-coloured, or variegated with white. The seeds of this plant, as well as the preceding, possess the same medical qualities as *D. staphysàgria.*

Painted-leaved Larkspur. Fl. Ju. Jul. Clt. 1800. Pl. 1 to 2 ft.

57 D. mixtum (Lois. fl. gen. fr. pt. 2.) spur short, hooked; bracteas inserted at the base of the pedicels; flowers large, longer than the pedicels; leaves sub-5-lobed; lobes entire. ♂. H. Native of Provence. Flowers blue, variegated with white.

Mixed Larkspur. Fl. June, July. Pl. 2 feet.

58 D. staphysa'gria (Lin. spec. 750.) spur very short; bracteoles inserted at the base of the pedicels; petioles hairy; pedicels twice as long as flower. ♂. H. Native among rubbish in the south of Europe and Teneriffe. Smith fl. græc. 508.—Trag. stirp. p. 902.—Bauh. hist. 3. p. 641 and 642. f. 1. Cam. epit. 947. A large erect herb. Leaves 5-9-cleft. Flower lax blue, with whitish petals. The seeds are usually brought from Italy. They are large and rough, of an irregular triangular figure, of a blackish colour on the outside and yellowish within; they have a disagreeable smell, and a very nauseous bitterish-burning taste. A new alkaloid, called *Delphìnia*, is obtained from the seed in the usual manner, either by boiling the decoction with pure magnesia, separating the fluid by filtration, and boiling the residium with alcohol, which lets fall as it cools the alkaloid in white flakes; or by acting upon the bruised seeds by diluted sulphuric acid, and adding sub-carbonate of potass, which precipitates the alkaloid. *Delphinia* is soluble in alcohol and ether, sparingly so in water, saturates acids, and is precipitated by alkalies. Its salts rarely form regular crystals, but a hard transparent mass.—Stavesacre was employed by the ancients as a cathartic, but it operates with so much violence both upwards and downwards, that its internal use has been for some time almost laid aside. It is chiefly employed in external applications for some kinds of cutaneous eruptions, and for destroying lice and other insects; insomuch that from this virtue it has received its name in different languages.

Stavesacre or Lousewort Larkspur. Fl. May, June. Clt. 1596. Pl. 2 or 3 feet.

N.B. D. Verdue'nse of Balbis, a native of Gascony, we are not acquainted with. It may probably prove a synonym of one or other of the species above.

Cult. All the species of Larkspur are very ornamental border flowers, and will grow in any common garden soil. The herbaceous perennial species are increased by dividing the plants at the roots or by seeds. The biennial and annual species only require to be sown in the open border, where they will flower and seed freely. The perennial species of *Delphínium* are very apt to mix with each other in the gardens, and on that account very few of the unadulterated species are to be met with in cultivation, most of them being hybrids.

XXIX. ACONI'TUM (said to be derived from *Acona*, a town in Bithynia: some species grow plentiful there.) Tourn.

inst. 1. p. 424. t. 239 and 240. Lin. gen. no. 682. D. C. syst. 1. p. 364. prod. 1. p. 56. Ser. mus. helv. 1. p. 115. Rchb. Uebers. p. 13. illus. gen. Acon. atque. Delp.

Lin. syst. *Polyándria, Tri-Pentagýnia.* Calyx of 5 petal-like, irregular, deciduous or marcescent sepals, with the upper sepal concave and helmet-shaped. Petals 2 (or hollow nectaries), hidden within the helmet, on long stalks, expanded into a hollow inverted tube at the apex, drawn out at the ends into a spur, which is either straight, hooked, or twisted.—Herbaceous perennial herbs, with tuberous, fibrous or napiform roots, and palmate-parted leaves, with the partitions deeply toothed or multifid. Racemes terminal, with 1-flowered pedicels rising from the axils of the bracteas, each furnished with two bracteoles. Flowers large, irregular, yellow, cream-coloured, blue or white, or mixed with these colours. The species are all poisonous; the root is the most powerful part.

This genus is called in English *Monks-hood* and *Wolfs-bane;* the former from the shape of the flower; the latter from the poisonous quality of the plants.

Sect. I. Anthoroìdea (applied to this section because the plants it contains agree with *A. Anthòra*, a syncope of *Anti-thora*, that is to say, counter-poison.) Rchb. uebers. p. 13. Sect. 1. Anthòra, D. C. syst. 1. p. 364. Calyx permanent. Petals (nectaries) supine, somewhat hooked, lip obcordate, tapering into the pedicel. Stamens smoothish. Capsules 5, erect. Helmet arched. Flowers cream-coloured, sometimes variegated with blue. Leaves palmately cut into linear lobes. Roots napiform.

1 A. Anthòra (Lin. spec. 751. Rchb. ill. t. 59.) spur refracted; germens equally pubescent. ♃. H. Native of the Pyrenees, Switzerland, Hungary, Italy, &c. A ochroleùcum, Salisb.—Lob. Stirp. ed. 1576. p. 385.—Clus. hist. V. p. 98.—Barrel. icon. 609, &c. Flowers pale yellow. This species was formerly made use of in *medicine*, and recommended as an antidote to the poisonous species: whence by some writers it is called *Anthora* and *Antithora*, the poisonous ones having been named *Thora*. The taste of the root is sweet, with a mixture of bitterness and acrimony. The smell is pleasant. It purges vehemently when fresh, but loses its qualities when dried; it is disused in the present practice; and is certainly poisonous, but perhaps in a less degree than those of the other sections. Haller regards it as one of the most dangerous.

Var. β, *grandiflòrum* (Rchb. uebers. p. 15. acon. p. 63. t. 1. f. B.) panicle flowers and fruit pubescent; flowers yellow, large; helmet rather conical. ♃. H. Native of the Alps of Jura, &c.

Var. γ, *eúlophum* (Rchb. uebers. p. 15. acon. p. 69. t. 5.) panicles and flowers puberulous; helmet conical; flowers yellow. ♃. H. Native of Caucasus and the Alps of Jura, &c.

Var. δ, *Decandóllii* (Rchb. uebers. p. 16. acon. p. 67. t. 3.) panicle and flowers pubescent; helmet rather conical, bent, with a short, abrupt, and acuminated beak. Lobes of leaves rather broad, and are as well as the stem dark green. ♃. H. Native of the mountains of Gavarn and at Port Espagne in the Pyrenees. A. Anthòra β, atrovírens, D. C. syst. 1. p. 366. Flowers yellow.

Var. ε, *nemoròsum* (Bieb. ex Rchb. uebers. p. 16. acon. p. 71. t. 6. f. *) panicle and flowers pubescent; helmet somewhat conical, bent, beak short. Lobes of leaves broad. Flowers yellow. ♃. H. Native of Siberia and Caucasus. A. tuberòsum, Patrin, A. Anthòra δ, latílobum, Ser. mus. helv. 1. p. 131.

Var. ζ, *glabriflòrum* (Rchb. uebers. p. 15.) flowers smooth, yellow. ♃. H. Native of the Eastern Pyrenees in the valley called *d' Eynes.*

Var. κ, *Jacquínii* (Rchb. uebers. p. 17. acon. p. 65. t. 2.) flowers smooth; helmet somewhat conical, drawn out into an elongated beak; flowers yellow. ♃. H. Native of Austria and the Pyrenees. A. Anthòra, Jacq. austr. t. 382. γ, Jacquiniànum, Ser. mus. helv. 1. p. 131.

Var. λ, *inclinàtum* (Ser. mus. helv. 1. p. 131. t. 15. f. 2.) panicle flowers and fruit pubescent; helmet high, conical, with an incumbent beak; flowers yellow. ♃. H. Native of the Alps of Jura.

Var. θ, *multicucullàtum* (Ser. mus. helv. 1. p. 132. t. 16.) lateral petals cucullate; lateral sepals helmet-shaped. ♃. H. Native of the Alps of Jura.

Counter-poison Aconite. Fl. Ju. Aug. Clt. 1596. Pl. 1 to 2 ft.

2 A. Pall'asii (Rchb. uebers. p. 18. acon. p. 72. t. 6. f. A. ill. t. 60.) spur continuous. ♃. H. Native of Siberia. A. Anthòra, Pall. Bieb. Flowers yellow, and are as well as the fruit pubescent.

Pallas's Aconite. Fl. Ju. Aug. Clt. 1821. Pl. 1 to 2 feet.

3 A. anthoroìdeum (D. C. syst. 1. p. 366. Rchb. uebers. p. 19. acon. p. 68. t. 4. ill. t. 61.) spur refracted; germens bearded. ♃. H. Native of Siberia. A. Anthòra, Bieb.? Pall.? Panicle flowers and fruit pubescent.

Var. β, *versícolor;* flowers smoothish, yellow variegated with blue; helmet low, rather conical. ♃. H. Native of Iberia. A. Anthòra, var. versícolor, Stev. ined.

Anthora-like Aconite. Fl. Ju. Aug. Clt. 1821. Pl. 1 to 2 ft.

Sect. II. Napelloi'dea (a name applied to this section on account of the plants it contains agreeing in character with *A. Napéllus*, which is derived from *napus*, a turnip, on account of the form of the roots, they having the appearance of little black turnips.) Rchb. uebers. p. 13. Sect. IV. Napéllus, D. C. syst. 1. p. 371. prod. 1. p. 62. Calyx deciduous. Petals (nectaries) supine, obtuse or capitate, with a bifid lip. Stamens pilose. Capsules usually 3 (rarely 2 to 7) young ones diverging. Peduncles nodding. Helmet convex, hemispherical or arched (semicircular, rarely navicular, D. C.) Lobes of leaves cuneate, bipinnate. Roots tuberous. Flowers blue, white, whitish-blue, and yellowish-blue.

§ *Peduncles smooth.*

4 A. Koellea'num (Rchb. uebers. p. 19. acon. t. 11. f. 1.) spur blunt; filaments smooth. ♃. H. Native of Switzerland and Carinthia, &c. Rchb. ill. t. 72. A. Napéllus, Wulfen. Koelle. spicel. with a figure. A. manuàle, Sieb. A. Taúricum, Hoppe. pl. exsicc. A. Napéllus, β, spicàtum, Ser. mus. 1. p. 154. D. C. prod. 1. p. 62. Flowers disposed in loose spikes of a deep blue colour; bracteas short; helmet semicircular.

Var. β, *crassicaúle* (Rchb. uebers. p. 19.) stem thick. ♃. H. Native of Switzerland and Carinthia.

Var. γ, *pymæ'um* (Rchb. acon. t. 21. f. 1.) flowers 3-8 in a spike, deep blue. Leaves crowded. A. Napéllus, δ pygmæ'um, Ser. mus. helv. 1. p. 154. ♃. H. Native of Switzerland.

Koelle's Aconite. Fl. June, July. Clt. 1820. Pl. 2 to 4 feet.

5 A. Tauricum (Wulf. in Jacq. coll. 2. p. 112. icon. rar. 3. t. 49. Rchb. acon. p. 87. t. 12. f. 2-3.) spur blunt; filaments pilose; helmet closed, hemispherical; peduncles erect. ♃. H. Native of Germany and Switzerland. Rchb. illus. t. 63. Koelle. acon. A. densiflòrum, Hoppe. bot. Z. 1818. p. 142. A. læ'tum, Rchb. acon. 89. t. 13. f. 2. Koehlèri, commutàtum and plicàtum, Rchb. uebers. are hardly varieties of this species. A. Napellus ϖ lætum, Ser. mus. helv. 1. p. 157. A. Napéllus γ, bracteòsum, Ser. mus. helv. 1. p. 154. A. Napéllus, Haenk. Koell.—Clus. hist. 2. p. 95. f. 2.—Gerard, herb. 973. f. 6. Very like *A. Napéllus*, but the lateral sepals are smooth, not pilose inside. Flowers deep blue, disposed in dense racemes. Segments of leaves almost pedately disposed and divided into linear acuminate lobes.

Var. β, squarròsum (Rchb. uebers. p. 20.) Native of Switzerland. Flowers deep blue.

Taurian Aconite. Fl. June, July. Clt. 1752. Pl. 3 to 4 feet.

6 A. formòsum (Rchb. uebers. p. 36. acon. t. 18. f. 2.) spur obtuse; filaments pilose; helmet spreading; lip short. ♃. H. Native of Switzerland, Austria; Salzburg on mount Untersberg. Rchb. ill. t. 64. A. Napéllus, Hoppe, cent exsicc. A. híans, Clùsii, confértum, and rígidum, Rchb. Flowers blueish-purple in loose racemes. A. paniculàtum, var. κ, cérnuum, D. C. prod. 1. p. 60.

Beautiful Aconite. Fl. Ju. July. Clt. 1824. Pl. 2 to 3 feet.

7 A. acu'tum (Rchb. uebers. p. 21. acon. t. 14. f. 2.) spur capitate; filaments smooth; helmet closed, arched, beaked. ♃. H. Native of Switzerland, Tyroles, and Alps above Judenburg. Carinthia and Transylvania. A. Napéllus, Sieb. Wahl. Schultz. A. Kœlleànum, fi'rmum, Rchb. acon. t. 14. f. 2. A. Napéllus, W. rostellàtum, Ser. mus. helv. 1. p. 156.

Var. β, pygmæ'um (Vest. Rchb. uebers. p. 21.) plant small. ♃. H. Native of the Alps of Styria 6000 feet above the level of the sea and Transylvania. A. Napéllus, β nànum, Baumg. A. fi'rmum, β pygmæ'um, Rchb. uebers. p. 21.

Acute-beaked Aconite. Fl. June, Jul. Clt. 1820. Pl. 2 to 3 ft.

8 A. Hoppea'num (Rchb. illus. t. 65.) spur capitate; filaments smooth; helmet gaping. ♃. H. Native of Carinthia. A. Hóppii. Rchb. uebers. p. 24. A. Napéllus ι, Hoppeànum. Ser. mus. helv. 1. p. 155. A. Mielichhóferi, Rchb. Flowers blue in loose spikes; helmet falcate-navicular, beaked. Lobes of leaves bluntish.

Hoppe's Aconite. Fl. June, July. Clt. 1823. Pl. 1-3 feet.

9 A. angustifo'lium (Bernh. Willd. Rchb. acon. 95. t. 15. f. 2. ueber. p. 24.) spur capitate; filaments smooth; helmet closed hemispherical; lip bifid. ♃. H. Native of Siberia and Syria. A. Napéllus χ, anthoræfòlium, Ser. mus. helv. 1. p. 159. Flowers deep blue in spiked panicles. Leaves like those of *A. Anthòra*.

Var. β, tenuifòlium (Rchb. uebers. p. 24.), lobes of leaves very fine, bluntish, scarcely diverging. ♃. H. Native of the Alps of Vochin and Styria. A. venústum β, ramòsum, Rchb. uebers. p. 28. A. Napéllus β, β, tenuifòlium, Ser. mus. helv. 1. p. 159.

Narrow-leaved Aconite. Fl. Ju. Jul. Clt. 1824. Pl. 2-3 ft.

10 A. eusta'chium (Rchb. uebers. p. 24. acon. t. 15. f. 3.) spur capitate, filaments and lip pilose; helmet gaping, hemispherical. ♃. H. Native of Mount Baldo. A. Napéllus, Pona. A. Napéllus λ, falcàtum, Ser. mus. helv. 1. p. 155. Flowers intense purple in spiked panicles. Pedicels long. Limb of helmet entire. Leaves like those of *A. Anthòra*.

Well-spiked Aconite. Fl. Ju. Jul. Clt. 1824. Pl. 2-3 feet.

§ 6. *Peduncles pubescent.*

11 A. Nape'llus (Lin. spec. 751. Rchb. uebers. p. 25. illus. t. 1.) spur capitate; helmet convex-hemispherical, gaping, smoothish; lip of nectary revolute; peduncles erect; leaves pedately 5-parted. ♃. H. Native of Switzerland and Styria, &c.

Var. A. N. Schleichèri (Rchb. ill. t. 1.) stem straight (or infracted) simple, slender; partitions of leaves finely jagged; racemes short; petals somewhat exserted. ♃. H. Native of Europe. A. vulgàre, D. C. syst. 1. p. 371. Stem smooth. Racemes short, never much crowded. Flowers middle sized, blue or violet, pubescent when young. Pistils 3, smooth.

Var. α, A. N. Schleichèri normàle (Rchb. ill. t. 1. f. 1.) leaves more finely cut; racemes denser. ♃. H. Native of Switzerland. A. Taúricum, Schleich. cat. 1815. A. Nap. Taúricus Ser. cat. A. Nap. d. densum, Gaud. fl. helv. ined. A. Schleichèri, Rchb. ueber. p. 35. A. tenuifòlium, Schleich. in litt. A. Schleichèri elongàtum, Schleich. cat. 1821. p. 5. A. vulgàre β, pubéscens, D. C. syst. 1. p. 372.

Var. β, A. N. Schleichèri Luxùrians (Rchb. ill. t. 1. f. 2.) peduncles long; bracteas large, jagged, longer than the flowers; racemes loose. ♃. H. Native of Switzerland. A. Napéllus spicâ foliosâ, Schleich. cat. 1815, p. 5. A. Schleichèri β, comòsum, Rchb. uebers. p. 36.—Moris. hist. 3. p. 464. sect. 12. t. 3. f. 19.

Var. γ, A. N. Lobelìanum (Rchb. ill. t. 3.) stem erectish; partitions of leaves elongated with diverging segments; racemes elongated, loose, with a few small racemes at the base. ♃. H. Native of Dauphiny and Switzerland.—Lobel. stirp. ed. 1576. p. 387. icon.—Clus. hist. 5. p. 76. with a figure.—Dod. pempt. ed. 1583. p. 438, with a good figure. Flowers violet or white, smooth. Pistils 3, smooth. Fruit veiny; stem 2-4 feet. *N. Lob.* 1. *Luxùrians* (Rchb. ill. t. 3. f. 2.) plant strong. *N. Lob.* 2. *albiflòrum* (Rchb. ill. t. 2. f. 3.) flowers white.

Var. δ, A. N. Bauhìni (Rchb. ill. t. 4.) stem straight, long, branched; partitions of leaves linear, dilated, very long. ♃. H. Native of Switzerland, &c.—Bauh. hist. 3. p. 655, with a middling figure.—Chabr. Sciagr. p. 531. f. 2. and p. 527. f. 2. A. neomontànum, Schleich. cat. 1815. p. 5. A. Hallèri γ, ramòsum, Rchb. uebers. p. 28. and A. Hallèri. A. Napéllus ζ, ramosum, Schleich. 1822. Ser. mus. helv. 1. p. 154. Racemes elongated, loose, with a few lateral ascending ones. Flowers of an opaque violet-colour. Fruit veiny. Stem 4-6 feet.

Var. ε, A. N. β, compáctum (Rchb. ill. t. 2.) stem straight, simple, thickish, densely leafy; segments of leaves elongated; racemes compact, nearly simple. ♃. H. Native of the Pyrennees and Switzerland. A. Napéllus, D. C. fl. fr. 5. p. 917. No. 4682. Lapeyr. hist. pl. pyr. p. 305. A. compáctum. Rchb. uebers. p. 27.

1. *Flore violacea-cyaneo* (Rchb. ill. t. 2. f. 1.) flowers violet-blue.

2. *Flore-rubello* (Rchb.) flowers red. ♃. H. Native of Switzerland. A. compáctum, var. β, floribus rubéllis, Rchb. uebers. p. 27. A. Napéllus. τ. rubéllum, Ser. mus. helv. 1. p. 158.

Var. ξ, viridiflòrum (Ser. mus. helv. 1. p. 158.) flowers in loose spikes; helmet semicircular, hardly emarginate, blue, marked with green lines.

Var. η, maculàtum (Ser. mus. helv. 1. p. 159.) flowers spiked, blue spotted with white.

Var. ϑ, multicucullàtum (Ser. icon. ined. and. mus. helv. 1. p. 156.)

Var. ι, laciniòsum (Ser. mus. helv. 1. p. 159.) flowers loosely spiked and panicled, large, blue, somewhat conical; segments of leaves profound, linear, acute.

Var. κ, Hallèri bícolor (Rchb. uebers. p. 28.) flowers white variegated with blue, disposed in spikes or panicles. ♃. H. Native of Switzerland on Mount Stockhorn. A. bícolor, Schultz. obs. bot. 101. A. vulgàre γ, bícolor. D. C. syst. 1. p. 372. A. Napéllus υ, bícolor. Ser. mus. helv. 1. p. 158.

Linnæus says, that *A. Napéllus* is fatal to kine and goats, especially when they come fresh to it, but that it does no injury to horses who eat it only when dry. He also relates in the Stockholm acts, that an ignorant surgeon prescribed the leaves, and on the patient refusing to take them, he took them himself and died. The ancients, who were unacquainted with chemical poisons, regarded the Aconite as the most violent of all poisons; and accordingly fabled it to be the invention of Hecate, and to have sprung from the foam of Cerberus. Its real virulence is, however, sufficiently established by fatal experiment. Some persons, only by taking in the effluvia of the herb in full flower by the nostrils, have been seized with swooning fits, and have lost their sight for two or three days. But the root is unquestionably the most powerful part of the plant. Matthiolus relates that a criminal

was put to death by taking one drachm of it. Dodonæus gives us an instance of five persons at Antwerp who ate of the root by mistake and all died. Dr. Turner also mentions that some Frenchmen at the same place, eating the shoots of this plant for those of Masterwort, all died in the course of two days, except two players, who quickly evacuated all they had eaten by vomiting. We have an account, in the Philosophical Transactions, of a man who was poisoned in the year 1732 by eating some of the plant in a salad instead of celery, and Dr. Willis in his *De Anima Brutorum*, gives an instance of a man who died in a few hours by eating the tender leaves of this plant, also in a salad. He was seized with all the symptoms of mania.

The Aconite, thus invested with terrors, has however been so far subdued as to become a powerful remedy in some of the most troublesome disorders incident to the human frame. Baron Stoerck led the way by administering it in violent pains in the side and joints, in glandulous Scirrhi, tumours, ulcerous tubercles of the breast, &c. to the quantity of from ten to thirty grains in a dose of an extract, the method of making which he describes. In Sweden successful experiments have been made of an extract of the juice of the leaves, in cases of rheumatisms and intermittent fevers, given in doses of from a grain to a scruple twice a day or oftener. A much larger dose has also been safely administered. It is recommended, however, to begin with a small quantity; a caution the more necessary, when we consider the fatal effects which ignorantly eating the recent herb has sometimes produced. According to Dr. Murray, in his app. med. the chief virtue of the plant is in rheumatic and other chronic disorders. In all these cases the extract above mentioned is the best preparation. It has also been said to be of considerable service in venereal cases, even those of a confirmed nature: to have even discussed nodes, and cured obstinate ulcers, &c. In the *Gutta Serena* its efficacy has been commended; but perhaps not so certainly as in the forementioned disorders. The powder of the dried leaves is now more commonly used. All the species belonging to this section possess the same qualities, and indeed nearly the whole genus.

Napel, or Monks'-wood. Fl. Ju. Jul. Clt. 1596. Pl. 2-3 ft.

12 A. LA'XUM (Rchb. mon. t. 15. f. 4.) spur capitate; lip orbicular, obcordate; filament with a few long hairs; helmet gaping, arched. ♃. H. Native of Switzerland. A. Napéllus ψ microphýllum, Gaud. ined.? Flowers blue, few, disposed in a loose panicle.

Loose-flowered Aconite. Fl. Ju. Jul. Clt. 1820. Pl. 2-3 ft.

13 A. FUNCKIA'NUM (Rchb. ill. t. 66.) spur capitate; filaments pilose; helmet open, convex; peduncles loose, erect, elongated. ♃. H. Native of Salzburg on Mount Untersberg, Switzerland, and the Pyrenees. A. Fùnckii. Rchb. uebers. p. 28. A. pubéscens, Mœnch. Rchb. A. Napéllus β, pubéscens, D. C. syst. 1. p. 372. A. angustifòlium and squarròsum, Koch. Willd. enum. suppl. Flowers blue. Plant pubescent.

Funck's Aconite. Fl. June, July. Clt. 1825. Pl. 2-3 feet.

14 A. NEUBERGE'NSE (Clus. D. C. syst. 1. p. 373. Rchb. ill. t. 69.) spur capitate; filaments pilose; helmet closed, hemispherical; peduncles spreading; lip revolute. ♃. H. Native of Styria at Neuberg, Carinthia, Austria, Carniola, and the Pyrennees, &c. A. Napéllus, Jacq. fl. aust. 4. t. 381. A. neomontànum, Wulf. Kœll. acon. 16. A. Cámmarum. Var. β. Lin. spec. 751. exclusive of the synonyms. A. Bràunii, Rchb. A. Napéllus ξ, Neubergénse, Ser. mus. helv. 1. p. 156.—Clus. hist. v. p. 96.—Bauh. hist. 3. p. 657.—Chabr. sciagr. 531. f. 5.—Moris. hist. 3. t. 3. f. 11. Racemes loose. Flowers blueish-purple, in loose racemose panicles. Segments of leaves short, bluntish.

Neuberg Aconite. Fl. June, July. Clt. 1822. Pl. 2-3 feet.

15 A. BERNHARDIA'NUM (Rchb. uebers. p. 34.) spur capitate; filaments pilose; helmet closed, hemispherical. ♃. H. Native of Europe. A. hùmile Bernhardi, but not of Salisb. Flowers blue. A very elegant species.

Var. β, *álbidum* (Bernh. Rchb. uebers. p. 31.). ♃. H. Native of Austria, the Pyrenees, and Switzerland. A. Napéllus flore albo, Crantz. A. Napéllus φ albiflòrum, Ser. mus. helv. 1. p. 158. Flowers white, disposed in loose spikes.

Bernhardi's Aconite. Fl. June, July. Pl. 2-3 feet.

16 A. E'MINENS (Koch. ex Rchb. uebers. p. 35.) spur capitate; filaments pilose; helmet closed; lip very long, refracted; peduncles erectly spreading. ♃. H. Native of Europe. A. neomontànum, hort. paris. Flowers blue.

Eminent Aconite. Fl. June, July. Clt. 1800. Pl. 2-4 feet.

17 A. AUTUMNA'LE (Clus. ex Rchb. acon. t. 17. f. 2.) spur capitate; filaments pilose; helmet open, convex; peduncles rigidly spreading. ♃. H. Native of Europe. Rchb. ill. t. 67. A. Napéllus ε, gróssum. Ser. mus. helv. 1. p. 157. Flowers in loose panicles of a blueish-purple colour.

Autumnal Aconite. Fl. July, Aug. Pl. 3-4 feet.

18 A. PYRAMIDA'LE (Mill. dict. Rchb. uebers. p. 48. acon. t. 17. f. 2. ill. t. 68.) spur capitate; filaments pilose; helmet closed; peduncles erectly-spreading, longer than the flowers. ♃. H. Native of Thuringia, Bohemia, and Styria. A. Napéllus Leysser. A. neomontànum, Spreng. Flowers blueish-purple.

Var. β, *densiflòrum* (Rchb. uebers. p. 48.) racemes elongated, crowded, with numerous axillary small racemes. ♃. H. A. pyramidàle, true, Mill. dict.

Var. γ, *elongàtum* (Rchb. uebers. p. 48.) racemes elongated, with very few short axillary racemes.

Var. δ, *bícolor* (Rchb. uebers. p. 48.) flowers white, edged with blue. ♃. H. A. variegàtum Hortul. with A. versícolor and Stoerkiànum bícolor.

Pyramidal Aconite. Fl. July, Aug. Pl. 4 feet.

19 A. ACUMINA'TUM (Rchb. ill. uebers. p. 48.) spur capitate, filaments pilose; helmet closed, conical, beaked. ♃. H. Native of? Supposed to be a hybrid between *A. cérnuum* and *A. Napéllus*. Flowers blueish-purple. A. paniculàtum β, acuminàtum, Ser. mus. helv. 1. p. 144.

Acuminated Aconite. Fl. July, Aug. Pl. 2-4 feet.

20 A. MULTI'FIDUM (Koch. Rchb. ill. t. 70.) spur capitate; filaments pilose; helmet closed, arched; peduncles erectly-spreading. ♃. H. Native of Switzerland and Siberia. A. gigantèum Amman. A. venústum laxiflòrum virgàtum and callibótrys, Rchb. A. volùbile, Kœll. 21. A. eriostèmum, D. C. syst. 1. p. 377. A. Napéllus η, virgàtum ε, macrostàchyum, Ser. mus. helv. 1. p. 155. p. 154. Flowers blueish-purple, disposed in long beautiful spikes.

Multifid Aconite. Fl. June, July. Pl. 4 feet.

21 A. AMBI'GUUM (Rchb. ill. t. 23.) spur capitate; filaments smooth; helmet closed, hemispherical, arched, obtuse; lip obcordate. ♃. H. Native of Siberia. Leaves smooth. Racemes loose, very seldom bearing many small lateral racemes. Flowers smooth, pale blue.

Ambiguous Aconite. Fl. June, July. Pl. 2-3 feet.

† *Species not sufficiently known, belonging to section Napelloìdea.*

22 A. AMŒ'NUM (Rchb. uebers. p. 23. acon. 93. t. 14. f. 1.) peduncles smooth; spur capitate, bent. ♃. H. Native of Germany and Switzerland. A. N. 9. ampléxum, Ser. mus. helv. 1. p. 155. Flowers in loose spikes, deep blue. Bracteas short. Helmet semicircular; limb entire, clasping the lateral sepals.

Pleasing Aconite. Fl. June, July. Pl. 2-3 feet.

23 A. OLIGOCA'RPUM (Rchb. uebers. p. 24.) spur capitate, bent; peduncles smooth; capsules 2. ♃. H. Native of Styria. Flowers blue.

Few-capsuled Aconite. Fl. June, July. Pl. 1-3 feet.

24 A. ela'tum (Salisb. Rchb. uebers. p. 30.) peduncles pubescent; spur capitate, inclining; segments of leaves linear, acute. ♃. H. Native of Styria and Carinthia. A. Taúricum, Willd. spec. 2. p. 1236. A. neomontànum, Bernh. A. Napéllus ∂ grossum, Ser. mus. helv. 1. p. 157.? Flowers in loose panicled spikes, very large, blueish-purple. Segments of leaves large.

Tall Aconite. Fl. June, July. Pl. 3-4 feet.

25 A. Meye'ri (Rchb. uebers. p. 33.) peduncles pubescent; spur capitate, inclining. ♃. H. Native of Bavaria and Styria, &c. A. neomontànum, var. Schrank, Hoppe pl. exsic. A. elàtum, Meyer, fl. gött. ined. Flowers blueish-purple.

Meyer's Aconite. Fl. June, July. Clt. 1823. Pl. 2-4 feet.

26 A. Sprenge'lii (Rchb. uebers. p. 35.) spur obtuse, straight; segments of leaves blunt. ♃. H. Native of Europe. A. exaltàtum, Willd. enum. suppl. but not of Bernh. Flowers blueish-purple.

Sprengel's Aconite. Fl. June, July. Clt. 1820. Pl. 3-4 ft.

27 A. Willdeno'wii (Rchb. uebers. p. 35.) spur obtuse, straight; segments of leaves blunt. ♃. H. Native of Carniola. A. Napéllus, Willd. hort. berl. Flowers blueish-purple.

Willdenow's Aconite. Fl. Ju. Jul. Clt. 1823. Pl. 2-3 feet.

28 A. microsta'chyum (Rchb. uebers. p. 36.) spur obtuse, straight; segments of leaves blunt. ♃. H. Native of Hungary. A. Taúricum, Roch. exsic. Flowers blueish-purple.

Small-spiked Aconite. Fl. June, July. Pl. 2-3 feet.

29 A. ampliflo'rum (Rchb. uebers. p. 37.) spur obtuse, straight; segments of leaves blunt; flowers large. ♃. H. Native of Austria. Flowers blueish-purple.

Ample-flowered Aconite. Fl. June, July. Pl. 2-3 feet.

Sect. III. Callipa'ria (from καλλιπαρειος, *kallipareios*, having beautiful cheeks; flowers.) Rchb. uebers. 13. Calyx deciduous. Petals (nectaries) supine, truncate, or a little hooked, with the lip scarcely emarginate. Stamens smoothish. Capsules 3-8 erect. Helmet depressed, conical, or hemispherical. Sack of petals large. Beautiful plants with multifid leaves, blue flowers, and napiform roots.

§ 1. *Spurs of petals truncate.*

30 A. bifloʻrum (Fisch. in litt. with a figure. D. C. syst. 1. p. 380. Rchb. ill. t. 40.) Spur truncate; helmet depressed; beak drawn out. ♃. H. Native of Siberia on the Altaian mountains, and on the Sayansk mountains. A. grandiflòrum, Fisch. cat. hort. gor. 1808, p. 77. Root napiform, larger than a pea. Stem a hand high, smooth, but a little pubescent towards the top. Lower leaves on long stalks, with linear segments. Flowers usually twin, very rarely solitary or tern, sessile, pale blue, with the middle rather obscure and with yellowish edges, puberulous on the back. Ovaries 3, pubescent. Styles smooth. Stamens smooth.

Two-flowered Aconite. Fl. June, July. Clt. 1817. Pl. ½ ft.

§ 2. *Spur of petals hooked.*

31 A. semigalea'tum (Pall. herb. Rchb. uebers. 38. ill. t. 41.) Spur hooked; helmet convex, navicular, peduncles elongated. ♃. H. Native of Kamtschatka. A. delphinifòlium γ, Kamtscháticum, D. C. syst. 1. p. 380. A. Napéllus κ, semigaleatum, Ser. mus. helv. 1. p. 155. Root a tuber about the size and form of a pea. Stem ½ to 2 feet high, pubescent at the top. Leaves few, membranous, smooth. Racemes very loose. Flowers pale blue, at first pubescent, but at length becoming smooth. Pistils 5-8. Stamens smooth.

Half-helmetted Aconite. Fl. June, July. Pl. ½ to 2 feet.

32 A. delphinifòlium (D. C. syst. 1. p. 380. Rchb. uebers. p. 38. ill. t. 42.) spur a little hooked; helmet hemispherical; filaments smooth; stem slender, few-flowered. ♃. H. Native of the western coast of North America in Hedge Island, Rocky Mountains. Rchb. acon. t. 9. f. 1, 2, 3. A. delphinifòlium α, Americànum, D. C. syst. 1. p. 380. A. Napéllus α α, delphinifòlium, Ser. mus. helv. 1. p. 159. Root napiform. Stem ½ to 2 feet high, a little pubescent towards the top. Leaves smooth, deeply cut into 5 parts. Racemes loose. Flowers large, pale-blueish-purple, young ones puberulous. Pistils 4-6. Fruit smooth. A. paradóxum, Rchb.

Var. β, *speciòsum* (Rchb. uebers. p. 38.) plant taller and a little branched, many-flowered; flowers large. ♃. H. Native of Chamisso's Island.

Var. γ, *hùmile* (Rchb. uebers. p. 38.) stem humble, rather prostrate, few-flowered. ♃. H. Native of the island of St. Lawrence.

Larkspur-leaved Aconite. Fl. Ju. Jul. Clt. 1820. Pl. ½ to 2 ft.

33 A. Chamissonia'num (Rchb. uebers. p. 37. ill. t. 43.) spur a little hooked; helmet hemispherical; filaments pilose; stem humble, and is, as well as the flowers, pubescent. ♃. H. Native of the islands of Chamisso and Unalaschtka in the fissures of Rocks. Leaves smooth. Racemes loose, few, or many-flowered. Flowers large, violet. Pistils 3.

Chamisso's Aconite. Fl. June, July. Pl. 1-2 feet.

Sect. IV. Euchylòdea (from ευ, *eu*, good; χυλωδης, *chylodes*, juice; the juice of the plants belonging to this section is supposed to be harmless, and not poisonous, as in the rest of the genus.) Rchb. uebers. p. 13. Sect. V. Anabàtes, D.C. syst. 1. p. 377. Calyx deciduous. Petals (nectaries) supine or erect, inflated, somewhat hooked, gibbous. Stamens pilose or smooth. Capsules 3-5, young ones converging. Peduncles erect. Helmet depressed or high, conical or arched. Flowers blue or violet. Racemes loose. Stems twining or flexuous. Leaves multifid.

34 A. Kamtscha'ticum (Pall. Rchb. uebers. p. 39. ill. t. 15.) petals erect; gibbo continuous; filaments smooth; lip revolute; helmet closed, and is as well as the leaves pilose. ♃. H. Native of Kamtschatka. Lower leaves on long stalks. Racemes few-flowered. Flowers large, pubescent, pale-blue. Pistils 3, a little pubescent.

Var. a, normàle (Rchb. ill. t. 15.) stem hardly more than 2 feet high.

Var. β, *luxùrians* (Rchb. ill. t. 17.) plant larger in every part; bracteas very large.

Kamtschatka Aconite. Fl. June, July. Pl. 2 to 6 feet.

35 A. Ochote'nse (Rchb. illus. t. 18.) petals erect; gibbo continuous; filaments smooth; helmet hemispherico-conical, obtuse, closed; lip 2-lobed; peduncles spreading. ♃. H. Native of Siberia near Ochotskoi. Racemes loose. Flowers large, pubescent, pale-violet. Pistils 3, smooth. Leaves rather pilose?

Ochotskoi Aconite. Fl. June, July. Pl. 4 to 6 feet.

36 A. gibbíferum (Rchb. ill. t. 19.) petals with a distinct swelling. ♃. H. Native of Siberia. Leaves smooth. Racemes somewhat panicled, loose. Flowers large, smooth, pale-violet. Pistils 5, smooth.

Gibbiferous Aconite. Fl. June, July. Pl. 4 feet.

37 A. Kusnezóffii (Rchb. ill. t. 21.) petals erect; gibbo continuous; filaments smooth; helmet hemispherico-conical, beaked, closed. ♃. H. Native of Kamtschatka. Root tuberous. Leaves smooth. Racemes many-flowered, dense, and furnished with small racemes at the base. Flowers large, smooth, pale-violet. Pistils 5, smooth.

Kusnezoff's Aconite. Pl. 6 to 8 feet.

38 A. Fische'ri (Rchb. ill. t. 22.) petals erect; gibbo continuous; filaments smoothish; helmet arched, conical, gaping; peduncles ascending. ♃. H. Native of Kamtschatka. Leaves

smooth. Racemes loose, leafy. Flowers middle-sized, pale-blue, with the middle sepal fringed.

Fischer's Aconite. Fl. June, July. Pl. 4-6 feet.

39 A. Luba'rskii (Rchb. ill. t. 20.) petals erect; gibbo continuous; filaments smooth; helmet hemispherico-conical, obtuse, closed; peduncles spreading; lip somewhat orbicular. ♃. H. Native of Kamtschatka. Leaves smooth, with broad segments. Racemes loose, leafy. Flowers middle-sized, pale-blue.

Lubarsky's Aconite. Pl. 4-6 feet.

40 A. tortuòsum (Willd. enum. 1. p. 576. D. C. syst. 1. p. 378.) petals supine; beak blunt; helmet subconical; spur thick, long, abruptly pointed (neither arched, nor convolute,) filaments rather pilose. ♃. H. Native of North America, and probably of Siberia. Ser. mus. helv. 1. p. 147. t. 15. f. 28-29. A. tortuòsum, var. *α*, napellifòlium, Ser. mus. helv. 1. p. 148. Root tuberous. Leaves smooth, with narrow wedged-shaped lobes, and acute lobules. Panicle loose, bearing few-flowered branches. Flowers large, pale or deep violet. Ovaries 3-5 smooth, connivent.

Var. β, illinìtum (Ser. plant. sel. cent. 1. et mus. helv. 1. p. 148.) panicle much branched, very loose; branches and peduncles quite smooth; ovaries 3, smooth; leaves with broad cuneiform lobes, and obtuse lobules. ♃. H. Native of? A. illinìtum, Rchb. uebers. p. 54. A. neomontànum, Panz. fl. norimb. ined.

Var. γ, recógnitum (Rchb. uebers. p. 42.) ♃. H. Native of? A. volúbile, Bernh. A. volùbile and tortuòsum, Hortul. A. exaltàtum, Wenderoth. Flowers crowded or distant.

Twisted Aconite. July, Aug. Clt. 1812. Pl. 6-8 feet.

41 A. volu'bile (Pall. Willd. spec. 2. p. 1237.) petals supine; beak acuminated; helmet conical; spur hooked at the apex; filaments smooth. ♃. H. Native of Siberia in the Altaian mountains. A. ciliàre, *α* oligotrìchum, D. C. syst. 1. p. 378. prod. 1. p. 61. Root tuberous. Stem pubescent, and covered with spreading hairs, slender, twining 12-16 feet high. Panicle loose, with ascending branches, which are for the most part pendulous. Lobes of leaves pinnate, with linear lobules. Flowers smooth, middle-sized, violet. Ovaries 5. Rchb. ill. t. 25.

Twining-stemmed Aconite. Fl. July, Aug. Clt. 1799. Pl. 12-16 feet.

42 A. ma'ximum (Pall. herb. D. C. syst. 1. p. 380.) petals erect; gibbo continuous; filaments smooth; helmet hemispherico-conical, obtuse; spur short, incurved; peduncles erect. ♃. H. Native of Kamtschatka. Ser. mus. helv. 1. p. 149. t. 15. f. 31 and 32. Rchb. ill. t. 17. Stem smooth. Panicle loose, furnished with a few long distant few-flowered branches, which are pubescent with curved hairs. Leaves large, smooth. Lower bracteas like the leaves, but smaller. Flowers pubescent, pale-blue. Ovaries 3, smooth.

Largest Aconite. Fl. July, Aug. Clt. 1823. Pl. 6 feet.

43 A. villòsum (Rchb. uebers. p. 39. ill. t. 26.) petals erect; gibbo continuous; filaments smooth; helmet conical, arched, closed; spur hooked. ♃. H. Native of Siberia. Rchb. ill. t. 20. Root tuberous. Stem slender, 2-4 feet high, a little flexuous, villous, with spreading hairs, and furnished with ascending branches towards the top. Young leaves villous, adult ones hardly so. Racemes furnished with small lateral branches, forming as it were a small pyramidal panicle. Flowers violet.

Var. β, flexuòsum (Rchb. ill. t. 27.) stem slender, 4-8 feet high, densely villous, a little twining, branched, with the branches rather pendulous; partitions of leaves less jagged than in the species. Racemes loose, panicled, many-flowered. ♃. H.

Villous Aconite. Fl. June, Aug. Pl. 2 to 8 feet.

44 A. fla'ccidum (Rchb. uebers. p. 39. ill. t. 29.) petals erect; gibbo continuous; filaments smooth; helmet high, arched, inclining forwards, gaping; spur hooked at the apex. Peduncles erectly spreading, pubescent. ♃. H. Native of Siberia. A. ciliàre *β*, polýtrichum, D. C. syst. 1. p. 378. Ser. mus. helv. 1. p. 149. t. 15. f. 30. A. ciliàre, Deless. icon. sel. 1. t. 65. Stem slender, villous, branched a little towards the apex. Young leaves ciliated as well as the petioles. Racemes branched, few-flowered. Flowers large, pubescent, pale-violet. Pistils 5.

Flaccid Aconite. Fl. July, Aug. Clt. 1822. Pl. 6 feet.

Sect. V. Corythæòla (from *κορυθαιολος, korythaiolos*, ornamented with a variegated helmet.) Rchb. uebers. p. 14. Sect. III. Cámmarum, D. C. syst. 1. p. 347. Calyx deciduous. Petals (nectaries) supine, somewhat hooked. Stamens pilose. Capsules 3-5, converging. Helmet arched or conical, variegated. Young peduncles nodding. Root tuberous. Lobes of leaves trapeziform, pinnate. Helmet of flower usually variegated with white or blue.

45 A. palmatífidum (Rchb. uebers. p. 48.) filaments smooth; helmet arched. ♃. H. Native of the Carpathian mountains. A. Breiteriànum and Ottonianum, Rchb. uebers. A. Taúricum latifolium, Rochel. A. speciòsum, Otto, cat. hort. berl. Deless. icon. sel. 1. t. 64. Ser. mus. helv. 1. p. 147. t. 15. f. 28. 27. Flowers blue, variegated with white.

Palmatifid-leaved Aconite. Fl. July, Aug. Pl. 2 to 4 feet.

46 A. Stoerkia'num (Rchb. uebers. p. 49. ill. t. 71.) stamens pilose; helmet arched. ♃. H. Native of the Alps of Europe. A. Napéllus, Stoerk. Sturn. deutsch. fl. heft. 6. with a figure. A. neomontànum, Willd. A. mèdium, Schrad. hort. gött. but not of Willd. enum. A. intermèdium, D. C. syst. 1. p. 374. but not of Gaudin. nor A. intermèdium hýbridum, Hoppe.—Trag. stirp. p. 248.—Cord. 3. p. 245.—Sturn. fl. germ. 2. t. 6. good. —Barrel. icon. t. 610.—Weinm. phyt. t. 21. f. d. Plant quite smooth. Panicle loose, with ascending stiff branches. Flowers blue. Ovaries 3-5-7, smooth.—A. intermèdium var. *α*. glàbrum, Ser. mus. helv. 1. p. 152. f. 39. 40. 49.

Var. β, laxiflòrum (Rchb. uebers. p. 49.) racemes simple, elongated, loose. ♃. H.—Black. 561. Flowers blue.

Var. γ, bícolor (Rchb. uebers. p. 49.) plant quite smooth; flowers white, variegated with purple. ♃. H. A. mèdium *β*. Schrad. hort. gött. A. intermèdium *β*, versícolor, Ser. mus. helv. 1. p. 152. A. versícolor, Rchb. uebers. p. 50. Lodd. bot. cab. 794. A. variegàtum, Bernh.

Var. δ, latílobum; lobes of leaves broad; flowers blue. ♃. H. A. Taúricum, Rœm. in herb. D. C. A. intermèdium *γ*, latílobum, Ser. mus. helv. 1. p. 152.

Var. ε, pubéscens; stem and peduncles puberulous; flowers blue. A. intermèdium *δ*, pubéscens, Ser. mus. helv. 1. p. 152.

Stoerck's Aconite. Fl. June, Aug. Clt. 1820. Pl. 3 to 4 feet.

47 A. exalta'tum (Bernhardi. ex specim. hort. gœtt. 1818.) stamens pilose; helmet conical. ♃. H. Native of the Pyrenees? Rchb. ill. t. 72. Ser. mus. helv. 1. p. 151. t. 15. f. 37, 38. A. hamàtum and decòrum, Rchb. uebers. A. uncinàtum, Bernh. cat. hort. erf. A. stríctum, Willd. enum. suppl. but not of Bernh. A. rostràtum, Bernh. not D. C. A. mèdium, Willd. enum. suppl. Panicle loose, with ascending stiff branches. Beak elongated, ascending. Spur thick, incurved. Ovaries 3-5, smooth.

Exalted Aconite. Fl. July. Clt. 1819. Pl. 6 feet.

Sect. VI. Toxicoidea (a name applied to this section on account of the plants it contains agreeing in character with *A. Tóxicum*, from *τοξικον, toxicon*, poison; qualities of plants.) Rchb. uebers. p. 14. Sect. IV. Cámmarum, D.C. syst. 1. p. 374. Calyx deciduous. Petals (nectaries) supine, capitate or a little hooked. Stamens smooth. Capsules 3-5, erectish. Helmet arched or conical. Roots tuberous. Lobes of leaves trapesiform, pinnate. Flowers blue or violet, rarely flesh-coloured.

§ 1. *Helmet arched.*

48 A. tóxicum (Rchb. uebers. p. 43. ill. t. 37.) helmet large, arched, with a blunt beak: spur hooked. ♃. H. Native of Transylvania. A. neomontànum, Baugm. transylv.? A. Cámmarum, Hoppe. herb. Stem flexuous, almost simple. Leaves smooth. Racemes loose, pubescent. Flowers large, violet, pubescent. Ovaries 5.

Poison Aconite. Fl. June, Aug. Clt. 1825. Pl. 2 feet.

49 A. cérnuum (Koelle. acon. 17. Willd. spec. 2. 1237. Rchb. ill. t. 33.) helmet large, arched, beaked. ♃. H. Native of the south of Europe in many parts. Lodd. bot. cab. 810. A. Cámmarum, Schleich. cat. Gaud. and Vill. A. flexicaúle, Hoppe and Hornsch. pl. sel. A. cámmarum α, Lin. A. cérnuum and refléxum, Rchb. uebers. p. 43. A. Wilmetiànum and húmile, Delarb. fl. auv. ed. 2. p. 499. A. paniculàtum, var. β, D. C. syst. 1. p. 375. A. pan. δ, flexicaúle, Ser. mus. helv. 1. p. 145. A. pan. Tomaséllì, Lam. and D. C. fl. fr. ed. 3. vol. 5. p. 918. A. variegàtum, Seguier, pl. ver. A. neomontànum, Baugm. transyl. 1857.—Cam. epit. 852.—Clus. hist. 2. p. 97. f. 1.—J. Bauh. hist. 3. p. 658.—Chabr. sciagr. 531. f. 6. Stem usually flexuous. Leaves smooth. Racemes nodding, loose, pubescent, with spreading branches rising from the axils of the leaves. Flowers largeish, violet, rarely blue or reddish, puberulous or smooth. Pistils usually 5.

Var. β, *pauciflòrum* (Rchb. uebers. p. 44.) racemes terminal, few-flowered, sub-corymbose; peduncles equal in length with the flowers. ♃. H. Native on mounts Pennino and Cenis. A. paniculàtum var. α, Pennìnum, Ser. mus. helv. 1. p. 144.

Var. γ, *laciniàtum* (Rchb. uebers. p. 44.) peduncles equal in length to the flowers; branches spreading; leaves finely jagged with long acuminated segments; ovaries smoothish. ♃. H. Native of Calabria. Ser. mus. helv. 1. p. 145.

Var. δ, *patentíssimum;* stem flexuous; helmet conical, inflexed; beak short. Native of Siberia. A. paniculàtum γ, D. C. syst. 1. p. 375. A. cèrnuum flexicaúle, Rchb. A. paniculàtum ζ, patentí'ssimum, Ser. mus. helv. 1. p. 145.

Drooping Aconite. Fl. Jul. Aug. Clt. 1800. Pl. 2 to 4 feet.

§ 2. *Helmet conical.*

50 A. mo'lle (Rchb. uebers. p. 47. ill. t. 31.) helmet irregularly-conical, obtuse; front erect. ♃. H. Native of? A. cérnuum var. α, laxiflòrum, Rchb. uebers. p. 43. A. paniculàtum δ, flexicaúle, Ser. mus. helv. 1. p. 145. Leaves smooth. Racemes panicled, pubescent. Flowers large, puberulous, violet. Ovaries usually 3.

Soft-panicled Aconite. Fl. June, Aug. Clt. Pl. 2 to 6 feet.

51 A. panicula'tum (Lam. fl. fr. ed. 1. suppl. 1224. D. C. syst. 1. p. 375.) helmet conical, beaked; front sinuated, ♃. H. Native of France and Switzerland. Rchb. ill. t. 32. A. Stóerckii Borkaus. spec. 18. A. Cámmarum, All. ped. no. 1500. A. parviflòrum, Rchb. uebers. p. 46. A. hebégynum, D. C. syst. 1. p. 376. exclusive of the synonyms. Stem pubescent towards the top. Leaves smooth. Panicle terminal, much branched, loose or contracted, more or less pubescent. Flowers largeish, violet. Ovaries 3, seldom 5, puberulous?

Var. β, *Stoerkiànum* (Ser. mus. helv. 1. p. 145.) stem flexuous; panicle loose, weak; beak short. ♃. H. Native of Switzerland. A. Napéllus, officinàlis, Störk. libel. de stram. &c. p. 69. This is said to be the plant which Baron Stoerck made use of in medicine, see A. No. 11.

Panicled Aconite. Fl. June, Sep. Clt. 1815. Pl. 2 to 3 feet.

Sect. VII. Ca'mmaroi'dea (applied to this section on account of the plants it contains agreeing in character with *A. cámmarum*, from *cammarum*, a crab, lobster, or crawfish; because the superior part of the flower very much resembles the recurved tail of a crawfish.) Rchb. uebers. p. 14. Sect. IV. Cámmarum and V. Anabàtes, D. C. syst. 1. p. 374. 377. Calyx deciduous. Petals (nectaries) erect, clavated-hooked. Capsules usually 5 (rarely 3-4) erect, fringed at the suture. Stamens smooth. Helmet conical. Lobes of leaves trapesiform, pinnate. Flowers violet or blue, seldom white or variegated.

§ 1. *Helmet with a middle sized beak.*

52 A. Ca'mmarum (Jacq. aust. 5. t. 224.) helmet arched-conical; beak streached. ♃. H. Native of Austria, Switzerland, Hungary, &c. &c. A. rostrátum β, Jacquiniànum, Ser. mus. helv. 1. p. 142. Racemes somewhat corymbose few-flowered; pedicels smooth. Flowers large, pale-blue or violet. Ovaries 3, smooth. For the derivation of cámmarum see Section VII.

Var. α, *símplex* (Rchb. uebers. p. 52.) stem simple. ♃. H. Native of Austria.—Barrel. p. 97. no. 873. t. 610. Flowers blue.

Var. β, *ramòsum* (Rchb. uebers. p. 52.) stem branched. ♃. H. Native of Switzerland in the Alps of Bern. Jacq. aust. 5. t. 424. Hoffm. fl. germ. t. 8. Peduncles and ovaries smooth. A. lævigàtum, Schleicher. A. Itálicum, Tratt.

Var. γ, *mutábile* (Rchb. uebers. p. 52.) lower peduncles very long; colour of flower changeable. ♃. H. Native of Bavaria. A. Cámmarum var. Schrank.

Var. δ, *grácile* (Rchb. ill. t. 7. uebers. 55.) stem slender; racemes loose. ♃. H. Native of Dauphiny, Italy, Bohemia, &c. Leaves smooth. Flowers large, pale-blue or violet.

Var. ε, *Judenbergénse* (Rchb. ill. t. 8.) stem firm; racemes somewhat contracted. ♃. H. Native of Styria about Judenberg and the Alps of Switzerland. A. Cámmarum, Lam. ency. 1. p. 33. Schleich. cat. 1821. A. laciniòsum, Schleich. cat. 1821. A. rostràtum var. α, Judenbergénse, Ser. mus. helv. 1. p. 142. A. Bernhardiànum, Wallr. Sched. crit. 1. p. 250. Flowers large, pale-blue or with a white base. Ovaries 3, rarely 4-5.

1. *Judenbergénse var. pílipes* (Rchb. ill. t. 8. f. 2.) peduncles and ovaries pilose. ♃. H. Native of Switzerland and the Carpathian mountains. A. Cámmarum, Wahl. fl. carp. no. 533. Helmet inclined. A. rostràtum var. γ, pilosiúsculum, Ser. mus. helv. 1. p. 142.

Var. ζ, *latiflòrum* (Ser. mus. helv. 1. p. 142.) helmet conical, dilated, with an inclined scarcely prominent beak. ♃. H. Native in the Alps of Bern in Switzerland.

Var. η, *macránthum;* flowers large, violet. ♃. H. Native of Salzburg. A. macrànthum, Rchb. uebers. p. 51. ill. t. 39. A. Cámmarum var. grandiflòrum, Braune.

Crawfish or Purple Aconite. Fl. June, Sep. Pl. 1 to 4 feet.

§ 2. *Helmet with a drawn-out beak.*

53 A. lasioca'rpum (Rchb. uebers. p. 55.) petals (nectaries) erect; capsules hairy. ♃. H. Native of Hungary. The character of this plant is not sufficiently known.

Hairy-fruited Aconite. Fl. June, July. Pl. 2 to 4 feet.

54 A. produ'ctum (Rchb. uebers. t. 38. ill. t. 38.) helmet straight, irregularly convex-conical, drawn out. ♃. H. Native of Siberia and Kamtschatka, Ser. mus. helv. 1. p. 150. t. 15. f. 33, 34. Rchb. acon. p. 75. t. 7. f. 3. A. delphinifòlium β, Sibíricum, D. C. syst. 1. p. 380. A. grandiflòrum, Pall. herb. Stem about a foot high, few-leaved. Leaves on long stalks, with 3-parted lobes. Racemes few-flowered, loose, pubescent. Flowers violet, puberulous. Ovaries 4-5 pubescent.

Drawn-out-beaked Aconite. Pl. 1 foot.

55 A. rostra'tum (Bernh. monog. ined. Rchb. uebers. p. 56. ill. t. 11.) helmet bending forward (compressed with vertex obliquely reflexed); beak stretched out. Lodd. bot. cab. 208. Ser. mus. helv. 1. p. 141. t. 15. f. 16-17. ♃. H. Native of Switzerland and Styria. A. alpìnum, Mill. dict. A. Cámmarum, Lam. dict. 1. p. 38. A. lùridum, Sal. prod. 375.

Panicle rather loose. Flowers violet. Helmet conical, elongated, abruptly mucronate in front. Spur thick depressed globose. Ovaries 3, rarely 4-5, smooth or rather pilose. There are varieties with broader and narrower leaves.

Var. β, álbum; flowers white or suffused with blue lilac or violet. ♃. H. Native of Switzerland or the Levant. A. álbum, Ait. hort. kew. ed. 1. vol. 2. p. 123. A. lævigàtum, Schleich. cat. ?

Beaked Aconite. Fl. June, Aug. Clt. 1752. Pl. 1 to 2 ft.

56 A. nasu'tum (Fisch. in litt. Rchb. uebers. p. 56. ill. t. 9, 10.) helmet conical, bending forward; beak short. ♃. H. Native of Caucasus and North West America on a mountain near the source of Wallawalli River, a branch of the Columbia. A. Cámmarum, Bieb. fl. taur. and suppl. no. 1054. A. gibbòsum, Ser. mus. helv. 1. p. 141. t. 15. f. 14-15. Panicle contracted, quite smooth. Flowers violet. Spur elongated, arched. Lobes of leaves broad. Ovaries usually 3.

Great-nosed Aconite. Fl. June, July. Clt. 1818. Pl. 3 feet.

57 A. variega'tum (Lin. spec. 751.) helmet bent forward, inflated; beak ascending. ♃. H. Native of middle Europe, in the Alps, Rchb. ill. 34. A. hùmile, Sal. prod. p. 375.—Clus. hist. 2. p. 98. f. 1.—Ger. herb. 971. f. 2.—Lob. icon. 678. f. 2. Stem erect, branched, smooth, a little flexuous. Lower leaves on long stalks, upper ones sessile, smooth, thickish. Racemes panicled, loose. Flowers large, blue, smooth. Ovaries 5, smooth.

Var. α, pauciflòrum (Ser. mus. helv. 1, p. 140.) helmet straight; flowers pale-blue.—Clus. hist. 2. p. 98. f. 1.

Var. β, bícolor; helmet straight; flowers white, edged with blue or lilac. ♃. H. A. variegàtum, Schrad. hort. gœtt. Mœnch. A. rhynchánthum β, bícolor, Rchb. uebers. p. 56. A. leucánthum β, bícolor, Rchb. ueber. p. 55.

Var. γ, pallidiflòrum (Ser. mus. helv. 1. p. 140.) helmet inclined; flowers white, variegated with blue. A. variegàtum, Lin. spec. 751. A. variegàtum β, bícolor, Rchb. uebers. p. 58.

Var. δ, cærùleum (Ser. mus. helv. 1. p. 140.) helmet inclined; flowers blue. ♃. H. A. Cámmarum, Schleich. cat. 1821. A. glàbrum. D. C. syst. 1. p. 379.

Var. ε, angustílobum (Ser. mus. helv. 1. p. 140.) helmet inclined; lobes of leaves very narrow; flowers blue.

Var. ζ, albiflòrum (Ser. mus. helv. 1. p. 140.) helmet straight; flowers small, white. ♃. H. A. leucánthum, Richb. uebers. p. 55. A. álbum, Mœnch and Hortul. A. Japónicum, Hortul.

Var. η, grandiflòrum (Ser. mus. helv. 1. p. 140.) helmet large; flowers blue. ♃. H. A. variegàtum. D. C. herb. sent to him by Bernhardi.

Var. θ, rhynchánthum (Rchb. uebers. p. 56.) helmet somewhat conical, falcately-navicular. ♃. H. A. variegàtum η, falcatum. Ser. mus. helv. 1. p. 141. Flowers blue.

Var. ι, hùmile; racemes simple, few-flowered. ♃. H. A. rhynchánthum γ, humile. Rchb. uebers. p. 56.

Var. κ, bulbíferum (Rchb. uebers. p. 55.) bulbs in the axils of the leaves. A. Napéllus δ δ, bulbíferum. Ser. mus. helv. 1. p. 160.

Var. λ, mixtum (Rchb. uebers. p. 61,) flowers mixed with blue and white.

Variegated Aconite. Fl. Aug. Clt. 1597. Pl. 1 to 6 feet.

58 A. Japo'nicum (Thunb. fl. jap. 231.) helmet exactly conical, abruptly mucronate; beak acute, straight. ♃. H. Native of Japan, where it is called *So-Huso*. Stem round, smooth. Leaves stalked, trifid; lateral lobes bifid, middle lobe trifid, all blunt and deeply toothed. Panicle loose, with ascending branches. Ovaries 3. Plant quite smooth. Ser. mus. helv. 1. p. 146. t. 15. f. 22 and 23.

Var. α, cárneum (Ser. pl. sel. cent. 1. and mus. helv. 1. p. 146.) flowers flesh-coloured. A. álbum, D. C. syst. 1. p. 377. ?

Var. β, cærùleum (Ser. mus. helv. 1. p. 146.) flowers blue. A. glàbrum, D.C. syst. 1. p. 379. ?

Japan Aconite. Fl. July, Sep. Clt. 1790. Pl. 6 feet.

59 A. uncina'tum (Lin. spec. 750.) helmet regularly conical, compressed. ♃. H. Native of North America on the high mountains of Virginia and Carolina in swamps and by the sides of rivulets. Sims, bot. mag. t. 1119. Rchb. ill. t. 35 and 36. A. scándens, Muhl. Stem with branches rising from the axils of the leaves. Racemes loose, rather umbellate at the apex, very rarely panicled. Flowers middle sized or large, of a lilac colour, smooth, with a somewhat spiral inclined spur. Ovaries 5, villous.

Var. α, Linnæànum (Ser. mus. helv. 1. p. 147.) helmet pointed, hooked. ♃. H. Native near Philadelphia. A. uncinàtum, Lin. spec. 750. var. α. D. C. syst. 1. p. 379.

Var. β, Michauxiànum (Ser. mus. helv. 1. p. 147. t. 15. f. 24 and 25.) helmet awnless in front. ♃. H. A. uncinàtum, Mich. fl. bor. amer. 315. Sims, bot. mag. t. 1119. A. uncinàtum β. D. C. syst. 1. p. 379.

Hooked-helmetted Aconite. Fl. July, Aug. Clt. 1768. Pl. 4 to 8 feet.

† *Species doubtful whether they belong to the present section.*

60 A. palma'tum (D. Don. prod. fl. nep. p. 190.) leaves 5-cleft, palmate, smooth, paler beneath; segments cuneated, deeply lobed and toothed; stem simple, smooth. ♃. H. Native of Nipaul at Gosaingsthan. Stem about the thickness of a common writing quill. Leaves on long stalks. Flowers not seen.

Palmate-leaved Aconite. Pl. 2 feet.

61 A. fe rox (Wall. in litt. D. C. prod. 1. p. 64.) helmet convex, curved, on short stipes; spur thick, inclined; lip very narrow, divaricate; stem simple. ♃. H. Native of Nipaul. A. viròsum, D. Don, prod. fl. nep. p. 190. Stem clothed with brown tomentum. Leaves many-parted, villous beneath, with revolute edges; cauline leaves almost sessile, 3-4-parted; segments pinnatifid; lobes linear, stiff, obtuse, entire, or toothed. Ovaries 3, villous. The root of this species is very poisonous. Flowers shewy violet in loose woolly racemes. Ser. mus. helv. 1. p. 160. t. 15. f. 43, 44.

Ferocious Aconite. Pl. 2 to 6 feet.

Sect. VIII. Lyco'ctonoi'dea (applied to this section on account of the plants it contains agreeing in character with *A. Lycóctonum*, from λυκος, *lykos*, a wolf; κτεινω, *kteino*, to kill; because the *A. Lycóctonum* was used to poison wolves, before a more efficacious method was discovered). Rchb. uebers. p. 14. Sect II. Lycóctonum. D. C. syst. 1. p. 367. Calyx deciduous. Petals (nectaries) oblique; spur clavate, straight, arched, hooked, or spiral. Capsules 3, adult ones erect, or diverging. Stamens smoothish. Helmet conical or cylindrical. Root tuberous, emitting numerous fibres. Lobes of leaves wedge-shaped, pinnate, rarely bipinnate. Flowers cream-coloured, white, or livid-blue.

§ 1. *Spur clavate, nearly straight. Young capsules silky-pubescent.*

62 A. barba'tum (Patrin. in Pers. ench. 2. p. 83) spur straightish, obtuse; bottom of helmet conical; middle sepals densely bearded. ♃. H. Native of Siberia. Deless. icon. sel. 1. t. 64. Rchb. ill. t. 45. Ser. mus. helv. 1. p. 138. t. 15. f. 10 and 11. A. boreàle. Ser. ex Rchb. uebers. p. 62. A. squarròsum. Lin. spec. 751. D. C. syst. 1. p. 368. Stem pubescent. Leaves opaque, with the lobes divided into many linear segments, on long stalks which are villous as well as the nerves. Racemes dense, puberulous, with a few axillary racemules. Flowers middle-sized, cream-coloured. Ovaries 3, silky. Sweet, fl. Gard. 164.

Bearded Aconite. Fl. Jul. Aug. Clt. 1807. Pl. 2 to 6 ft.

63 A. Gmeli'ni (Rchb. uebers. p. 63. ill. t. 46.) spur straight, obtuse; bottom of helmet rounded, cylindrical. ♃. H. Native

of Siberia. A. hìspidum, D. C. syst. 1. p. 367. A. pyrenàicum, Koelle acon. A. nítidum, Fisch. A. barbàtum β, hìspidum, Ser. mus. helv. 139.—Gmel. sib. 4. p. 188. t. 81. Stem villous below, but almost smooth at the top. Leaves on long stalks, villous beneath and shining above, with the lobes divided into narrow segments. Flowers middle-sized, cream-coloured. Ovaries 3, silky. Racemes very long, puberulous, at length becoming loose.

Gmelin's Aconite. Fl. June, Aug. Clt. 1817. Pl. 2 feet.

64 A. Lepta'nthum (Rchb. ill. t. 64.) spur straight, blunt; bottom of helmet conical, elongated-attenuated; capsules ventricose. ♃. H. Native of Dauria on the Baikal Mountains. Root a branched rhyzoma. Stem slender, villous at the base, but puberulous at the top. Leaves on long, flattish, villous stalks. Racemes elongated, loose, furnished with a few small axillary racemules. Flowers middle-sized, yellow, canescent when in bud. Ovaries silky-puberulous.

Slender-flowered Aconite. Fl. Jul. Aug. Clt. 1820. Pl. 2 to 4 ft.

§ 2. *Spur clavate, arched, or hooked. Young capsules silky-pubescent.*

65 A. pa'llidum (Rchb. uebers. p. 65. ill. t. 50.) spur arched; bottom of helmet conico-cylindrical; middle sepals covered with short hairs. ♃. H. Native of Russia in the government of Rasan, in groves at Kurbatowa. A. ochroleùcum, hort. hal. Root large, branched, fibrous. Stem puberulous, truly canescent at the apex. Leaves 5-7-parted, deep green, the first ones are puberulous above. Racemes puberulous, rather loose with a few ascending racemules. Flowers large, cream-coloured, ovaries 3, puberulous.

Var. β, *melóctonum* (Rchb. uebers. p. 65.) panicle large, with diverging branches; flowers cream-coloured, loose, pubescent; germens villous. ♃. H. Native of Piedmont. A. Lycóctonum, All. pedm, no. 1498. Balb. fl. pedm. p. 87. A. Lycóctonum η, laxiflòrum, D. C. syst. 1. p. 369. Ser. mus. helv. 1. p. 135.

Pale-flowered Aconite. Fl. July, Aug. Pl. 2 to 4 feet.

66 A. lasio'stomum (Rchb. ill. t. 49.) spur arched; bottom of helmet conical; middle sepals densely bearded. ♃. H. Native of Russia near a town called Modyn in the government of Kaluga. Stem puberulous, or densely and softly villous. Leaves with villous petioles and pubescent veins. Racemes elongated, loose, puberulous, furnished with a few racemules. Flowers largeish, cream-coloured, or yellow. Ovaries 3, silky-villous.

Hairy-mouthed Aconite. Fl. Ju. Jul. Clt. 1820. Pl. 1 to 2 ft.

67 A. disse'ctum (Tauch. in cat. hort. Rchb. ill. 48.) spur arched; bottom of helmet conical, bending down in a short front. ♃. H. Native of Siberia. Stem puberulous? Leaves like those of *A. barbàtum*, but the partitions are broader. Racemes elongated, dense, puberulous, furnished with a few spreading axillary racemules. Flowers largeish, cream-coloured. Ovaries 3, silky.

Dissected-leaved Aconite. Fl. June, July. Pl. 1 to 2 feet.

68 A. Hamilto'nii; leaves 5-parted, smooth, and pinnatifid, with linear acute segments; stem simple, smooth. ♃. H. Native of Nipaul at Gosaingsthan. A. disséctum, D. Don, prod. fl. nep. p. 197. Root tuberous. Stem about the thickness of a crow's quill. Flowers not seen. Very like *A. Pyrenàicum*, in habit it is doubtful whether it may belong to this section.

Hamilton's Aconite. Pl. ½ to 1 foot.

§ 3. *Spur spiral. Young capsules silky-pubescent.*

69 A. Lama'rkii (Rchb. ill. t. 40.) spur spiral; helmet constricted, clavate. ♃. H. Native of the Pyrenees. A. Pyrenàicum. Lam. dict. 1. p. 33. D. C. syst. 1. p. 368. A. Lycóctonum, var. β, Pyrenàicum. Ser. mus. helv. 1. p. 133. D. C. prod. 1. p. 57. Stem smooth. Leaves large, 7-9-parted, with the partitions unequally cleft. Racemes long, cylindrical, crowded, branched at the base. Flowers cream-coloured, pubescent; sepals about equal in length. Ovaries 3, villous.

Var. β, *Pennìnum;* pubescent; flowers large, spiked, or somewhat panicled, yellow; helmet conical; beak large; ovaries 3-5, villous. ♃. H. Native of Mount Pennino. A. Lycóctonum δ, Pennìnum. Ser. pl. sel. cent. 1. and mus. helv. 1. p. 134. D. C. prod. 1. p. 57.

Var. γ, *pubérulum;* flowers spiked, or somewhat panicled, yellow; helmet large; stem leaves and flowers clothed with horizontal hairs. ♃. H. Native of Mount Cenis. A. Lycóctonum ε, pubérulum. Ser. mus. helv. 1. p. 134. D. C. prod. 1. p. 58.

Var. δ, *laxiflòrum;* panicle ample, with diverging branches; flowers loose, pubescent; ovaries villous; lobes of leaves somewhat quadrately divaricate.

Lamark's Aconite. Fl. Jul. Aug. Clt. 1800. Pl. 2 to 3 ft.

§ 4. *Spur arched or hooked. Capsules smooth.*

70 A. Pyrena'icum (Lin. spec. 751.) spur hooked; bottom of helmet cylindrical-rounded. ♃. H. Native of the Pyrenees and Siberia. Rchb. ill. t. 48. A. squarrósum, Lin. herb. D. C. syst. 1. p. 368. A. Sibíricum, Poir. suppl. 1. p. 113. Stem pubescent at the base, but smooth above. Leaves parted almost to the base with pinnatifid lobes, rather hispid beneath, but smooth above, on long stalks. Racemes elongated, dense, puberulous. Flowers largeish, yellow. Ovaries 3, smooth.

Pyrenean Aconite. Fl. June, Aug. Clt. 1739. Pl. 2 feet.

71 A. orienta'le (Mill. dict. Rchb. ill. t. 29.) spur arched; helmet cylindrical, straight, elongated; beak drawn out, incumbent. ♃. H. Native of Georgia, Persia, and Caucasus. A. ochroleùcum, Willd. spec. 2. p. 1233. Pall. fl. ross. 1. t. 12. Root a branched rhyzoma. Stem puberulous. Leaves with the lobes distinct beyond the middle, deeply serrated, on long channeled petioles, young ones pubescent, adult ones only at the nerves. Racemes ½ to 2 feet long, dense, many-flowered, with numerous, small, lateral racemules, forming a pyramid. Flowers large, cream-coloured, or white, suffused with yellow. Sepals edged with yellow hairs on the inside.

Var. β. *strictìssimum* (Rchb. uebers. p. 69.) flowers numerous, yellow; helmet cylindrical; spur arched; ovaries smooth; stem quite upright. ♃. H. Native of Bairont.

Var. γ, *altìssimum* (Mill. dict. no. 2.) flowers panicled, numerous, yellow; helmet large, somewhat ventricose at the apex. ♃. H. Native of Germany and Switzerland. A. macrophyllum, Hortul. A. Lycóctonum, var. altíssimum, D. C. syst. 1. p. 368. Leaves large, more or less dissected.

Var. δ, *pubérulum;* hairs straight, spreading. A. galeàtum, Stev. in herb. D. C.

Oriental Aconite. Fl. July, Aug. Clt. 1794. Pl. 4 to 8 feet.

72 A. myo'ctonum (Rchb. uebers. p. 68. ill. t. 51.) spur subannular and somewhat refracted; bottom of helmet cylindrical rounded, scarcely higher than the diameter of the aperture; beak short, inflexed. ♃. H. Native of Thuringia and France. A. ægóphonum, Rchb. ueber. p. 68. A. intermèdium hýbridum, Hoppe. A. perniciòsum, Rchb. uebers. p. 68. are hardly varieties. A. Monauénse, Smidth. Stem smoothish below, but covered with yellowish pubescence above. Racemes furnished with lateral racemules. Flowers small, pale yellow. Ovaries 3, smooth.

Mousebane Aconite, Fl. July, Aug. Pl. 1 to 3 feet.

§ 5. *Spur spiral. Capsules smooth, but in some of the varieties of A. vulpària they are pubescent.*

73 A. vulpa'ria (Rchb. uebers. p. 70. ill. t. 56, 57, and 58.) spur spiral; helmet cylindrical, large; beak streached out, acute. ♃. H. Native of the Cevennes. A. Lycóctonum β, glabriflòrum, D. C. syst. p. 369. A. Lyc. γ, grandiflòrum, Ser. mus. helv. 1. p. 134. A. réctum, Bernhardi ex Schleich. A. lupícida, therióphonum, Rchb. ueber. These two last are hardly varieties. Stem smooth, or a little pubescent. Leaves 3 or 5-lobed, ciliated. Racemes crowded, furnished with lateral racemules. Flowers pale yellow, smooth. Ovaries 3, smooth.

Var. β, phthòra (Rchb. uebers. p. 71.) flowers yellow. ♃. H. Native of Hungary. A. Lycóctonum, Rochel.

Var. γ, cynóctonum (Rchb. uebers. p. 73.) flowers panicled, numerous, yellow; stems and flowers smoothish. ♃. H. Native of Thuringia. A. Lycóctonum, Leysser.—Blackw. t. 563.

Var. δ, galéctonum (Rchb. uebers. p. 67.) flowers yellow. Capsules pubescent. ♃. H. Native of Hungary.

Vàr. ε, tragóctonum (Rchb. uebers. p. 70.) flowers yellow, panicled; capsules smooth. ♃. H. Native of Carinthia. A. pyramidàle, Hoppe.

Var. ζ, rubicúndum (Fisch. in litt. Ser. mus. helv. 1. p. 135. D.C. prod. 1. p. 58. Lycóctonum, var. κ, rubicúndum) flowers panicled, livid-violet, variegated with yellow; helmet conico-cylindrical, compressed; flowers and peduncles villous. Ovaries pilose, elongated. ♃. H. Native of Siberia.

Var. η, Carpàthicum (Ser. mus. helv. 1. p. 136. Lycóctonum, var.) flowers panicled, of a lurid purple colour, sometimes variegated with yellow; helmet conico-cylindrical, compressed; stems and peduncles smooth; leaves profoundly cut. ♃. H. Native of the Carpathian mountains. A. septentrionàle β, Carpáthicum, D. C. syst. 1. p. 370. Sims, bot. mag. t. 2196. A. austràle, Rchb. ueber. p. 71.

Var. ϑ, septentrionàle (Willd. spe. 2. p. 1235.) flowers panicled, blue; helmet conico-cylindrical, compressed; flowers and peduncles villous; ovaries smooth or pilose? ♃. H. Native of Lapland, Norway, and Siberia. A. Lycóctonum μ, septentrionàle, Ser mus. helv. 1. p. 136.

Var. ι, Moldávicum (Haquet. Rchb. uebers. p. 67.) flowers panicled, violet; helmet cylindrical, compressed; ovaries silky-villous. ♃. H. Native of Moldavia and Bohemia.

Fox-bane Aconite. Fl. Jul. Aug. Clt. 1800. Pl. 1-3 ft.

74 A. exce'lsum (Rchb. ill. t. 53.) spur spiral; bottom of helmet clavate, and with the beak elongated; middle sepals very short. ♃. H. Native of Russia near Moscow in shady groves. Stem slender, 6-8 feet high or more, furrowed, puberulous. Leaves large, thin, a little pubescent, smoothish above. Racemes very long, loose, many-flowered. Flowers large, of a livid violet-colour. Ovaries 3, smooth?

Tall Aconite. Fl. July, Aug. Pl. 6 to 8 feet.

75 A. thely'phonum (Rchb. uebers. p. 73. ill. t. 54.) spur spiral; bottom of helmet conical-elongated. ♃. H. Native of Europe, particularly in Austria, Bavaria, Transylvania, and Switzerland, &c. A. réctum zoóctonum, and Lycóctonum, Rchb. uebers, p. 65, 69, and 73. A. lupària, Rchb. uebers. 74? A. alièнum, Rchb. 73.? A. lagóctonum, Rchb. ueber. 71. A. arctóphonum, Rchb. uebers. 71. A. Lycóctonum, Elwert, fasc. pl. Baruth. D. C. syst. 1. p. 369. and other authors, but not of Lin. Gært. fruct. 1. p. 311. t. 65. A. Pyrenàicum and réctum, Balbis. A. Lycóctonum, var. α, vulgàre, Ser. mus. helv. 1. p. 132. t. 15. f. 5, 6. 4. 8. Stem ½ to 6 feet pubescent, with yellow hairs, hispid at the base. Leaves 7-parted, ciliated. Racemes loose, furnished with a few axillary racemules. Flowers large, yellow, pubescent, or smooth. Ovaries 3, smooth, rarely pubescent.

Var. β, latiflòrum, plant smoothish; flowers spiked or panicled, yellow; helmet short and broad; hairs of peduncles arched; ovaries smooth. ♃. H. Native on the Alps of Bern. A. Lycóctonum θ, latiflòrum, Ser. mus. helv. 1. p. 135. D.C. prod. 1. p. 58.

Var. γ, ramosíssimum; stem much branched, and is, as well as the peduncles, smooth; flowers yellow; helmet conico-cylindrical, compressed; ovaries smooth. ♃. H. Native of the Alps of Bern. A. Lycóctonum ι, ramosíssimum, Ser. in D. C. prod. 1. p. 58.

Var. δ, Seringei; flowers panicled, yellow; helmet elongated, cylindrical, inclined, deformed; stem and peduncles smoothish; spur broad; leaves large, smoothish. ♃. H. Native of the Alps of Bern. A. Lycóctonum, var. Ser. mus. helv. 1. p. 137. D. C. prod. 1. p. 58. last variety.

Female's-bane Aconite. Fl. Jul. Aug. Clt. 1821. Pl. ½ to 6 ft.

76 A. lyco'ctonum (Lin. spec. 532. Rchb. ill. t. 52.) spur subannular; bottom of helmet cylindrical; beak elongated, stretched out; middle and lower sepals equal in length. ♃. H. Native of Lapland, Sweden, Norway, &c. A. Lycóctonum, var. fl. cær. Ström. scand. 1. p. 67. Gunn. norv. no. 14. Oed. fl. dan. t. 123. Wahl. Lapp. 275. A. septentrionàle, Kœlle, spicel. p. 22. no. 9. D. C. syst. 1. p. 370. Stem slender, simple, quite upright, pubescent. Leaves large, 7-parted. Racemes more or less pubescent, branched at the base. Flowers largeish, of a livid-violet colour. Ovaries 3, smooth.

A decoction or the powder of the root of this plant is used for destroying flies and other insects. Linnæus gives an account of its being eaten in Medelpadia, a province of Sweden, without injury. It seems indeed to be milder than some of the other species; and goats and horses are said to eat it.

True *Wolf's-bane* Aconite. Fl. July, Aug. Clt. 1596. Pl. 4-6 feet.

Cult. All the species of Aconite are of easy culture. They are very ornamental, and are well adapted for ornamenting flower borders. Most of them will grow under the shade of trees, therefore they are proper to plant in ornamental woods and wildernesses. They are easily increased by separating the roots or by seeds.

Plants referred to Caltha by F. Hamilton, M.D., to which, from the descriptions, they do not appear to belong. We therefore propose the name Nirbisia for the genus.

XXIX. (2) NIRBI'SIA (Nirbishi or Nirbikhi, the aboriginal name of one of the species). Caltha Hamilt. in edinb. jour. scienc. vol. 1. Aug. 1824. p. 249.

Lin. syst. *Polyándria, Tetragýnia.* Calyx of 4, ovate, concave, thick, obtuse, coloured, petal-like sepals. Petals wanting. Stamens numerous, very short. Ovaries 4, awl-shaped. Styles thick, awl-shaped, crowned by simple, acute stigmas. Capsules 4 awl-shaped, many-seeded. Smooth plants with tuberous roots, cordate or peltate alternate leaves and terminal panicles of small greenish or yellowish flowers. Qualities poisonous.

1 N. Bi'sma; stem simple, smooth; cauline leaves numerous, stalked, cordate, roundish, smooth, somewhat 5-nerved and veiny, 5-lobed; lobes cuneated, cut at the apex; petioles very long, stem-clasping at the base. ♃. F. Native of Nipaul on the Himalaya Mountains at the river Kosi. Cáltha Bísma, Hamilt. l. c. Panicle terminal; peduncles elongated, few-flowered, rising from the top of the stems or from the axils of the upper leaves. Bracteas sessile, trifid, small, situated a little below the flower. Flowers small, erect, green, blackish on the outside. Sepals 4, thickish, rude. *Bishma, Bíkhma, Bish*, or *Bikh*, is the name of the plant in Nipaul.

The root of this plant is truly poisonous, and is used by the inhabitants of Nipaul, near the river Kosi, (the Corkhalese) to poison their darts, and they regard it as their most powerful means of repelling the invasions of their enemies, by the facility with which they can impoison water with it.

Bishma. Pl. 1½.

2 N. Codu'a; stem erect; cauline leaves numerous, pilose, nervous and veiny, ovate, peltate, with many cuneated, cut, lobate lobes; lobules bluntish, with two deep incisures towards the top of the leaf. ♃. F. Native of Nipaul with the preceding Cáltha Codùa, Hamilt. l. c. The root of this species is more poisonous than the last, and is used by the Corkhalese for the same purposes. *Kodoya* is the name of this plant in Nipaul.

Kodoya. Pl. 1½ foot.

3 N. Hamilto'nii, stem simple, smooth; cauline leaves numerous, stalked, cordate, triangular, somewhat 5-nerved, and veiny, with a few short hairs on the edges; lobes cuneated, cut, acute, quinquefariously divided; petioles very long, stem-clasping. ♃. F. Native of Nipaul, along with the two preceding species, where it is called Nirbishi or Nirbikhi. Cáltha Nirbìsia, Hamilt. l. c. The root of this species is a powerful bitter, and is employed by the natives of Nipaul to cure fevers.

Hamilton's Nirbishi. Pl. 1½ foot.

Cult. None of the species of Nirbisia has yet been introduced into the gardens of Europe, therefore the mode of cultivating them is unknown; however, should they be, we would recommend their being grown in small pots filled with loam and peat, and treated as other alpine plants; they may be either increased by separating the tubers or by seeds.

Tribe V.

Pæonia'ceæ, D. C. prod. 1. p. 64. Ranunculàceæ Spùriæ, D. C. syst. 1. p. 381. Anthers bursting outwards. Perhaps a distinct order. Herbs rarely shrubs.

XXX. CIMICI'FUGO (from *cimex*, a bug, *fugo*, to drive away; indicating certain virtues the plants possess, particularly *C. fœ'tida.*) Lin. amœn. 7. p. 435. Schreb. gen. 933. Actæ'a, Sect. 1. Cimicífugo, D. C. syst. 1. p. 382. prod. 1. p. 64.

Lin. syst. *Polyándria, Mono-Polygýnia.* Calyx of 4 deciduous sepals. Petals 4. Styles 1 to 15. Carpels dry, dehiscent, many-seeded. Perennial herbs, with variously divided leaves, and racemes of whitish flowers. Roots drastic and poisonous.

§ 1. *Actæ'a, sect. Cimicífugo, D. C. syst.* 1. *p.* 383. *Carpels* from 1 to 15.

1 C. fœ'tida (Lin. syst. ed. 12. p. 659.) ovaries 4, almost sessile, very villous; racemes panicled; leaves ternate or biternate; leaflets ovate-oblong, deeply toothed. ♃. H. Native of the Carpathian mountains, Dauria, Eastern Siberia, and north-west coast of America. Gært. fruct. 2. p. 275. t. 140. Actæ'a cimicífugo, Lin. amœn. 2. p. 354. D. C. syst. 1. p. 382. Plánta cimicífugo, Lin. amœn. 8. p. 193. t. 4. A very fetid herb, used in Siberia for driving away bugs, as tansy is by the peasants of this country.

Var. β, símplex (Wormsk ined. ex. Fisch. in litt.) ♃. H. Native of Kamtschatka, very common. Actæ'a cimicífugo β, simplex, D. C. prod. 1. p. 64. Stem simple, undivided; racemes solitary or rarely twin. Perhaps a distinct species.

Fœtid Bugwort. Fl. June, July. Clt. 1777. Pl. 2 feet.

2 C. America'na (Michx. fl. bor. amer. 1. p. 316.) ovaries 4 or 5, smooth, stipitate; racemes panicled; leaves decompound. ♃. H. Native of Carolina in shady woods on mountains. Actæ'a podocárpa, D. C. syst. 1. p. 382. Del. icon. sel. 1. t. 66. Habit of *C. serpentària.*

American Bugwort. Fl. Aug. Sep. Clt. 1824. Pl. 2 to 3 ft.

3 C. cordifòlia (Pursh. fl. amer. sept. 2. p. 307. exclusive of the synonyms,) ovaries from 2 to 3, sessile; racemes panicled; leaves biternate; leaflets 4-5-lobed, serrated, cordate at the base. ♃. H. Native of North America in shady woods, on high mountains of Carolina. Actæ'a cordifòlia, D. C. syst. 1. p. 383. Resembles *C. serpentària.* Ovaries smooth. Bot. mag. 2069.

Heart-leaved Bugwort. Fl. July, Aug. Clt. 1812. Pl. 2 or 3 ft.

4 C. palma'ta (Michx. fl. bor. amer. 1. p. 316.) ovaries from 12 to 15, collected into a roundish head; racemes dichotomously panicled; leaves palmate, with the lobes serrated at the apex. ♃. H. Native of North America in the beds of mountain rivulets in Virginia and Carolina, also on the north-west coast. Actæ'a palmàta, D. C. syst. 1. p. 383. Hydrástis, Lam. ill. t. 500. Hydrástis Caroliniànus, Walt. carol. 156. ? Hydrástis Canadénsis, Poir. suppl. 3. p. 71.—Bot. mag. 1630. Herb glabrous.

Palmate-leaved Bugwort. Fl. July, Aug. Clt. 1812. Pl. 2 ft.

§ 2. *Actæ'a, Sect. Macròtys, D. C. syst.* 1. *p.* 383. *prod.* 1. p. 64. *Carpels solitary.*

5 C. serpenta'ria (Pursh. fl. amer. sept. 2. p. 372.) racemes compound, very long; leaves triternate, with serrated or rather cut leaflets. ♃. H. Native of North America in shady stony woods, from Canada to Florida. Actæ'a monógyna, Walt. car. 151. Actæ'a racemòsa, Lin. spec. 722. C. racemòsa, Bart. philad. 2. p. 12.—Pluk. amalth. 54. t. 383. f. 3.—Dill. elth. 79. t. 67. f. 78. Resembles *Actæ'a spicàta*, but larger. Flowers white. This plant is used with success by the native practitioners of North America, for curing the dangerous bite of the Rattlesnake.

Black *Snakeroot* or Bugwort. Fl. July, Aug. Clt. 1732. Pl. 3 to 5 feet.

6 C. Japo'nica; spikes very long; leaves ternate, with 5 or 7 lobed cordate segments. ♃. H. Native of Japan. Actæ'a Japónica, Thunb. jap. 221. D. C. syst. 384. Leaves large. Flowers sessile.

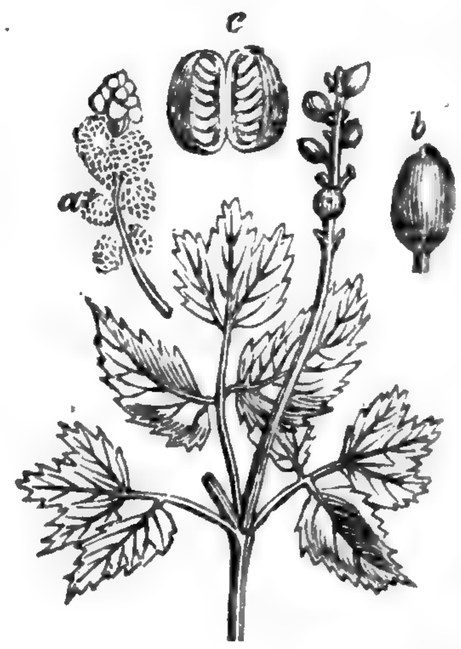
Japan Bugwort. Pl. 3 feet.

Cult. Plants of easy culture, will grow in any common garden soil, prefer a shady moist situation. All the species are easily increased by dividing the plants at the root or by seeds.

XXXI. ACTÆ'A (*ακτη, akte*, was the Greek name of the Elder, which these plants much resemble in foliage and fruit.) Lin. gen. no. 644. Christophoriàna, Tourn. inst. 299. t. 154. Actæ'a, Sect. III. Christophoriàna, D. C. syst. 1. p. 384.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 4 deciduous sepals. Petals 4. Style 1. Carpels baccate indehiscent (f. 13. *b.*) many-seeded (f. 13. *e.*) Perennial herbaceous plants, with bi or triternate leaves, and racemes of whitish flowers. Berries poisonous.

FIG. 13.



1 A. spica'ta (Lin. spec. 722.) berry oblong; petals length of stamens; racemes ovate; leaves bi or triternate, with ovate-lanceolate, serrated or cut segments, terminal one trifid. ♃. H. Native almost throughout the whole of Europe. In England in bushy mountainous limestone situations, rare. In the north-west corner of Yorkshire, as about Malham Cove, Clapham, Askrigg, and the base of Ingleborough hill, &c. Smith, engl. bot. 918. Fl. dan. 498. Lam. illus. t. 448. f. 1. Gært. fr. 2. p. 154. t. 114. Flowers white, with a slight blush colour. This plant is a powerful repellent. The root is useful in some nervous cases, but must be administered with caution. The berries are black and poison-

ous; the juice of them with alum yields a black die. Toads are reported to enjoy the fetid odour of this plant. (f. 13.)

Spiked-flowered or Common Bane-berry. Fl. May, July. England. Pl. 1 foot.

2 A. ru'bra (Willd. enum. p. 560.) leaves bi or triternate; leaflets ovate-lanceolate, serrated or cut; petals acute, shorter than the stamens; racemes simple hemispherical; pedicels slender; berries ovate-oblong. ♃. H. Native of North America in shady rocky woods in rich vegetable soil, from Canada to Virginia, and from Hudson's bay to the Rocky Mountains. A. brachypétala var. *β*, rùbra, D. C. syst. 1. p. 385. Berries red. Flowers, fruit, and seeds larger than those of *A. àlba*. This plant is known in North America by the name of *Red Co-hosh*, and is considered by the natives a valuable medicine.

Var. β, cærùlea; berries blue. ♃. H. Native of Florida, where it is known by the name of *Blue Co-hosh*. A. brachypétala *γ*, cærùlea, D. C. syst. 1. p. 385.

Red Bane-berry. Fl. May, June. Clt. Pl. 1 to 1½ foot.

3 A. a'lba (Bigl. fl. bost. ed. 2. p. 211.) leaves bi or triternate; leaflets ovate-lanceolate, serrate or cut; petals truncate, equal in length to the stamens; racemes simple, oblong; pedicels a little thickened; berries ovate-oblong. ♃. H. Native of North America in shady rocky woods in rich vegetable soil, from Canada to Virginia; in Canada, particularly about Lake Huron. A. brachypétala *α*, álba, D. C. syst. 1. p. 385. Berries white. This plant is known in North America by the name of *White Co-hosh*, and is considered a valuable medicine by the natives.

Var. β, microcárpa; berries small white or reddish, on thick pedicels. ♃. H. Native about Boston. A. brachypétala *δ*, microcárpa, D. C. syst. 1. p. 385.

White Bane-berry. Fl. May, June. Clt. Pl. 1 to 1½ foot.

Cult. These plants will thrive well in any common garden soil. They succeed best under the shade of trees. They are easily increased by dividing the plants at the root, or by seeds, which usually ripen in abundance.

XXXII. ZANTHORHI'ZA (from ξανθος, *zanthos*, yellow, ριζα, *rhiza*, a root; deep yellow colour of the roots.) Marsh. arb. 167. Lam. ill. t. 854. D. C. syst. 1. p. 286. prod. 1. p. 65.

Lin. syst. *Polyándria, Mono-Trigýnia.* Calyx of 5 deciduous sepals. Petals 5. Carpels 2-3-seeded, but usually solitary from abortion. A small shrub, with yellow creeping roots, irregularly pinnate leaves, branched racemes, and small purplish flowers rising from the scaly buds.

1 Z. apiifo'lia (Lher. stirp. nov. p. 79. t. 38.) ♄. H. Native of North America on shady banks of rivers; from Virginia to Georgia. Bart. elem. bot. t. 12. ex. coll. mat. med. amer. 2. p. 11. A small shrub, with irregularly pinnate leaves; leaflets 5-7; deeply serrated. Racemes branched, pendulous, rising with the leaves from the scaly buds. Flowers small, dark-purple, usually unisexual from abortion. Bark of the root intensely and adhesively bitter, and somewhat acrid.

Parsley-leaved Yellow-root. Fl. May, June. Clt. 1766. Sh. 1 to 2 feet.

Cult. Zanthorhiza will thrive in any common garden soil. It is easily increased by suckers from the root, which are thrown out in great numbers.

XXXIII. PÆO'NIA (The physician Pæon was the first to use this in medicine. The Greek legend adds, that he used it to cure Pluto of a wound inflicted by Hercules.) Lin. gen. no. 678. Gært. fruct. 1. p. 309. t. 65. D. C. syst. 1. p. 386. prod. 1. p. 65.

Lin. syst. *Polyándria, Di-Pentagýnia.* Calyx of 5 leafy inequal permanent sepals (f. 14. *b. a.*) Petals from 5 to 10, somewhat orbicular (f. 14. *c.*) Stamens indefinite. Disk fleshy, girding the ovaries. Carpels follicular, from 2 to 5 (f. 14. *e.*) large, many-seeded, terminated with thick bilamellate stigmas (f. 14. *e.*) Seeds rather globose, shining.—Roots fascicled. Cauline leaves biternate. Flowers large, white or purplish, usually with a strong disagreeable smell. The root is acrid, bitter, and fetid, and its qualities are reported to be narcotic and dangerous, which we can readily believe. The seeds are somewhat emetic.

Sect. I. Mo'utan (the name of the tree Pæony in Japan and China.) D. C. prod. 1. p. 65. Stem shrubby. Disk expanded into a membranous urceolus, involving the carpels more or less. The flowers of the Moutan Pæony are generally fragrant. In China the shrubs sometimes exceed 10 feet in height, but in Britain they scarcely ever exceed 5 feet.

1 P. Mo'utan (Sims, bot. mag. t. 1154.) segments of leaves oval-oblong, glaucous underneath; carpels 5, villous. ♄. H. Native of the North of China on mount Ho-nan. Cultivated in the gardens throughout China and Japan for the beauty of their blossoms. Flowers single, purple. All the varieties of Moùtan are very ornamental.

Var. α, papavaràcea (Andr. bot. rep. t. 463.) petals from 8 to 13. white, with a purple spot at the base of each; capsules altogether inclosed in the unceolus or disk. ♄. H. Lodd. bot. cab. 547. Sims, bot. mag. 2175.

Var. β, Bànksii (Anders. Lin. trans. v. p.) flowers double; petals reddish in the middle; segments of leaves, withblunt fissures. ♄. H. Andr. bot. rep. t. 448. Ker. bot. reg. 379. Sims, bot. mag. t. 1154. The petals are slightly tinged with blush, becoming nearly white at the edges, and are marked at the base with purplish red. Clt. 1794.

Var. γ, Hùmei (Ker, bot. reg. t. 379.) flowers double, with a bunch of long petals rising from the middle of the flower, of the same colour as *Banksii*. ♄. H. Clt. 1817.

Var. δ, ròsea (D. C. prod. 1. p. 65.) flowers semi-double, rose-coloured; segments of leaves, with very blunt fissures at the apex. ♄. H. Andr. bot. rep. t. 373. Lodd. bot. cab. t. 1035. Petals large, of a fine deep pink. Clt. 1794.

Var. ε, ròsea-plèna (Hort. trans. 6. p. 477.) flowers very double, of a fine deep pink, nearly scentless.—Bonpl. pl. rar. p. 61. t. 23. P. suffruticòsa, Andr. bot. rep. t. 373. Petals jagged.

Var. ζ, Ranèsii (Hort. trans. 6. p. 479.) flowers single, pale, slightly tinged with pink. The foliage much resembles that of an herbaceous Pæony. ♄. H. Clt. 1820.

Var. η, Carnea-plena (Hort. trans. 6. p. 481.) flowers very double, of a delicate purplish pink, with a rich purple rayed spot at the top of each. Very like *Banksii*, but without the central elongated petals, which sometimes in that variety appear to rise from amongst the germens.

Var. ϑ, álbida-plena (Hort. trans. vol. 6. p. 482.) flowers double, very pale, though not decidedly white, suffused with purple. ♄. H.

Var. ι, Anneslèi (Hort. trans. 6. p. 482. t. 7.) flowers small, almost single, of a rich purplish pink; petals usually 9, obcordate, slightly jagged at the margins, of a darker colour at their bases. ♄. H.

Moutan or Tree Pæony. Fl. April, June. Clt. 1789. Shrub 3 to 10 feet.

Sect. II. Pæon (applied to this section on account of its containing the original Pæonys, for the derivation see *genus.*) D. C. prod. 1. p. 65. Stems herbaceous. Disk of flower hardly or not expanded, and therefore only surrounding so much of the base of the carpels (f. 14. *d.*) Roots fascicled, composed of fusiform tubers.

§ 1. *Leaves glabrous.*

FIG. 14.

2 P. coralli'na (Retz. obs. 3. p. 34.) carpels tomentose; segments of leaves ovate, entire, glabrous. 4. H. Native of many parts of Europe; France, Balearic Islands, Greece, and Siberia; in England abundantly on the rocky clefts of the steep Holmes in the Severn, Smith, engl. bot. t. 1513. P. officinàlis β, màscula, Lin. spec. 747.—Lob. icon. 684. f. 2. Flowers crimson. Leaves broad, of a dark shining green. (f. 14.)

Coralline or Male Pæony. Fl. May, June. England. Pl. 1 to 2 feet.

3 P. festi'va (Tausch. in Sitz. bot. gesell. vol. 4. nov. 1827.) carpels tomentose, erect; segments of leaves unequally jagged, smooth, with the divisions crowded, oblong-lanceolate. 4. H. Native of many parts of Europe, in mountain woods, France, Switzerland, Carinthia, Carniola, Greece, and Crete, &c. P. officinàlis, Retz. obs. 8. p. 35. Sims, bot. mag. t. 1784. Smith, fl. græc. 369. P. ambígua, Lois?

Var. α, Sabìni (Anders. in Lin. trans. 12. p. 265.) flowers dark-purple. P. officinàlis, Sims, bot. mag. 1784.

Var. β, ròsea (Anders. l. c. p. 266.) flowers deep rose-coloured; stems loose.—Lob. icon. 697.

Var. γ, rùbra (Anders. l. c. p. 267.) flowers very double, dark-purple.—Lob. icon. 684. This is the most common variety in gardens.

Var. δ, carnéscens (Anders. l. c. p. 268.) flowers very double, of a deep rose colour.

Var. ε, álbicans (Anders. l. c.) flowers very double, blush.—Tabern. icon. 785.—Park. par. p. 342 and 343. f. 4.

Common or *Handsome* Pæony. Fl. My. Ju. Clt. 1548. Pl. 2 ft.

4 P. triterna'ta (Pall. nov. act. petrop. vol. 10.) carpels tomentose, erect; segments of leaves glaucous underneath, somewhat lobed with obovate blunt lobules. 4. H. Native of Tauria. P. Dàurica, Andr. bot. rep. t. 486. Sims, bot. mag. t. 1441. Flowers of a pleasant pale rose-colour.

Triternate-leaved Pæony. Fl. My. Ju. Clt. 1790. Pl. 1½ to 2 ft.

5 P. loba'ta (Desf. cat. hort. par. 126.) carpels tomentose, erectish; segments of leaves smooth, decurrent, pinnate-parted, 3-lobed at the apex. 4. H. Native of Portugal. Flowers purple, sweet-scented.

Lobed-leaved Pæony. Fl. May, June. Clt. 1821. Pl. 2 feet.

6 P. tenuifo'lia (Lin. spec. 748.) carpels tomentose, spreading; segments of leaves smooth, divided into many fine linear lobes. 4. H. Native of the Ukraine, Siberia and Tauria, among broken rocks on the banks of rivers. Pall. fl. ross. 2. p. 95. t. 87. Sims, bot. mag. t. 926. Flower fine dark-red, and nestled as it were among the finely divided leaves.

Var. β, laciniàta (Willd. enum. 573.) stem higher, and with the segments of the leaves broader than in the species.

Fine-leaved Pæony. Fl. May, June. Clt. 1765. Pl. 1 to 1½ ft.

7 P. hy'brida (Pall. fl. ross. 2. p. 94. t. 86.) carpels pubescent, spreading; segments of leaves smooth, many-parted into linear lobes. 4. H. Native of the Ukraine between the Volga and Tanais. Flowers dark red. Lindl. bot. reg. t. 1208. Perhaps only a variety of the preceding.

Hybrid Pæony. Fl. May, June. Clt.? Pl. 1 to 1½ foot.

8 P. ano'mala (Lin. mant. 247.) carpels 5, smooth, depressed, obtuse; segments of leaves smooth, pinnatifid; lobes lanceolate, acuminated. 4. H. Native of Siberia. Andr. bot. rep. 514. Sims, bot. mag. t. 1754. P. laciniàta, Pall. fl. ross. 2. p. 93. t. 85. Flowers crimson, drooping. The root dried is used by the Mongols and some Tartars as sauce for their meat, and Boetcher, an army surgeon, found it to be useful in intermittent fevers.

Anomalous Pæony. Fl. May, June. Clt. 1788. Pl. 2 to 3 ft.

9 P. Cre'tica (Clus. hist. 1. p. 281. D. C. syst. 1. p. 394. Tausch. l. c.) carpels 5, tomentose; leaves ternately cut; leaflets quinate-pinnatifid; segments lanceolate, acuminated, decurrent at the base, smooth on both surfaces. 4. H. Native of Crete. Flowers white or blush.

Cretan Pæony. Fl. May, June. Clt.? Pl. 1 to 2 feet.

10 P. Co'rsica (Sieb. pl. cors. Tausch. Vorgel in Sitz. bot. gesell. vol. 4. 1827.) carpels smooth, erect; leaves biternate-cut; segments entire ovate, acuminate, nearly quite smooth. 4. H. Native of Corsica on mount Gagna. P. paradóxa β, leocárpa, D. C. prod. 1. p. 66.? Flowers purplish, large.

Corsican Pæony. Fl. May, June. Clt.? Pl. 2 feet?

11 P. albiflo'ra (Pall. fl. ross. 2. p. 84.) carpels smooth, recurved; segments of leaves smooth, shining, 3-parted, with ovate-lanceolate lobes. 4. H. Native from Siberia to China. Flowers white. P. édulis, Sal. par. lond. 78.

Var. α, vestàlis (Anders. in Lin. trans. 12. p. 257.) leaflets broader, flat, purplish; flowers white, of 8 petals; stigmas pale-yellow; stem 2-3-flowered. A. albiflòra, Andr. bot. rep. t. 64.

Var. β, cándida (Anders. l. c.) leaflets broader, flat, dark-green; flowers pale flesh-coloured, of 8-petals; stigmas flesh-coloured; stem 2-flowered.

Var. γ, Tatárica (Anders. l. c. p. 258.) leaflets broader, flat, purplish; flowers flesh-coloured, of 9 to 14 petals, with flesh-coloured stigmas; stem 2-3-flowered. P. édulis, Sal. par. lond. 78. P. albiflòra, Ker. bot. reg. t. 42.

Var. δ, Sibírica (Anders. l. c.) leaflets concave, pale green; flowers altogether white, with flesh-coloured stigmas; stem 2-flowered.

Var. ε, rubéscens (Anders. l. c. p. 259.) leaflets concave, narrower, purplish; flowers reddish, of 8 petals, with pale-yellow stigmas; stem 3-flowered. A dwarf plant.

Var. ζ, uniflòra (Anders. l. c.) leaflets concave, narrow; flowers white, of 8 petals, with pale yellow stigmas; stem 1-flowered. P. albiflòra, Sims, bot. mag. t. 1756. Petals pink at the base.

Var. η, Whitlèji (Anders. l. c.) leaves more wrinkled, unequally jagged; flowers pale-blush; stem 3 feet high, usually bearing 5 flowers. Ker. bot. reg. t. 630.—Andr. bot. rep. 612. Outside petals reddish, inside ones pale straw-coloured, the whole becoming nearly white before they drop off, emitting a scent somewhat like that of *Elder-flowers*. Flowering in June. Native of China. Clt. 1808.

Var. ϑ, Hùmei (Anders. l. c. p. 260.) leaflets wrinkled, unequally jagged; flowers very double, red; stem 4 feet high, usually 3-flowered. P. édulis var. Sinénsis, Sims, bot. mag. t. 1768. Native of China. Clt. 1808.

Var. ι, fràgrans (Anders. l. c.) leaflets wrinkled, narrow, pale green; flowers double, rose-coloured; stem erect, 3 feet high, 1-3-flowered. Ker. bot. reg. 485. Hort. trans. vol. 2. t. 18. Native of China. Clt. 1805.

The roots of many of the varieties of this plant are boiled in broth by the Daurians and Monguls. They also grind the seeds and put them into their tea.

White-flowered or Edible Pæony. Fl. May, June. Clt. 1548. Pl. 1 to 4 feet.

12 P. Bro'wnii (Doug. mss. in Hook. fl. bor. amer. p. 27.) carpels 5, quite smooth, erect; leaves smooth on both surfaces; leaflets ternately divided or pinnatifid, jagged; segments oblong, those of the upper leaves are very blunt; stem erect, branched, striated. 4. H. Native of North West America, near the

limits of perpetual snow on the subalpine range of Mount Hood. Flowers purplish-red.

Brown's Pæony. Fl. June, July. Clt. 1826. Pl. 1 to 2 feet.

§ 2. *Leaves puberulous on the under surface.*

13 P. Ru'ssi (Biv. mant. sic. 4. p. 12.) carpels hairy; segments of leaves elliptical, entire, hardly puberulous underneath. ♃. H. Native of Sicily in the mountains about Panorma. Sweet. brit. fl. gard. t. 122. Root fusiform. Flowers crimson. Very like *P. hùmilis*.

Russ's Pæony. Fl. May, June. Clt.? Pl. 1 to 2 feet.

14 P. hu'milis (Rets. obs. 3. p. 35.) carpels toméntose, erectish; segments of leaves multifid or 3-5-parted, villous underneath, with narrow lanceolate lobes. ♃. H. Native of Spain. Sims, bot. mag. 1422.—Lob. icon. 683. f. 1.—Mor. hist. 3. p. 455. sect. 12. t. 1. f. 8. Flowers of a purplish-blood-colour. Petals a little jagged. Stigmas erect. Lobes of leaves channelled.

Humble Pæony. Fl. May, June. Clt. 1633. Pl. 1 to 2 feet.

15 P. deco'ra (Anders. in Lin. trans. 11. p. 273.) carpels pubescent, spreading; segments of leaves 3-parted-jagged, oblong, blunt, hairy underneath. ♃. H. Native of Turkey about Constantinople. P. Bysantìna prior, Clus. hist. p. 279.—Park. par. p. 342 and 343. t. 2.? Flowers deep-crimson. Petals small, narrow, with curled margins. Stigma lunate, pale-red, recurved.

Var. α, *Pallàsii* (Anders. l. c.) leaflets narrow, oblong. Native of the Crimea.

Var. β, *elàtior* (Anders. l. c.) leaflets broad, oblong.

Comely Pæony. Fl. May, June. Clt.? Pl. 2 to 3 feet.

16 P. arieti'na (Anders. l. c. p. 275.) carpels downy, arched, spreading; segments of leaves, 3-lobed and pinnatifid, decurrent, oval-oblong, flattish, hairy underneath. ♃. H. Native of the Levant.

Var. α, *Andersònii* (Anders. l. c.) flowers of a deep rose-colour; petals a little curled.—J. Bauh. hist. 3. p. 493.

Var. β, *Oxoniénsis* (Anders. l. c. p. 276.) flowers flesh-coloured; petals jagged-curled. P. arietìna cárnea, D. C. prod. 1. p. 66.—Mor. hist. 2. p. 454.

Ram's-horn capsuled Pæony. Fl. May, June. Clt.? Pl. 2 ft.

17 P. peregri'na (Mill. dict. no. 3.) carpels downy, straight; segments of leaves unequally jagged, with entire ovate-lanceolate wrinkled lobes, hairy and glaucous underneath. ♃. H. Native of the south of Europe in mountain meadows. Sims, bot. mag. t. 1050. P. peregrina γ, D. C. syst. 1. p. 390. P. promíscua, Lobel. icon. 683. Tausch. l. c. Flowers crimson, with erose petals.

Var. β, *Grevíllei* (Anders. l. c. p. 280.) leaflets deeply jagged and undulated, sometimes twisted, narrow, acute, wrinkled, glaucous, particularly beneath, with reddish margins; calyx smooth.

Var. γ, *compácta* (Anders. l. c. p. 279.) leaflets dark green, broad-ovate, flat, not waved nor jagged, with very blunt segments; lateral leaflets 3-lobed or ternate, crowded so as to overlap each other; calyx hairy at the base; carpels generally two.

Var. δ, *múltiplex;* flowers double, purplish; lobes of leaves elongated, rather hairy. P. hirsùta, Mill. dict. no. 4.—Mor. hist. 3. p. 455. sect. 12. t. 1. f. 17.

Foreign Pæony. Fl. May, June. Clt. 1629. Pl. 1 to 2 ft.

18 P. officina'lis (Lin. spec. 747. var. α fæmina,) carpels recurved, tomentose; segments of leaves unequally jagged, with the divisions oblong-lanceolate, smooth, glaucous, and somewhat pilose beneath. ♃. H. Native of Europe in shady places on mountains.—Lobel. icon. 682.—Besl. eyst. vern. ord. 6. p. 15. f. 1.—Mor. hist. 3. sect. 12. t. 1. f. 7. P. Tatárica, Mill. dict. no. 5. D. C. syst. 1. p. 392. P. peregrina var. β, D. C. syst. 1. p. 390. P. paradòxa var. γ. Tatárica, D. C. prod. 1. p. 66. Dioscorides celebrates this plant as useful in promoting natural discharges when deficient, and restraining some of them when too abundant. Flowers red or crimson.

Var. β, *múltiplex;* leaves difformly lobed, pubescent. Mill. icon. 2. t. 199.

Officinal Pæony. Fl. May, June. Clt. 1548. Pl. 2 feet.

19 P. parado'xa (Anders. l. c. p. 288.) carpels downy, straight; segments of leaves many-parted, blunt, and somewhat waved, glaucous and hairy underneath. ♃. H. Native of Spain and the south of France on mountains. A. Lusitánica, Mill. dict. no. 6. Tausch. Vorgel. in Sitz. bot. Gesell. vol. 4. 1827. Flowers of a violet crimson-colour, with obovate jagged petals, which are often bifid.

Var. α, *simpliciflòra* (Anders. l. c. p. 289.) stem altogether smooth; flowers of 8 petals.—Besl. hort. eyst. ord. 6. t. 14. f. 3.

Var. β, *fimbriàta* (Anders. l. c. p. 290.) stem hardly hairy; flowers double; petals more linear and divided than any of the varieties of *P. festìva*. Sweet, fl. gard. t. 19. P. hùmilis, Willd. enum. 572. Hort. Prague. Double-fringed Pæony, Hort. trans. 2. p. 276.

Var. γ, *leocárpa* (D. C. prod. 1. p. 66.) carpels quite smooth.

Paradoxical Pæony. Fl. June. Clt.? Pl. 1 to 1½ foot.

20 P. mo'llis (Anders. l. c. p. 282.) carpels downy, straight; segments of leaves oval-lanceolate, flat, lobed, overlapping each other, clothed with greyish hairs underneath. ♃. H. Native of Siberia? Lod. bot. cab. 1263. Calyx pubescent on the outside. Flowers small, of a dull purplish red.

Soft-leaved Pæony. Fl. May, June. Clt.? Pl. 1 foot.

21 P. pu'bens (Sims, bot. mag. 2264.) leaves biternate; leaflets lanceolate, acuminated, densely clothed with soft pubescence beneath; ovaries clothed with whitish tomentum, each crowned by a somewhat orbicular stigma; stem, petioles, and peduncles hairy. ♃. H. Native of? Flowers large, dark-purple; anthers yellow.

Downy Pæony. Fl. May, June. Clt. 1821. Pl. 1½ foot.

22 P. villo'sa (Sweet, fl. gard. t. 113.) carpels densely tomentose, erect, but somewhat incurved at the apex; leaves villous, pubescent, and whitish-glaucous beneath, lower ones somewhat triternate, upper ones ternate; leaflets pinnatifid; segments oblong-lanceolate, elongated, incurved at the apex. ♃. H. Native of France? Flowers white. P. sessiliflòra, Sims, bot. mag. t. 2648.

Villous Pæony. Fl. May, July. Clt. 1820. Pl. 1½ foot.

Cult. The *Moutan* or *Tree Pæony* and its numerous varieties are much esteemed for the beauty of their flowers. They are quite hardy, but as their blossoms are apt to be injured by the cold blasts of spring; glass-frames to answer the size of the plants should be placed over them, under which they will blossom in great perfection. A rich loamy soil suits them best. Cuttings taken off in August or September, with a part of the wood of the preceding year attached, and planted in a sheltered situation, will root freely. They may be also increased by layers: the shoots before they are layed down require to have a longitudinal slit made on the under side; however, in this way they are longer in emitting roots than the cuttings. The hardy herbaceous species are amongst the most shewy of border-flowers. They thrive best in a rich loamy soil, and are easily increased by dividing the plants at the roots, taking care to leave a bud to each slip, or by seeds; by the last method many new varieties may be raised.

ORDER II. DILLENIA'CEÆ. (plants agreeing with Dillenia in many important characters.) D. C. ann. mus. 17. p. 400. syst. 1. p. 395. prod. 1. p. 67.

Parts of flower imbricate in the bud. Calyx of 4 or 5 permanent sepals (f. 15. *a.* f. 16. *a.*) but in *Empedoclea* numerous. Petals 4-5, permanent (f. 19. *a.*) or deciduous (f. 16. *a.*) alternating with the sepals. Stamens indefinite, free, (f. 17. *a.* f. 19. *b.*) or polydelphous. Anthers adnate, bursting inwards or laterally (f. 17. *c.*). Carpels 1-celled, numerous, usually from 2 (f. 16. *d.*) to 5 (f. 15. *a.*) but sometimes solitary from abortion, capsular, baccate (f. 19. *c.*), or 2-valved (f. 15. *e.*), free (f. 15. *a.*), or connected into one fruit (f. 19. *c.*). Seeds attached to the inner angle of the cells of the carpels, usually in 2 rows, numerous or few, sometimes solitary from abortion (f. 15. *e.* f. 16. *e.*). Embryo small, placed in the base of a cartilaginous albumen. Elegant evergreen trees, shrubs, or climbing shrubs, with alternate simple, feather-nerved, entire (f. 17.), or toothed (f. 19.) leaves. Flowers solitary (f. 16, 18, 19.), racemose (f. 17.) or panicled (f. 15.), terminal or lateral, usually yellow, emulating those of *Cistus*. This order differs from *Ranunculàceæ* in the sepals being permanent, as well as in the anthers never bursting outwards, and from *Magnoliàceæ* and *Anonàceæ* in the parts of the flowers being disposed in a quinary order, not often ternary as in these orders.

The medical properties of this order are hardly known; a decoction of their leaves or bark is astringent, but it is neither bitter nor aromatic, and is used for gargles, and the acid juice of the fruit of some species of *Dillènia* is used in India, mixed with water, as a pleasant beverage in fevers. The foliage of many of the species being extremely scabrous, are used, when dried, for the same purposes as fish-skin and sand-paper in Europe; those of *Trachytélla áspera* are even employed in China for polishing works of metals.

The seeds of the plants belonging to this order, retain their vegetative power but for a very short time, therefore the sooner they are sown after their arrival the more likely they will be to vegetate. Many of them will not retain their power of vegetating more than 6 weeks or 2 months after they have been collected from the plant.

Synopsis of the Genera.

TRIBE I.

DELIMA'CEÆ. (*D. C. syst.* 1. *p.* 396. *prod.* 1. *p.* 67.) *Filaments of stamens dilated at the apex, bearing on both sides the separated roundish cells of the anthers.*

1 TETRA'CERA. Flowers usually dioecious or polygamous; male flowers with an indefinite number of stamens; female ones with 1-5 capsular 1-seeded carpels, which are girded by 4 or 6 imbricate sepals (f. 15. *a. d.*). Petals 3-6 (f. 15. *b.*).

2 DAVI'LLA. Stamens indefinite. Carpel 1-3, capsular, indehiscent, testaceous, 1-2-seeded, inclosed within the two inner sepals which are concave, and joined together in the form of valves, the three outer ones are small. Petals 2-3.

3 EMPEDO'CLEA. Stamens indefinite. Carpel 1, oblong, pyramidal, 6-seeded, baccate? trigonal, with one of the angles bearded. Sepals numerous, imbricate. Petals 3.

4 DOLIOCA'RPUS. Stamens indefinite. Carpel baccate, 1-2-seeded. Sepals 5, concave, unequal. Petals 3-5.

5 DELI'MA. Stamens indefinite. Carpel 1, capsular, 1-2-seeded. Sepals 5. Petals 4-5.

6 CURATE'LLA. Stamens numerous. Carpels 2, capsular, 1-2-seeded. Sepals and petals 4-5.

7 TRACHYTE'LLA. Stamens indefinite. Carpels 1-2, baccate, many-seeded. Sepals and petals 4-5.

8 RE'CCHIA. Stamens 10. Ovaries 2. Sepals and petals 5.

TRIBE II.

DILLE'NEÆ. (*D. C. syst.* 1. *p.* 397. *prod.* 1. *p.* 70.) *Filaments of stamens not dilated at the apex* (f. 16. *c.* f. 17. *a.*) *bearing on both sides the elongated oblong cells of the anthers* (f. 17. *e.*).

9 PACHYNE'MA. Stamens 7, 10, free. Filaments broad, and thick at the base (f. 16. *b.*). Ovaries 2 (f. 16. *d.*) or 3; styles awl-shaped (f. 16. *d.*). Sepals and petals 5 (f. 16. *a.*), but the petals soon fall off.

10 HEMISTE'MMA. Stamens indefinite, all leaning to one side (f. 17. *a.*), outer ones sterile, of the form of scales. Ovaries 2 (f. 17. *b.*), styles filiform. Sepals and petals 5 (f. 17. *d.*).

11 PLEURA'NDRA. Stamens 5-20, all leaning to one side and fertile (f. 18. *e.*). Ovaries 2 (f. 18. *c.*); styles filiform. Sepals and petals 5 (f. 18. *a.*).

12 CANDO'LLEA. Stamens indefinite, collected into many bundles. Ovaries 2-5; styles filiform. Sepals and petals 5.

13 ADRASTÆ'A. Stamens 10, free, equal; filaments flat, bearing the oblong cells of the anthers on the margin. Ovaries 2; styles conical-awl-shaped. Sepals and petals 5.

14 HIBBE'RTIA. Stamens indefinite, free, filiform, equal; anthers, oval-oblong. Ovaries from 1-15; styles filiform, inflexed. Sepals and petals 5.

15 WO'RMIA. Stamens indefinite, free, filiform, equal. Ovaries 5, distinct; styles filiform; stigmas emarginate. Sepals and petals 5.

16 COLBE'RTIA. Stamens indefinite, 10-50 of which are much longer than the rest. Ovaries 4-12, joined together into one baccate fruct, crowned by the diverging styles. Sepals and petals 5.

17 CAPE'LLIA. Stamens indefinite, the inner ones much longer than the rest in one row. Capsules membranous, connected together into dry globose fruit. Sepals and petals 5.

18 DILLE'NIA. Stamens indefinite, free, equal (f. 19. *b.*); carpels 10-20, joined together into a spurious, many-celled, baccate fruit (f. 19. *c.*), and crowned by the radiating stigmas (f. 19. *d.*). Sepals and petals 5, both permanent (f. 19. *a.*).

Tribe I.

DELIMA'CEÆ (plants agreeing with Delima in some characters). D. C. syst. 1. p. 397. prod. 1. p. 67. Filaments of stamens dilated at the apex, bearing on both sides the roundish separated cells of the anthers. Styles filiform (f. 15. *d.*), acute. Carpels capsular (f. 15. *a.*), bladder-formed or baccate. Mostly climbing shrubs, seldom trees, with terminal racemes or panicles of flowers (f. 15.).

1 TETRA'CERA (from τετρας, *tetras*, four-fold, and κερας, *keras*, a horn; because of the four capsules, recurved like as many horns. However, the genus has received an accession of

species with 1-5 capsules, which invalidate the strict propriety of its name, and render its situation in the Linnean System truly ambiguous). Lin. gen. no. 683. Gært. fruct. 1. p. 336. t. 69. D. C. syst. 1. p. 397. prod. 1. p. 67.

LIN. SYST. *Diœ'cia or Polygàmia, Polyándria.* Calyx of 4-6 permanent sepals. Petals 3-6, deciduous. Flowers usually dioecious or polygamous, female ones with an indefinite number of stamens, male ones with 1-5, but usually 4, capsular carpels, girded by the imbricate sepals (f. 15. *a.*). Seeds 1 (f. 15. *e.*) or 2, ovate, shining, arillate. Flowers yellow or white. Mostly climbing shrubs rarely erect.

1 T. VOLU'BILIS (Lin. spec. 617.) leaves obovate, blunt, very rough, somewhat toothed at end; flowers panicled, rather loose; peduncles velvety. ♄. ⌒. S. Native of the island of Barbadoes, Brazil, and South America about Panama. Gært. fruct. 1. p. 336. t. 69. f. 3.—Breyn. exot. 20. t. 6. Capsules clothed with some hairs at the apex.

Twining Tetracera. Fl.? Clt. 1818. Shrub. cl.

2 T. OBLONGA'TA (D. C. syst. 1. p. 399.) leaves oblong, blunt, sinuately-toothed, scabrous on both surfaces; flowers crowded, in simple, dense racemes; peduncles smooth. ♄. ⌒. S. Native of Brazil, about Rio Janeiro. Deless. icon. sel. 1. t. 67. Like *T. volúbilis*, but differing from it in the branches and peduncles being very smooth. Capsules 3, smooth. Petals 3, white.

Oblong-leaved Tetracera. Fl. March. Shrub cl.

3 T. LI'MA (Willd. ined. in herb. Bonpl. D. C. syst. 1. p. 399.) leaves oblong, blunt, cuneated at the base, entire, scabrous on both surfaces; peduncles panicled, pubescent. ♄. ⌣. S. Native of Brazil. Petals oblong, blunt, narrow, a little longer than the calyx. The two outer sepals small, the three inner ones connivent and concave.

Rasp-leaved Tetracera. Shrub cl.

4 T. ACUMINA'TA (D. C. syst. 1. p. 399.) leaves oval-oblong, acuminated, serrulated, scabrous on both surfaces; peduncles racemose, pubescent. ♄. ⌣. S. Native of South America? The two outer sepals are very short; the three inner ones orbicular.

Acuminated-leaved Tetracera. Shrub cl.

5 T. HI'SPIDA (Spreng. syst. 2. p. 629.) leaves lanceolate, tapering to both ends, serrulated, smooth above, but discoloured below, and strigose at the veins; peduncles axillary, racemose, and are, as well as the branchlets, hairy. ♄. ⌣. S. Native of Brazil.

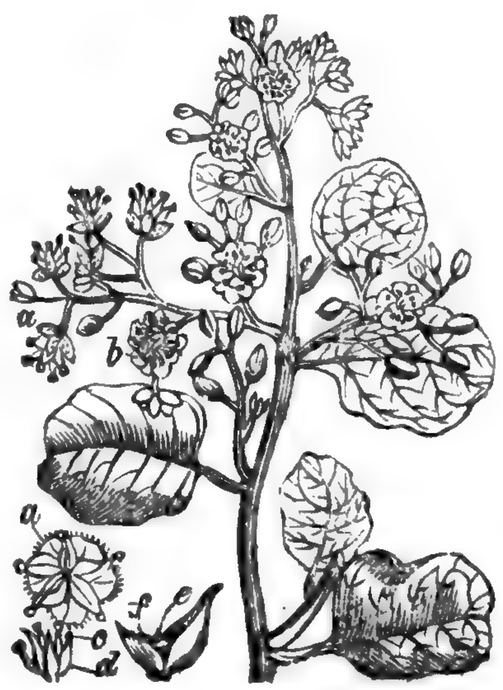
Hispid Tetracera. Shrub cl.

6 T. JAMAICE'NSIS (D. C. syst. 1. p. 399.) leaves oval-oblong, acutish, somewhat serrulated, drawn out at the base along the petioles, smoothish on both surfaces; peduncles racemose, glabrous, rather roughish. ♄. S. Native of Jamaica.

Jamaica Tetracera. Shrub. cl.

7 T. OVALIFO'LIA (D. C. syst. 1. p. 400.) leaves oval, obtuse, quite entire, roughish on both surfaces; peduncles racemosely panicled, somewhat velvety. ♄. ⌣. S. Native of Cayenne. Deless. icon. sel. 1. t. 68. Sepals roundish, exterior ones velvety on the back, interior ones ciliated at their margins (f. 15. *a.*).

FIG. 15.



Oval-leaved Tetracera. Shrub cl.

8 T. ROTUNDIFO'LIA (Smith, in Rees, cycl. vol. 35.) leaves roundish-elliptical, entire, scabrous on both surfaces; panicles terminal; flowers hermaphrodite, with four styles, smooth inside. ♄. S. Native of Guiana. Capsules 3-4, oval, smooth, shining, compressed, inflated, smaller than those of *T. volùbilis*.

Round-leaved Tetracera. Shrub cl.

9 T. MULTIFLO'RA (D. C. syst. 1. p. 400.) leaves oval, rather obtuse, sinuately toothed at the apex, smooth, drawn out along the petiole; panicle many-flowered; pedicels smooth. ♄. S. Native of Para. Deless. icon. sel. 1. t. 69. Flowers monogynous.

Many-flowered Tetracera. Shrub cl.

10 T. ALNIFO'LIA (Willd. spec. 2. p. 1243.) leaves oval-oblong, blunt, or somewhat acute, glabrous, upper surface roughish, under surface smooth, somewhat denticulated at the top; peduncles panicled, somewhat pubescent. ♄. ⌣. S. Native in woods along the coast of Guinea from the river Senegal to Congo. Petals obovate, scarcely longer than the calyx.

Alder-leaved Tetracera. Fl. Jan. Feb. Clt. 1793. Shrub cl.

11 T. POTATO'RIA (Afz.) leaves oblong, glabrous, dark-green, toothed, sessile, somewhat sheathing at the base; panicle large, terminal. ♄. ⌣. S. Native of Sierra Leone on the mountains. Leaves large, sometimes more than half a foot long.

This shrub, when cut across, yields a quantity of clear, wholesome water; hence it has obtained the name of Water Tree in the colony of Sierra Leone.

Drinking Tetracera or Water Tree. Fl.? Clt. 1822. Shrub cl.

12 T. OBOVA'TA (D. C. syst. 1. p. 401.) leaves large, obovate, obtuse, tapering to the base, smooth, entire, brownish velvety on the under surface; flowers panicled. ♄. ⌣. S. Native of the coast of Guinea from the river Senegal to Cape Coast.

Obovate-leaved Tetracera. Fl. Jan. Feb. Clt. 1822. Shrub cl.

13 T. SENEGALE'NSIS (D. C. syst. 1. p. 401.) leaves oval, rather acute, quite entire, smooth; peduncles panicled, many-flowered. ♄. ⌒. S. Native of Senegal. Calyx of 5, nearly orbicular sepals. Petals 3.

Senegal Tetracera. Shrub cl.

14 T. LÆ'VIS (Vahl. symb. 3. p. 71.) leaves oblong, acuminated, nearly entire, smooth; racemes terminal, simple. ♄. S. Native of the East Indies. Capsules 4, roundish, ventricose, mucronate, very smooth, shining.

Smooth Tetracera? Shrub cl.

14 T. EURYA'NDRA (Vahl. symb. 3. p. 71.) leaves oval, obtuse, quite entire, smooth; peduncles paniculately-racemose, pubescent. 5. ⌣. S. Native of New Caledon. Euryándra scándens. Forst. prod. no. 228, gen. no. 41. t. 41. Deless. icon. sel. 1. t. 70. Petals 3, oblong, longer than the calyx.

Broad-stamened Tetracera. Shrub cl.

16 T. RHEE'DII (D. C. syst. 1. p. 402.) leaves oblong, acuminated at both ends, quite entire, smooth; panicle branched, somewhat dichotomous; flowers of 4 sepals. ♄. ⌣. S. Native of Malabar in mountainous and rocky places. Acara-pats jotti. Rheed. mal. 5. p. 15. t. 8. Very like *T. Assa*, but differing from it in the leaves being large, oblong, and entire. Flowers white, sweet-scented; anthers flesh-coloured. Carpels dark-red, shining.

Rheede's Tetracera. Fl. Sept. Oct. Shrub cl.

17 T. A'SSA (D. C. syst. 1. p. 402.) leaves oval, acuminated at both ends, a little denticulated, upper surface smooth, under surface, as well as peduncles, pubescent; panicle 4-5 flowered; sepals 4, smoothish. ♄. ⌣. S. Native of the East Indies. T. Malabàrica, Lam. ill. t. 485. f. 1. A'ssa exótica, Gmel. syst. 839. Ay-assa, Rumph. amb. 7. p. 20?

Ay-assa Tetracera. Shrub cl.

18 T. WAHLBO'MIA (D. C. syst. 1. p. 403.) leaves elliptical, acuminated at the top, and serrated, stipulate at base, with the under surface, as well as peduncles, pubescent; panicle 4 or 5-flowered; sepals 4, villous on the outside. ♄. S. Native of Java. Wahlbòmia I'ndica. Thunb. act. holm. 1790. p. 215. t. 9. Lam. ill. t. 485.

Wahlbom's Tetracera. Shrub cl.

19 T. TIGA'REA (D. C. syst. 1. p. 403.) leaves roundish, somwehat repand, rough on both surfaces as well as branches; panicles, branched, many-flowered. ♄. ◠. S. Native of Guiana and Cayenne in woods. Tigàrea áspera, Aubl. guian. 2. p. 920. t. 350. Tetr. áspera, Willd. spec. Calyx persistent, outer sepals a little reflexed, inner ones conniving. This species, as well as the following, is called *Liane rouge* in French Cayenne, from its colour in an infusion of water, which the natives consider a remedy for syphilis. Flowers monogynous with 4 white petals. *Tigàrea* is the name of this plant in Guiana.

Tigarea Tetracera. Fl. Jan. Shrub cl.

20 T. TOMENTO'SA (Willd. spec. pl. 2. p. 1241.) leaves ovate, acuminated, toothed, upper surface smooth, under surface, as well as the branches, are tomentose. ♄. ◡. S. Native of Cayenne in woods. Tigàrea dentàta, Aubl. Guian. 2. p. 920. t. 351. Flowers white, monogynous.

Tomentose Tetracera. Fl. Jan. Shrub cl.

21 T. CUSPIDA'TA (Mey. prim. fl. esseq. p. 205.) leaves oval-oblong, with cuspidate serratures, under surface tomentose; peduncles 1-flowered, in axillary fascicles. ♄. ◡. S. Native of the island of Arowabish in Guiana in dry woods. Flowers monogynous.

Cuspidate-toothed Tetracera. Shrub cl.

22 T. SERI'CEA (Blum. bijd. fl. ned. ind. ex Schlecht. Linnæa 1. p. 491.) leaves oblong, acuminated, acute at the base, serrulated at the apex, pubescent beneath, as well as the branchlets and pedicels; racemes 4-5-flowered; flowers trigynous; sepals and petals silky on the inside. ♄. ◡. S. Native of Java.

Silky-flowered Tetracera. Shrub cl.

23 T. ERE'CTA (Sesse, et Moc. fl. mex. icon. et D. C. syst. 1. p. 404.) leaves obovate, rather bluntish at end, acutely toothed, attenuately-cuneated at the base; panicle much branched. ♄. S. Native of Mexico. The flowers are either hermaphrodite, polygamous or monoecious.

Erect Tetracera. Shrub 10 feet.

24 T. LU'TEA (Spreng. neue. entd. 1. p. 164.) leaves elliptical-oblong, quite entire, shining; peduncles lateral, racemose. ♄. S. Native of Brazil. Calyx coloured. Corolla yellow. Flowers monogynous. Capsules 3.

Yellow-flowered Tetracera. Shrub cl.

25 T. PERRINIA'NA (Spreng. neue. entd. 1. p. 164.) leaves elliptical, shining on both surfaces, obsoletely serrulated; corymbs of flowers axillary. ♄. S. Native of South America? Calyx 4-5-sepals. Corolla white. Flowers monogynous. Capsules 4.

Perrin's Tetracera. Shrub. cl.

26 T. ARBORE'SCENS (Mal. misc. 1. no. 2. p. 45.) leaves obovate, quite entire, smooth; flowers disposed in axillary and terminal panicles. ♄. S. Native of Sumatra. Arillus jagged, yellowish.

Arborescent Tetracera. Shrub 16 feet.

27 T. DICHO'TOMA (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 492.) leaves elliptical, acute at both ends, toothletted from the middle to the apex, with the veins on the under surface, as well as the pedicels pubescent; peduncles sub-dichotomous; sepals smooth and ciliated. ♄. ◡. S. Native of Java. Flowers trigynous, subumbellate.

Dichotomous-peduncled Tetracera. Shrub cl.

28 T. GRA'CILIS (Blum. l. c.) leaves oval, acute at both ends, serrulated at the apex, rather villous beneath, as well as the branchlets and pedicels; peduncles 1-2-flowered; sepals 4, ciliated. ♄. ◡. S. Native of Java. Flowers trigynous.

Slender Tetracera. Shrub cl.

29 T. RI'GIDA (Blum. l. c.) leaves oval, tapering to both ends, repand at the apex, stiff, scabrous beneath; panicle divaricating, tomentose; sepals and petals silky-villous on the inside. ♄. ◡. S. Native of Java. Flowers trigynous.

Stiff-leaved Tetracera. Shrub cl.

30 T. FAGIFO'LIA (Blum. l. c.) leaves ovate-elliptical, acute, serrated at the apex, scabrous beneath; panicle compound, pyramidal, tomentose; sepals and petals ciliated. ♄. ◡. S. Native of Java. Flowers trigynous.

Beech-leaved Tetracera. Shrub cl.

Cult. Handsome shrubs, well adapted for covering rafters in stoves. They succeed best in a mixture of turfy loam and peat, and ripened cuttings will strike root freely if planted in a pot of sand and placed in heat under a hand-glass.

II. DAVI'LLA (in honour of Henry Catherine Davilla, a celebrated Italian historian, died 1599.) Vand. fl. lus. et bras. prod. 115. t. 2. f. 14. D. C. syst. 1. p. 404. prod. 69.

LIN. SYST. *Polyándria, Mono-Digýnia.* Calyx of 5 permanent sepals, the three outer ones small. Petals 2-3, deciduous. Stamens indefinite. Carpels 1-2, capsular, indehiscent, testaceous, 1 or 2-seeded, inclosed by the two interior joined, concave, opposite, valvæform sepals. Seed somewhat globose. The habit of the shrubs is very near *Tetrácera* or *Delíma*, and appears to be the link between these two genera.

1 D. FLEXUO'SA (St. Hil. fl. bras. 1. p. 17. t. 2.) plant quite smooth; leaves elliptical, obtuse at both ends, quite entire, coriaceous; racemes nearly simple; carpels 3, opening irregularly. ♄. S. Native of Brazil, at the mouth of the Rio Doce near the Fort called *Quartel da Regencia.* An upright shrub, branching from the base; branches reddish and flexuous. Leaves 2-3-inches long. Flowers yellow.

Flexuous-branched Davilla. Shrub 6 feet.

2 D. ELLI'PTICA (St. Hil. fl. bras. 1. p. 17.) stem erect, much branched, leaves elliptical, quite blunt at both ends, quite entire, coriaceous, rough above, but pubescent beneath and reticulately veined; petioles villous beneath; racemes villous, bracteate; calyxes silky; petals 1-6 rather obcordate; pistils twin. ♄. S. Native of Brazil in the province of Minas Novas, where it is called by the natives *Cambaibinha*, and is considered by them to be a vulnerary. The natives of Brazil usually wash wounds with a decoction of Quinquina; in the Certao or Great Desert they make a similar use of the inner bark of this shrub, as well as that of *Curatella Cabàiba.* It is a powerful astringent.

Elliptical-leaved Davilla. Fl. May. Shrub 6 feet.

3 D. CASTANEÆFO'LIA (St. Hil. fl. bras. 1. p. 17.) branches rather hairy; leaves oblong-elliptical, quite obtuse at the base, somewhat pointed at the apex, remotely serrated, and furnished with parallel nerves, pilose above, pubescent beneath, and reticulately veined, rather wrinkled on both surfaces; calyx silky; petals 5, obcordate; pistils twin. ♄. S. Native of Brazil in the province of St. Paul in grassy fields. Shrub branched from the base. Flowers yellow.

Var. β, *floribúnda* (St. Hil. fl. bras. 1. p. 18.) leaves broader, shorter, and blunt, less toothed, and the flowers more crowded and smaller than in the species.

Chesnut-leaved Davilla. Fl. May. Shrub 3-5 feet.

4 D. RUGO'SA (Poir. dict. suppl. 2. p. 457.) stem climbing; branches hairy; leaves oblong, very remotely and obsoletely serrated, wrinkled above and villous beneath on the nerves; petioles very villous beneath; peduncles and pedicels hairy; petals 2-3; pistils usually only 1. ♄. ◡. S. Native of Brazil from the mouth of the Rio Doce to the confines of the province of St. Catherine, and in the province of Rio Janeiro, where it is called *Cisso de Carijo*, in the province of Minas Geraes *Cambaibinha*, and in the southern parts of St. Paul *Cipo de Coboclo.* St. Hil. pl. usu. bras. t. 23. D. Braziliàna, D. C. syst. 1. p. 405. Deless. icon. sel. 1. t. 71. but not of Kunth. Flowers yellow. The natives of the interior make use of the pliant stems of this plant for bands, and they employ a fomentation of the leaves for

the purpose of allaying swellings of the legs, so common in that country.

Wrinkled-leaved Davilla. Fl. May, July. Shrub cl.

5 D. macrophy'lla (St. Hil. fl. bras. 1. p. 18.) stem climbing; branches roughish; leaves oblong-elliptical, acuminated, repand, smooth, but pilose on the nerves beneath; petals 5, quite entire; pistil 1. ♄. ◡. S. Native of Brazil in the northern parts of the province of Minas Geraes called Minas Novas. Flowers yellow.

Long-leaved Davilla. Fl. July. Shrub cl.

6 D. angustifo'lia (St. Hil. fl. bras. 1. p. 19.) stem climbing; branches villous; leaves oblong-linear, acute, quite entire, smooth on both surfaces, but pilose on the nerves beneath; petioles villose; petals 3, obcordate; pistils twin. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers yellow.

Narrow-leaved Davilla. Fl. March. Shrub cl.

Cult. Fine upright or climbing shrubs, requiring the same treatment as that recommended for *Tetràcera*.

III. EMPEDO'CLEA (to the memory of Empedocles, a famous philosopher of Agrigentum in Sicily, who, among other things, wrote on the nature of plants.) St. Hil. fl. bras. 1. p. 19.

Lin. syst. *Polyándria, Monogýnia.* Calyx of many ovate permanent sepals, usually 13, closely imbricated and very obtuse. Petals 3, hypogynous, deciduous. Stamens indefinite. Ovary 1, oblong, pyramidal, trigonal, with one of the angles bearded, 1-celled, 6-seeded. Fruit baccate, crowned by one awl-shaped style.—A shrub with simple leaves and white flowers.

1 E. alnifo'lia (St. Hil. fl. bras. 1. p. 20. t. 3.) ♄. S. Native of Brazil in the province of Minas Geraes, among bushes in humid places. An erect shrub, with broad-elliptical leaves, which are blunt at both ends, and running into the petiole at the base, coarsely serrated, smooth above but rusty beneath. Racemes terminal and rising from the axils of the upper leaves.

Alder-leaved Empedoclea. Shrub 4 feet.

Cult. This handsome shrub will grow well in a mixture of loam and peat, and ripened cuttings will strike root, if planted in a pot of sand and placed under a hand-glass, in heat.

IV. DOLIOCA'RPUS (from δολιος, *dolios*, deceitful, καρπος, *karpos*, a fruit; because though beautiful are poisonous). Roland. act. holm. 1759. p. 249. t. 9. D. C. syst. 1. p. 405. prod. 1. p. 69.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5, concave, unequal, permanent sepals. Petals 3-4, roundish, deciduous. Stamens indefinite. Carpel 1, baccate, 1 or 2-seeded. Mostly sarmentose shrubs, with the appearance of *Tetràcera*.

1 D. rola'ndri (Gmel. syst. 805.) scandent; leaves oblong, acuminated, toothed at the apex; peduncles lateral, 1-flowered, glomerate; flowers 3-petalled. ♄. ◡. S. Native of Surinam, and Brazil in the province of Minas Geraes.—Rol. act. holm. 1756. p. 260. t. 9. f. 1-2-3. Tetràcera doliocárpus, Willd. spec. 2. p. 1241. D. scándens, Poir. suppl. 2. p. 497. Flowers white, axillary glomerate. (St. Hil.)

Rolander's Doliocarpus. Fl. May, Oct. Shrub cl.

2 D. stri'ctus (Poir. suppl. 2. p. 498.) stem strict; leaves ovate-lanceolate, toothed, deflexed; flowers terminal, 3-petalled. ♄. S. Native of Surinam. Tetràcera stricta, Willd. spec. 2. p. 1241. D. màjor, Gmel. syst. 805.

Upright Doliocarpus. Shrub 6 feet.

3 D. Cali'nea (Gmel. syst. 805.) stem scandent; leaves oblong, acuminated, quite entire; peduncles lateral, many-flowered: flowers 3-petalled. ♄. ◡. S. Native of Guiana in woods. Calìnea scándens, Aubl. guian. 1. p. 556. t. 221. Tetràcera scándens, Willd. spec. 2. p. 1241. Soràmia, Lam. ill. t. 463. f. 2. Petals white. The name Calinea is of doubtful origin, it is perhaps the name of the shrub in Guiana.

Calinea Tetracera. Fl. April. Clt. 1822. Shrub cl.

4 T. Sora'mia (D. C. syst. 1. p. 406.) stem scandent, leaves obovate, quite entire; peduncles lateral, somewhat corymbose; flowers 5-petalled. ♄. ◡. S. Native of Guiana on the banks of the river Sinemari. Soràmia Guianénsis, Aubl. guian. 1. p. 552. t. 219. Tetràcera obovàta, Willd. spec. 2. p. 1241. Máppia Schreb. gen. no. 1755. Berries about the size and colour of a cherry. Petals white. *Soramia* is the name of this shrub in Guiana.

Soramia Doliocarpus. Fl. May. Shrub cl.

Cult. A genus of fine upright, or climbing shrubs, requiring the same treatment as that recommended for *Tetràcera*.

V. DELI'MA (from *delimo*, to file or shave off; because the leaves of some of the species are used for polishing). Lin. amœn. 1. p. 403. Juss. gen. p. 339. Gært. fruct. 2. p. 112. t. 106. D. C. syst. 1. p. 406. prod. 1. p. 69.

Lin. syst. *Polyándria, Monogynia.* Calyx of 5 permanent sepals. Petals 3-5, roundish, deciduous. Stamens indefinite. Carpel 1, capsular, 1-2-seeded. Flowers sometimes dioecious from abortion. Climbing shrubs, with the habit of *Tetràcera*.

1 D. sarmento'sa (Lin. spec. 736.) leaves ovate-oblong, serrated, rigid, scabrous; flowers hermaphrodite, panicled, apetalous; ovaries and capsules smooth. ♄. ◡. S. Native of the island of Ceylon. Burm. ind. 122. t. 37. f. 1. Tetràcera sarmentòsa, Vahl. symb. 3. p. 70. This shrub is called in Ceylon *Koroswael* and *Korossawael*, from the verb *Korossa*, to smooth, in allusion to the leaves, which are used for polishing utensils.

Sarmentose Delima. Fl. Clt. 1820. Shrub. cl.

2 D. tripe'tala (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 492.) leaves obovate, mucronately toothed at the apex; flowers hermaphrodite, panicled, 3-petalled; capsule pubescent. ♄. ◠. S. Native of Java.

Three-petalled Delima. Shrub cl.

3 D. castaneæfo'lia; leaves crowded, oblong, serrated, smoothish; flowers lateral, sessile. ♄. ◡. S. Native of Brasil. O'thlis. castaneæfòlia, Schott. in Spreng. syst. app. 407. Calyx of 5 permanent sepals and 2-bracteas, they are imbricate and concave. Petals 5, deciduous. Anthers linear, continuous, with lateral very slender cells. Capsules usually 1-seeded. Seeds arillate. A rambling shrub.

Chesnut-leaved Delima. Shrub cl.

4 D. interme'dia (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa, 1. p. 492.) leaves oval, hardly acute at the ends, repand-serrated at the apex; stiff, scabrous; panicle compound, leafy; flowers hermaphrodite, 5-petalled; ovaries and capsules pubescent. ♄. ◡. S. Native of Java.

Intermediate Delima. Shrub cl.

5 D. hebeca'rpa (D. C. syst. 1. p. 407.) leaves obovate, somewhat crenulate, scabrous; flowers hermaphrodite, panicled, 5-petalled; ovaries and capsules pubescent. ♄. ◡. S. Native of Java and the Philippine Islands. Deless. icon. sel. 1. t. 72. Seeds semi-arillate. This shrub is called in the Philippine islands *Bois de rape*, in allusion to the use of its leaves for polishing.

Downy-fruited Delima. Shrub cl.

6 D. Mexica'na (Sesse et Moc. fl. mex. icon. ined. D. C. syst. 1. p. 407.) leaves oval, bluntish, tapering a little to the base, smooth, serrated; flowers dioecious, panicled, 5-petalled, disposed in sessile fascicles along the branches. ♄. ◡. S. Native of Mexico. Petals white. Seed ovate, thick, netted.

Mexican Delima. Shrub cl.

7 D. Guianensis (Rich. in D. C. syst. 1. p. 408.) leaves oblong, acuminated at both ends, smooth, somewhat serrated; flowers dioeceous, axillary, on short pedicels; fruit globose, pu-

bescent. ♄. ◡. S. Native of Guiana. Male flowers unknown. Perhaps a species of *Doliocárpus*.

Guiana Delima. Shrub cl.

8 D. NI'TIDA (Vahl. symb. 3. p. 70.) leaves lanceolate-oblong, scabrous, quite entire; flowers hermaphrodite, panicled, 4-petalled. ♄. ◡. S. Native of the island of Trinidad. Style length of stamens; stigma somewhat peltate.

Shining-leaved Delima. Shrub cl.

9 D.? PIRI'PU (D. C. syst. 1. p. 408.) leaves oval-oblong, soft, with the margins undulately-crenated; flowers panicled, hermaphrodite, pentandrous. ♄. S. Cultivated about Pananie, &c. in Malabar. Piripu, Rheed. mal. 7. p. 101. t. 54. Flowers white, 5-petalled.

Piripu Delima. Fl. December. Shrub cl.

Cult. A genus of fine climbing shrubs. The species will thrive in a mixture of loam peat and sand, and ripened cuttings will strike root if planted in a pot of sand with a hand-glass placed over them, in heat.

VI. CURATE'LLA (from *curatus*, worked; because the leaves, which have a rough surface, are used in Guiana for polishing bows, sabres, and other weapons.) Lin. gen. no. 679. Lam. ill. t. 479. Juss. gen. 282. D. C. syst. 1. p. 409. prod. 1. p. 70.

Lin. syst. *Polyándria, Digýnia.* Calyx of 4-5-spreading unequal sepals. Petals 4-5, roundish, deciduous. Stamens indefinite. Carpels 2, capsular, 1 or 2-seeded. Seeds ovate, shining.—Small shrubs, with ovate rough leaves, winged petioles, and white flowers.

1 C. America'na (Lin. spec. 248.) leaves ovate, repand, and somewhat denticulated, very rough, running along the petiole at the base; racemes issuing from the adult branches. ♄. S. Native of South America, particularly Guiana and Peru. Aubl. guian. 1. p. 579. t. 232. Lam. ill. t. 479. Petals white. The leaves of this species are used in Cayenne for polishing wood. The bark is thick, wrinkled, and cracked, and falls off in large pieces.

American Curatella. Fl. Aug. Clt.? Shrub 10 feet.

2 C. Caba'iba (St. Hil. fl. bras. 1. p. 22. pl. usu. bras. t. 24.) leaves broad, very blunt, more or less repand-toothed, wrinkled above, downy beneath; racemes compound, lateral, and are as well as the pedicels and calyx villous. ♄. S. Native of Brasil, where it is called *Cabaiba*, and where the inhabitants employ the inner bark in the cure of wounds.

Cabaiba Curatella. Shrub 6 feet.

3 C. ala'ta (Vent. choix. p. 49.) leaves oval, quite entire, smooth; blunt at both extremities; petioles winged; panicle terminal. ♄. S. Native of Guiana. Perhaps a species of *Wòrmia*.

Wing-petioled Curatella. Fl.? Clt.? Shrub 10 feet.

Cult. A genus of fine shrubs. The species will grow well in a mixture of loam and peat, and ripened cuttings will root freely if planted in a pot of sand with a hand-glass placed over them, in heat.

VII. TRACHYTE'LLA, (from τραχυτης, *trachytes*, roughness; because the leaves, which have a very rough surface, are used for polishing wood as well as metal). D. C. syst. 1. p. 410. prod. 1. p. 70.

Lin. syst. *Polyándria, Mono-Digýnia.* Calyx of 4-5 permanent sepals. Petals 4-5, deciduous. Stamens indefinite. Carpels 1 or 2, baccate, many-seeded. A perfectly doubtful genus, which was only known to Loureiro.—Climbing shrubs with rough leaves and racemes of white flowers.

1 T. Actæ'a (D. C. syst. 1. p. 410.) leaves lanceolate, somewhat serrated; racemes spiked, linear, interrupted. ♄. ◡. G. Native of uncultivated places near Canton in China. Actæ'a áspera, Lour. cochin. ed Willd. 1. p. 405. The leaves of this species are used in China for polishing works of wood as well as of metal.

Actæa-like Trachytella. Shrub cl.

2 T. calli'gonum (D. C. syst. 1. p. 410.) leaves ovate, quite entire; racemes somewhat divided. ♄. ◡. G. Native of Cochin China in woods. Callígonum ásperum. Lour. cochin. ed Willd. 1. p. 418. The name is derived from καλλος, *kallos*, beauty, and γονυ, *gonu*, a knee or joint; because the leaves are jointed, which gives the plant a very remarkable appearance.

Beautiful-jointed Trachytella. Shrub cl.

Cult. A mixture of loam and peat will probably suit these plants, and ripened cuttings will probably root if planted in a pot of sand, with a hand-glass placed over them.

VIII. RE'CCHIA (in honour of Nardo Antonio Reccho, who arranged Hernandez Mexico). Sesse et Moc. fl. mex. icon. ined. and D. C. syst. 1. p. 411. prod. 1. p. 70.

Lin. syst. *Decándria, Digýnia.* Calyx of 5, equal, spreading sepals. Petals 5, oblong, deciduous. Stamens 10. Ovaries 2. Shrub with twisted angular branches, and yellow flowers.

1 R. Mexica'na (Sess. et Moc. l. c.) ♄. S. Native of Mexico. Leaves oval or oblong. Flowers somewhat racemose along the superior branches.

Mexican Recchia. Shrub cl.

Cult. A mixture of loam and peat will suit this shrub, and ripened cuttings will root if planted in a pot of sand with a hand-glass placed over them, in heat.

Tribe II.

DILLE'NEÆ (plants agreeing with *Dillènia* in some characters). Sal. par. lond. no. 73. D. C. syst. 1. p. 411. prod. 1. p. 70.

Filaments of stamens not dilated at the apex, but somewhat tapering (f. 16. *a.* & f. 17. *a.*), anthers elongated, adnate (f. 17. *c.*); carpels usually from 2 (f. 16. *d.*) to 5, distinct; rarely solitary, or from 5-20, joined (f. 19. *c.*). Trees, shrubs, or subshrubs, very rarely scandent.

IX. PACHYNE'MA (παχυς, *pachys*, thick, νεμα, *nema*, a filament; filaments very thick). R. Br. in D. C. syst. 1. p. 411. prod. 1. p. 70.

Lin. syst. *Heptándria Digýnia* or *Decándria Trigýnia.* Petals 5, ovate (f. 16. *a.*), soon falling off. Stamens 7 (f. 16. *a.*) 10; filaments very thick at the base (f. 16. *b.*), erect, tapering to the top (f. 16. *a.*); anthers ovate, adnate at the top of narrowed filaments (f. 16. *c.*), distinct conniving or parallel. Ovaries 2 (f. 16. *d.*) 3, ovate, each ending in an awl-shaped style (f. 16. *d.*). Fruit unknown.

1 P. complana'tum (R. Br. in D. C. syst. 1. p. 412.) ♄. G. Native of Carpentaria. Deless. icon. sel. 1. t. 73. A little leafless shrub with the habit of *Ephèdra*; branches compressed, toothed on the margins with the flowers rising from the axils of these teeth either singly or in pairs (f. 16.).

Flat-branched Pachynema. Clt.? Shrub 1 foot.

Cult. This shrub will thrive well on a mixture of loam and peat, and cuttings will strike root freely in sand under a hand-glass.

FIG. 16.

X. HEMISTE'MMA (ἡμι, *hemi*, half, στεμμα, *stemma*,

a crown; because the stamens are all inserted in the side of one of the pistils, not around them). Juss. ined. D. C. syst. 1. p. 412. prod. 1. p. 71.

Lin. syst. *Polyándria, Digýnia.* Calyx of 5, permanent sepals. Petals 5, obtuse or emarginate. Stamens indefinite, unilateral (f. 17. *a.*). exterior ones sterile, scale-formed. Ovaries 2; styles filiform. Seed girded by a membranous arillus. Albumen fleshy.—Small elegant shrubs with yellow flowers.

§ 1. *Oppositifòlia. Sterile stamens spatulate at the top; petals emarginate.—Species from Madagascar.*

1 H. Commerso'nii (D. C. syst. 1. p. 413.) leaves opposite, oval-oblong, mucronated; peduncles tomentose. ♄. S. Native of Madagascar. Deless. icon. sel. 1. t. 74. Heliánthemum coriàceum, var. a, Pers. ench. 2. p. 76. Calyxes woolly.

Commerson's Hemistemma. Shrub 1 foot.

2 H. Aube'rtii (D.C. 1. p. 413.) leaves opposite, oblong-lanceolate, tapering to the base, acute at the top; peduncles smoothish. ♄. S. Native of Madagascar. Deless. icon sel. 1. t. 75. Heliánthemum coriàceum, var. β, angustifòlium. Pers. ench. 2. p. 76. Calyxes clothed with silky down. This shrub is called in Madagascar *Angzavidi.*

FIG. 17.

Aubert's Hemistemma. Shrub 1 foot.

§ 2. *Alternifòlia. Sterile stamens linear. Petals blunt.—Species from New Holland.*

3 H. dealba'tum (R. Br. in D. C. syst. 1. p. 413.) leaves alternate, obovate-oblong, tapering to the base, blunt and mucronate at the top, under surface white from pubescence. ♄. G. Native of Arnheim Land in New Holland. Deless. icon. sel. 1. t. 76.

Whitened Hemistemma. Shrub 1 foot.

4 H. Ba'nksii (R. Br. in D. C. syst. 1. p. 414.) leaves alternate, oblong, narrowed at the base, blunt at the top, under surface tomentose. ♄. G. Native of New Holland at Endeavour River. Flowers sessile, secund.

Sir Joseph *Banks's* Hemistemma. Shrub 1 foot.

5 H. angustifo'lium (R. Br. in D. C. syst. 1. p. 414.) leaves alternate, long, linear, acute, under surface whitened. ♄. G. Native of Arnheim Land in New Holland. Deless. icon. sel. 1. t. 77. Peduncles about the length of the leaves. Flowers secund.

Narrow-leaved Hemistemma. Shrub 1 foot.

6 H.? Lechenau'ltii (D. C. syst. 1. p. 414.) leaves alternate oblong, tapering to the base, truncate at the top, somewhat emarginate, under surface whitened. ♄. G. Native of New Holland and the island of St. Francisco. Flowers small, axillary solitary, on very short pedicels.

Leschenault's Hemistemma. Shrub 2 feet.

Cult. This is a genus of elegant little shrubs, with the appearance of *Heliánthemum;* they will thrive best in an equal mixture of sand, loam, and peat, and cuttings will root readily under hand-glasses in the same kind of soil. Those species natives of Madagascar require the heat of a stove.†

XI. PLEURA'NDRA (from πλευρον, *pleuron*, a side, and ανηρ, *aner*, a male; in allusion to the stamens being all inserted in one side of the flower). Lab. nov. holl. 2. p. 5. t. 143 and 144. D. C. syst. 1. p. 415. prod. 1. p. 71.

Lin. syst. *Pent.—Hept.—Oct.—Dec.—Polyándria, Digýnia.* Calyx of 5, oval, permanent sepals. Petals 5, usually obcordate. Stamens 5-20, unilateral (f. 18. *c.*), all fertile. Styles filiform. Carpels 2, membranous, 1-2-seeded. Small shrubs, with solitary yellow flowers seated on the tops of the branches, and entire leaves. Petals emarginate (f. 18. *b.*) This is one of those genera which renders the Linnean system truly ambiguous. It contains Pentandrous, Hexandrous, Heptandrous, Octandrous, Decandrous, and Polyandrous plants.

§ 1. *Daphnoìdeæ (plants with the habit of Dáphne) D. C. syst. 1. p. 415. Stamens free. Leaves oblong or obovate, rather large, flat, smooth.*

1 P. bractea'ta (R. Br. in D. C. syst. 1. p. 415.) leaves oblong, smoothish, mucronulate; bracteas crowded about the sessile flowers, which are villous on the outside; ovaries very hairy. ♄. G. Native of New Holland about Port Jackson. Deless. icon. sel. 1. t. 78. A beautiful shrub, with the habit of *Dáphne collìna.* Leaves sometimes broad, sometimes narrow. Stamens 12.

Bracteated Pleurandra. Fl. May, June. Clt. 1823. Sh. 2 ft.

2 P. ni'tida (R. Br. in D. C. syst. 1. p. 416.) leaves oblong, smooth, mucronate; bracteas few, somewhat scariouse, smooth; ovaries tomentose. ♄. G. Native of New Holland about Port Jackson. Very like *P. bracteàta,* but all its parts are smooth except the ovaries. Stamens 7-8.

Shining Pleurandra. Fl. May, June. Clt. 1823. Sh. 2 ft.

3 P. Cneo'rum (D. C. syst. 1. p. 416.) leaves oblong, obtuse, narrowed at the base, and are, as well as the bracteas and calyxes, smooth; ovaries smoothish. ♄. G. Native of New Holland, in brushy situations on the King's Table Land. Like *P. bracteàta.* Flowers sessile. Stamens 12-15.

Widow-Wale like Pleurandra. Fl. May, June. Clt. 1824. Shrub 2 feet.

§ 2. *Alyssoìdeæ (plants with the habit of Alyssum) D. C. syst. 1. p. 416. Stamens free. Leaves oblong or obovate, velvety with starry pubescence on both surfaces, or only on the under surface.*

4 P. seri'cea (R. Br. in D. C. syst. 1. p. 416.) leaves oblong, with revolute margins, upper surface pilose, under surface velvety; branches hairy; flowers sessile. ♄. G. Native of New Holland on the eastern shore at Port Philip. Deless. icon. sel. 1. t. 79. Flowers solitary, terminal, sessile among the leaves. Stamens 7-8.

Silky Pleurandra. Shrub 2 feet.

5 P. astrotri'cha (Sieb. pl. nov. holl. ex Spreng. syst. app. p. 191.) leaves spatulate-linear, rough, rather hairy; branchlets clothed with starry, powdery pubescence; peduncles bractless, nodding; sepals acute. ♄. G. Native of New Holland.

Starry-haired Pleurandra. Shrub 2 feet.

6 P. cine'rea (R. Br. in D. C. syst. 1. p. 417.) leaves oblong, with revolute margins, velvety on both surfaces; branches somewhat villous; flowers solitary on short pedicels. ♄. G. Native of a place called Memory Cove on the southern coast of New Holland. Stamens 7-8.

Cinereous Pleurandra. Shrub 2 feet.

7 P. furfura'cea (R. Br. in D. C. syst. 1. p. 417.) leaves oblong, flat, blunt; upper surface somewhat scabrous, under surface velvety-tomentose; branches velvety; flowers on pedicels. G. Native of New Holland at King George's Sound. Pedicels an inch long, clothed with starry hairs. Stamens 8-10.

Chaffy Pleurandra. Shrub 2 feet.

8 P. parviflo'ra (R. Br. in D. C. syst. 1. p. 417.) leaves obovate, cuneated at the base; upper surface scabrous, under surface velvety, as well as branches; flowers on pedicels. ♄. G.

Native of New Holland near Port Jackson. Flowers small, 3-lines in diameter. Stamens 3-5.

Small-flowered Pleurandra. Shrub 2 feet.

§ 3. *Hibbertiànæ (plants with the habit of Hibbértia). D. C. syst. 1. p. 418. prod. 1. p. 72. Stamens free at the base. Leaves linear or oblong, small, spreading, smooth or scabrous with simple hairs, but not with starry hairs. as in the preceding section.*

9 P. ovà'ta (Lab. nov. holl. 2. p. 5. t. 143.) leaves ovate, obtuse, upper surface somewhat scabrous, under surface smooth; flowers on pedicels; calyx rather pilose; ovaries pilose. ♄. G. Native of Van Diemen's Land. Pedicels terminal, slender, naked, 1-flowered. Stamens 9-12.

Ovate-leaved Pleurandra. Shrub 2 feet.

10 P. sca'bra (R. Br. in D. C. syst. 1. p. 418.) leaves oblong, blunt; upper surface scabrous, under surface somewhat canescent; flowers on pedicels; calyx smoothish; ovaries tomentose. ♄. G. Native of New Holland near Port Jackson. Stamens 7-8.

Var. α, leaves oblong-linear.

Var. β, leaves oblong-oval: P. ovàta, var. Lab. nov. holl. 2. p. 5. t. 143? Perhaps a proper species between *P. scàbra* and *P. ovàta.*

Scabrous Pleurandra. Shrub 2 feet.

11 P. camforo'sma (Sieb. pl. nov. holl. ex Spreng. syst. app. 191.) leaves in fascicles, filiform, pilose; branches white with hairs; flowers solitary, sessile; sepals smooth, mucronate. ♄. G. Native of New Holland.

Camphor-scented Pleurandra. Shrub 1 foot.

12 P. ripa'ria (R. Br. in D. C. syst. 1. p. 419.) leaves linear, bluntish, almost smooth, with subrevolute margins; flowers sessile; calyx smooth; ovaries hairy. ♄. G. Native of New Holland and on the banks of rivers in Van Diemen's Land. Stamens 5-7.

River-bank Pleurandra. Shrub 2 feet.

13 P. microphy'lla (Sieb. l. c.) leaves crowded, rather terete, obtuse, 4-furrowed, hoary-pubescent; peduncles short, solitary, pubescent; sepals bluntish. ♄. G. Native of New Holland.

Small-leaved Pleurandra. Shrub 1 foot.

14 P. pedunculà'ta (R. Br. in D. C. syst. 1. p. 419.) leaves linear, blunt, smooth, with subrevolute margins; flowers on pedicels; calyx and ovaries smooth. ♄. G. Native of the southern coast of New Holland, near a place called Lucky Bay, and Van Diemen's Land. Stamens 7-8; filaments very long.

Peduncled-flowered Pleurandra. Shrub 2 feet.

15 P. empetrifo'lia (D. C. syst. 1. p. 420.) leaves linear, blunt, upper surface somewhat shining, under surface velvety; flowers on pedicels; calyx smoothish; ovaries hairy; stamens 5. ♄. G. Native of New Holland. Pedicels very slender, a little longer than the leaves.

Empetrum-leaved Pleurandra. Shrub 1 foot.

16 P. interme'dia (D. C. syst. 1. p. 420.) leaves linear, obtuse, with subrevolute margins, upper surface somewhat shining, under surface a little pubescent; flowers on pedicels; calyx smooth; ovaries hairy; stamens 10-15, scattered. ♄. G. Native of New Holland on the mountains. Flowers small; inner sepals with membranous margins.

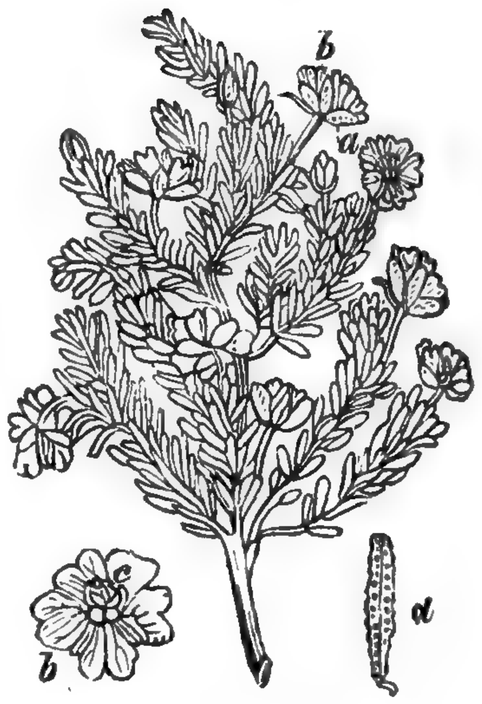
Intermediate Pleurandra. Shrub 2 feet.

17 P. ericæfo'lia (D. C. syst. 1. p. 420.) leaves linear, bluntish, with somewhat revolute margins, upper surface scabrous, under surface pubescent; flowers sessile; calyx somewhat villose; ovaries hairy. ♄. G. Native of New Holland. The plant has the appearance of *Hibbértia pedunculàta.* Stamens 10-12.

Heath-leaved Pleurandra. Fl. May. Clt. 1824. Sh. 2 ft.

18 P. hypericoi'des (D. C. syst. 1. p. 421.) leaves linear, blunt, with revolute margins; upper surface scabrous, under surface hoary; flowers on pedicels; calyx rather pubescent; ovaries velvety. ♄. G. Native of the eastern coast of New Holland. Deless. icon. sel. 1. t. 81. A small, much branched shrub, having the appearance of *Rosemary* or a narrow-leaved species of *Hypéricum.* Stamens 11. (f. 18.)

FIG. 18.



Hypericum-like Pleurandra. Sh. 2 feet.

19 P. stria'ta (Sieb. pl. nov. holl. ex Spreng. syst. app. p. 191.) leaves linear, callose at the apex, striated, scabrous; flowers terminal, sessile; sepals acute, pubescent. ♄. G. Native of New Holland.

Striated Pleurandra. Shrub 1½ foot.

20 P. cistiflo'ra (Sieb. pl. nov. holl. ex Spreng. l. c.) leaves linear-filiform, acute, furrowed, full of rough dots; flowers sessile, terminal; sepals quite smooth, with membranous margins. ♄. G. Native of New Holland. Rchb. hort. bot. t. 79.

Rock-rose-flowered Pleurandra. Shrub 1½ foot.

21 P. ene'rvia (D. C. syst. 1. p. 421.) leaves linear, rather acute, nerveless, smooth; flowers sessile; calyx blunt, mucronulate. and is, as well as ovaries, smooth. ♄. G. Native of New Holland. A much branched humble shrub. Stamens 15-20.

Nerveless-leaved Pleurandra. Shrub 1 foot.

22 P. acicula'ris (Lab. nov. holl. 2. p. 6. t. 144.) leaves linear, awned at the apex, smooth; flowers on pedicels; calyx somewhat hispid, mucronate; ovaries hairy. ♄. G. Native of New Holland, and Cape Van Diemen. Stamens 7-8.

Needle-leaved Pleurandra. Fl. May, Ju. Clt. 1822. Sh. 2 ft.

23 P. acero'sa (R. Br. in D. C. syst. 1. p. 422.) leaves linear-subulate, with revolute margins, upper surface scabrous, under surface smooth; flowers on pedicels; calyx rather scabrous and acute; ovaries villous. ♄. G. Native of the southern coast of New Holland at a place called Lucky Bay. A very dwarf much branched shrub. Stamens 6-7.

Chaffy-leaved Pleurandra. Shrub 1 foot.

§ 4. *Candolleànæ (plants with the habit of Candóllea) D. C. prod. 1. p. 72. Stamens monodelphous at the base. Leaves linear, erect, scarcely spreading.—Perhaps a proper genus.*

24 P. stri'cta (R. Br. in D. C. syst. 1. p. 422.) leaves linear, bluntish, erect, upper surface scabrous, under surface smooth; flowers sessile; calyx somewhat scabrous; ovaries velvety. ♄. G. Native of New Holland near Port Jackson, and in barren brushy situations on the Blue Mountains. An erect, branched shrub. Stamens 5-7.

Erect Pleurandra. Fl. May, Ju. Clt. 1826. Shrub 2 feet.

25 P. calyci'na (D. C. syst. 1. p. 422.) leaves linear, acute, erectish, upper surface scabrous, under surface somewhat pubescent; flowers sessile; calyx sericeously-velvety; ovaries hairy. ♄. G. Native of New Holland on forest land near Bathurst. Stem erect, branched. Stamens 5-8.

Large-calyxed Pleurandra. Fl. May, Ju. Clt. 1826. Sh. 2 ft.

Cult. Pleurándra is a genus of pretty little greenhouse shrubs. They thrive best in an equal mixture of loam, peat, and sand. Ripened cuttings root readily under a hand-glass, in the same sort of soil.

XII. CANDO'LLEA (in honour of Augustus Pyramus De Candolle, F. M. R. S. and L. S. Professor of Botany at Geneva,

and author of many approved and useful botanical works. He is justly considered one of the first botanists of the present age). Labill. nov. holl. 2. p. 33. t. 176. D. C. syst. 1. p. 423. prod. 1. p. 73.

Lin. syst. *Polyadélphia, Polyándria.* Calyx of 5, oval, mucronate, permanent sepals. Petals 5, obovate or obcordate, deciduous. Stamens indefinite, polyadelphous. Styles filiform. Carpels 2-5, ovate, opening on the inside. Shrubs, natives of New Holland, having the appearance of *Pleurándra* and *Hibbértia.* Flowers yellow.

1 C. cuneifo'rmis (Lab. nov. holl. 2. p. 34. t. 176.) leaves smooth, obovately-cuneated, blunt at the top, entire. ♄. G. Native of New Holland on the western coast at Lewin's Land, and at Port Royal George. Hook. bot. mag. 2711. Hibbértia cuneifórmis, Smith. in Rees' cycl. vol. 17. Shrub about 4 feet high; branches cinereous, rough. Ovaries 5-6, smooth.

Wedge-formed-leaved Candollea. Fl. May, Aug. Clt. 1823. Shrub 4 feet.

2 C. peduncula'ta (R. Br. in D. C. syst. 1. p. 424.) leaves smooth, linear-cuneated, truncate at the top, 3-toothed. ♄. G. Native of New Holland at King George's Sound. A small branched shrub, with the younger branches villous, and the adult ones smooth. Ovaries 3?

Pedunculated Candollea. Fl. May, Oct. Shrub 2 feet.

3 C. fascicula'ta (R. Br. in D. C. syst. 1. p. 424.) leaves villous, linear, entire. ♄. G. Native of New Holland at King George's Sound. Branches round, younger ones villous. Ovaries 3-4, smooth.

Fascicular-leaved Candollea. Fl.? Shrub 2 feet?

Cult. *Candóllea* is a genus of beautiful greenhouse shrubs. The species will thrive well in a mixture of loam, peat, and sand, and cuttings will strike root readily in the same kind of soil, under a hand-glass.

XIII. ADRASTÆ'A (Adraste in mythology, daughter of Jupiter and Necessity, who, according to Plutarch, was the only fury that exercised the vengeance of the gods). D. C. syst. 1. p. 424. prod. 1. p. 73.

Lin. syst. *Decándria, Digýnia.* Calyx of 5, acuminated, permanent sepals. Petals 5, oval, deciduous, shorter than the sepals. Stamens 10, free, equal; filaments flat, bearing the oblong cells of the anthers on their margins. Ovaries 2. Styles straight, conico-subulate. A little shrub, having the appearance of a species of *Hibbértia.* Flowers yellow.

1 A. salicifo'lia (D. C. syst. 1. p. 424.) leaves linear, nearly entire, furnished at the top on both sides with 3-5 callose, tooth-like dots. ♄. G. Native of marshes about Botany Bay.

Willow-leaved Adrastæa. Shrub 2 feet.

Cult. This pretty little shrub will thrive well in a mixture of loam and peat, but it will require to be kept rather moist. Cuttings will root readily if planted in a pot filled with the same kind of soil with a hand-glass placed over them.

XIV. HIBBE'RTIA (in honour of George Hibbert, F. R. S. F. L. S. who was once eminently distinguished for his love of plants. He purchased the entire herbarium of Murray of Gottingen, and for some time maintained Mr. Niven, an eminent collector of plants, at the Cape). Andr. bot. rep. t. 126. D. C. syst. 1. p. 425. prod. 1. p. 73.

Lin. syst. *Polyándria, Monogýnia to Polygýnia.* Sepals 5, permanent. Petals 5, deciduous. Stamens indefinite, filiform, equal; anthers oval-oblong. Ovaries 1-15; styles filiform, inflexed. Carpels membranous, dehiscent, usually 1-2-seeded. Seeds without any aril. Erect, procumbent, or twining shrubs, with yellow flowers.

§ 1. *Burtònia* (*see Burtònia*), *Sal. Carpels* 10-15, *with their base smooth, but rather pilose at the apex.—Perhaps a proper genus.*

1 H. grossulariæfo'lia (Sal. par. lond. no. 73. t. 73. under Burtònia.) leaves nearly orbicular, crenate-toothed; flowers on peduncles, opposite the leaves; stems procumbent or climbing. ♄. ◡. G. Native of New Holland at King George's Sound. Sims, bot. mag. t. 1218. H. crenàta, Andr. bot. rep. t. 472.

Gooseberry-leaved Hibbertia. Fl. Mar. Aug. Clt. 1573. Sh. cl.

§ 2. *Carpels* 1-8, *glabrous.*

2 H. volu'bilis (Andr. bot. rep. t. 126.) leaves obovate-lanceolate, nearly quite entire, mucronate, under surface pubescent; flowers sessile, with 4-8-styles; stems twining. ♄. ⌒. G. Native of New Holland near Port Jackson. Dillènia speciòsa, Curt. bot. mag. t. 449. exclusive of the synonyms. Dillènia hùmilis, Donn. hort. cant.? Dillènia turneræflòra, Gawl. recens. pl. bot. rep. 27. Dillènia scándens, Willd. spec. p. 1251. Duham. arb. ed. 2. vol. 4. p. 239. t. 63. Dillènia intègra, Mœnch. suppl. t. 76. Dillènia volùbilis, Vent. choix. p. 11. t. 11. Pers. ench. 2. p. 72. Flowers fetid, about the size of those of *Cistus Ladaníferus.* Seeds black, pea-formed, compressed, hard, exarillate.

Twining Hibbertia. Fl. May, Oct. Clt. 1790. Shrub cl.

3 H. denta'ta (R. Br. in D, C. syst. 1. p. 426.) leaves oblong, acuminated, smooth, serrated, awned; flowers on peduncles with 3 styles; stems twining. ♄. ⌒. G. Native of New Holland on the Blue Mountains. Ker. bot. reg. t. 282. Lodd. bot. cab. t. 347. Sims, bot. mag. t. 2338.

Var. β, pedicels and calyx smooth or scarcely pilose; leaves more serrated.

Toothed-leaved Hibbertia. Fl. Jan. Aug. Clt. 1814. Sh. cl.

4 H. sali'gna (R. Br. in D. C. syst. 1. p. 427.) leaves oblong-linear, mucronately-pointed at the apex, quite entire, under surface villous; flowers sessile, with 2-4 styles; stem erect. ♄. G. Native of New Holland about Port Jackson and among brushwood in several parts of the Blue Mountains, particularly about Spring Wood. Stamens 25-30.

Willow-leaved Hibbertia. Fl. May, Aug. Clt. 1823. Sh. 3 ft.

5 H. procu'mbens (D. C. syst. 1. p. 427.) leaves linear, acuminated, thickish, smooth, veinless; flowers nearly sessile, with 3-5 styles; stems procumbent. ♄. G. Native of New Holland and Van Diemen's Land. Dillènia procúmbens, Lab. nov. holl. 2. p. 16. t. 156. H. angustifòlia, Sal. par. lond. no. 73. Flowers the size of those of *Lysimàchia nummulària.* Stamens 16-24. Seeds immersed in pulp.—Perhaps a proper genus.

Procumbent Hibbertia. Shrub trailing.

6 H. virga'ta (R. Br. in D. C. syst. 1. p. 428.) leaves linear, bluntish, smooth; flowers sessile, with 7-8 anthers and 3-4 styles; stem erect. ♄. G. Native of New Holland about Port Jackson. A small, slender, smooth shrub.

Twiggy Hibbertia. Fl. May, Aug. Clt. 1822. Shrub 2 ft.

7 H. fasciula'ta (R. Br. in D. C. syst. 1. p. 428.) leaves linear, awl-shaped, smooth, in fascicles; branchlets rather pilose; flowers sessile, with 3-4 styles; stem erect. ♄. G. Native of New Holland about Port Jackson. This shrub has the appearance of *Hypéricum fasciculàtum.* Stamens 11-12.

Fascicled-leaved Hibbertia. Shrub 1 foot.

8 H. linea'ris (R. Br. in D. C. syst. 1. p. 428.) leaves linear, acute, quite entire, smooth; flowers sessile, with 2 styles and 20 stamens; stem erect. ♄. G. Native of New Holland about Port Jackson.

Linear-leaved Hibbertia. Fl. Jul. Aug. Clt. 1821. Sh. 2 ft.

9 H. obtusifo'lia (D. C. syst. 1. p. 429.) leaves linear, ob-

tuse, narrowed at the apex, smooth; flowers sessile, with 20 stamens and 2 styles; stem erect. ♄. G. Native of Van Diemen's Land in dry sandy places. This species is very like *H. lineàris*, and is perhaps only a variety of it.

Blunt-leaved Hibbertia. Fl. Jun. Aug. Clt. 1824. Sh. 2 feet.

10 H. DIFFU'SA (R. Br. in D. C. syst. 1. p. 429.) leaves cuneated, toothed at the apex, smooth; flowers sessile, with 2-3 styles and 20 stamens; stem diffuse. ♄. G. Native of the eastern coast of New Holland.

Var. β, leaves oblong-cuneated. Differing from the species in the leaves being nearly oblong, entire, and emarginate, or furnished with 2-3 teeth on the margin.

Diffuse-stemmed Hibbertia. Shrub 1 foot.

11 H. MONO'GYNA (R. Br. in D. C. syst. 1. p. 429.) leaves spatulate, cuneated at the base, 2-3-toothed at the apex, smooth; flowers sessile, with 1 style, and 12 stamens; stem erect. ♄. G. Native of New Holland in the mountains and about Port Jackson. Carpel 1-globose, membranous, indehiscent, 1-seeded. Stamens 12-13.

One-styled Hibbertia. Shrub 1 foot.

§ 3. *Carpels 2-4, velvety from short pubescence, or covered with little scales.*

12 H. PEDUNCULA'TA (R. Br. in D. C. syst. 1. p. 430.) leaves linear, bluntish, with somewhat revolute margins; flowers on pedicels, digynous; ovaries rather hoary. ♄. G. Native of New Holland about Port Jackson. Lindl. bot. reg. t. 1001. H. corifòlia, Sims, bot. mag. t. 2672. Ovaries 2, globose, hoary. Styles filiform, scarcely exceeding the stamens in length. A little shrub, having the appearance of a species of *Heliánthemum*. Stamens 12-13.

Peduncled-flowered Hibbertia. Fl. May, Aug. Clt. 1821. Shrub 1 foot.

13 H. SERPYLLIFO'LIA (R. Br. in D. C. syst. 1. p. 430.) leaves elliptical, obtuse, quite entire, smooth; flowers on pedicels with 2 styles, and 8-10 stamens; ovaries villous. ♄. G. Native of New Holland on the eastern coast. Anthers oblong, longer than the filaments.

Wild-thyme-leaved Hibbertia. Shrub 1 foot.

14 H. CANE'SCENS (Sieb. pl. nov. holl. ex Spreng. syst. app. p. 211.) leaves spatulate-linear, pilose above, smooth beneath; branches villous; ovaries pubescent. ♄. G. Native of New Holland.

Canescent Hibbertia. Shrub 2 feet.

15 H. A'SPERA (D. C. syst. 1. p. 430.) leaves oblong, obtuse, with rather revolute margins, upper surface rather scabrous, under surface greyish-velvety; flowers on short pedicels with 2 styles; ovaries hairy. ♄. G. Native of New Holland. Perhaps a species of *Pleurándra*.

Rough-leaved Hibbertia. Shrub 1 foot.

16 H. HERMANNIÆFO'LIA (D. C. syst. 1. p. 431.) leaves obovate-cuneated, blunt, villous-tomentose on both surfaces, the hairs on the upper surface are simple, those on the under surface are stellately-branched; flowers on pedicels, digynous; ovaries tomentose. ♄. G. Native of New Holland on the mountains. Stamens 15-16.

Hermannia-leaved Hibbertia. Shrub 1 foot.

17 H. OBLONGA'TA (R. Br. in D. C. syst. 1. p. 431.) leaves oblong, quite entire, upper surface smooth, under surface velvety with stellate hairs; nerves confluent at the margins; flowers on pedicels, digynous; ovaries scaly. ♄. G. Native of Carpentaria. Carpels globose, somewhat triquetrous. Stamens 20-25.

Oblong-leaved Hibbertia. Shrub 2 feet.

18 H. CISTIFO'LIA (R. Br. in D. C. syst. 1. p. 431.) leaves oblong, quite entire, 1-nerved, upper surface pubescent with starry hairs, under surface white-velvety; flowers on pedicels digynous; ovaries scaly. ♄. G. Native of New Holland in Arnheim Land. Stamens 20-25.

Cistus-leaved Hibbertia. Fl. May, Aug. Clt. 1826. Sh. 1 ft.

19 H. TOMENTO'SA (R. Br. in D. C. syst. 1. p. 432.) leaves oblong-linear, 1-nerved, quite entire, tomentose on both surfaces; flowers on pedicels digynous; calyxes and ovaries scaly. ♄.G. Native of Carpentaria. Ovaries globose; styles smooth, filiform. Stamens 20-24.

Tomentose Hibbertia. Shrub 1 foot.

20 H. LEPIDO'TA (R. Br. in D. C. syst. 1. p. 432.) leaves linear, acuminated, very entire, scaly on both surfaces; pedicels crowded, 1-flowered; flowers digynous; ovaries scaly. ♄. G. Native of Carpentaria. Styles arched, filiform, smooth. Stamens about 10.

Scaly Hibbertia. Shrub 1 foot.

Cult. All the species of *Hibbértia* are very ornamental. They thrive best in an equal mixture of sandy-loam and peat. Cuttings put in in the spring or summer root freely under a hand-glass in the same kind of soil. The climbing species are very desirable for conservatories.

XV. WO'RMIA

(in honour of Olaus Wormius, M.D. a celebrated Danish philosopher and naturalist, successor of Caspar Bartholin in the professorship of medicine at Copenhagen. He died rector of the university in 1659. His Latin writings on the history and antiquities of Denmark and Norway are valued for their accuracy.) Rottb. nov. act. hafn. 1783. vol. 2. p. 522. t. 3. D. C. syst. 1. p. 433. prod. 1. p. 75.

LIN. SYST. *Polyándria, Pantagýnia.* Sepals 5, very obtuse, permanent. Petals 5, deciduous. Stamens indefinite, free, filiform, equal. Styles 5, filiform; stigmas emarginate. Carpels 5, capsular, opening on the inside, 8-12 seeded, with pulp or aril at the base of the seeds. Elegant trees, with white or yellow flowers.

1 W. MADAGASCARIE'NSIS (D. C. syst. 1. p. 433.) leaves oval, bluntly sinuated; flowers in branched panicles. ♄. S. Native of Madagascar. Deless. icon. sel. 1. t. 82. Clúgnia volùpis, Comm. herb. et icon. ined. Lenìdia Madagascariénsis, Poir. suppl. 3. p. 330. Panicles near to the top of the branches opposite the leaves.

Var. α, *rotundifòlia;* leaves orbicular, somewhat cordate at the base.

Var. β, *oblongifòlia;* leaves oblong, not cordate at the base. A very elegant tree.

Madagascar Wormia. Tree 25 feet.

2 W. DENTA'TA (D. C. syst. 1. p. 434.) leaves ovate, retuse, coarsely and acutely toothed; peduncles triquetrous 3-6-flowered. ♄. S. Native of Ceylon. Dillènia dentàta, Thunb. in Lin. soc. trans. 1. p. 201. t. 20. Petals 5, orbicular. Ovaries 5. This tree is called *Diapara* in Ceylon.

Toothed-leaved Wormia. Fl.? Clt. 1818. Tree 20 feet.

3 W. TRIQUE'TRA (Rottb. nov. act. hafn. 2. p. 532. t. 3.) leaves ovate, rather obtuse, and bluntly sinuated; peduncles triquetrous, racemose. ♄. S. Native of Ceylon. Ovaries 3-sided, approximate. Styles reflexed. Stamens very short.

Triquetrous-peduncled Wormia. Tree 20 feet.

4 W. ALA'TA (R. Br. in D. C. syst. 1. p. 434.) leaves oval, quite entire; petioles winged. ♄. G. Native of New Holland at Endeavour River. Styles awl-shaped, diverging, longer than the stamens.

Wing-petioled Wormia. Tree 20 feet.

Cult. Elegant trees, requiring the heat of a stove, with the exception of *W. alàta.* They will thrive well in a mixture of loam, peat, and sand. Ripened cuttings not deprived of their leaves will root freely, if planted in a pot of sand with a hand-glass placed over them, in heat: those of *W. alàta* do not require heat.

XVI. COLBE'RTIA (in honour of John Baptist Colbert, marquis Seignelai, a famous French statesman, and patron of the Paris garden, who destroyed with his own hands the vines which had been planted therein, in lieu of more curious objects; died 1683.) Sal. par. lond. no. 73. D. C. syst. 1. p. 435. prod. 1. p. 75.

Lin. syst. *Polyándria, Tetra-Polygýnia.* Sepals 5-6, permanent. Petals 5, deciduous. Stamens indefinite, free, 10-50 of which are much longer than the rest, bearing empty anthers. Anthers opening by a double pore. Carpels 4-12, joined into a ribbed baccate fruit. Styles 4-12, diverging. Stigmas capitate? Seeds reniform, many in each cell, all imbedded in a pellucid glutinose pulp. Trees with broad leaves and yellow flowers.

1 C. Coromandelia'na (D. C. syst. 1. p. 435.) leaves oblong, villous on the nerves beneath; pedicels 1-flowered, fascicled; petals oval-oblong, acute; sepals ovate, obtuse. ♄. S. Native of Coromandel in mountain valleys. Dillènia pentágyna, Roxb. corom. 1. p. 21. t. 20. Leaves oblong, like those of *Dillènia speciòsa*, but larger. Pedicels 1-flowered, several of which rise from the same floriferous bud, along the naked branches of the preceding year. An elegant tree with yellow flowers. Fruit pendulous.

Coromandel Colbertia. Fl. March, April. Clt. 1803. Tree 20 feet.

2 C. scabre'lla (D. Don. prod. fl. nep. p. 226.) leaves elliptical, acute, tapering to the base, pilose on both surfaces, with bristly serratures; peduncles in axillary fascicles, each furnished with two opposite bracteas, glabrous; leaflets of calyx oval-roundish; petals orbicular or obovate; anthers obtuse. ♄. S. Native of Bengal. Dillènia scabrélla, Roxb. hort. beng. p. 43. Wall. pl. asiat. rar. p. 20. t. 22. Leaves 1 foot long, deciduous. Ovaries 6-7. Flowers yellow, fragrant. The fleshy leaves of the calyx have a pleasant acid taste, and are used in curries by the inhabitants of Chittagong in the same manner as those of *Dillènia speciòsa*.

Rough-leaved Colbertia. Fl.? Clt. 1820. Tree 3 feet.

3 C. obova'ta (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 492.) leaves obovate, serrated; peduncles 1-flowered; flowers polygynous. ♄. S. Native of Java. Wórmia obovàta, Spreng. syst. app. p. 213. Ovaries 12.

Obovate-leaved Colbertia. Tree 20 feet.

4 C. augu'sta (Wall. in litt.) leaves large, obovate feather-nerved; nerves bifid at the apex, each terminating in a mucrone, all villous; pedicels 1-flowered, aggregate, axillary. ♄. S. Native of the East Indies. Dillènia augústa, Roxb. Leaves 1 foot long and 7 inches broad. The points of the nerves are the teeth of the leaves. Flowers yellow.

August Colbertia. Tree 40 feet.

Cult. Colbértia is a genus of elegant trees resembling *Dillènia*. The species will thrive well in sandy loam, or a mixture of loam and peat. Ripened cuttings root freely in sand under a hand-glass plunged in a moderate heat, but they must not be deprived of any of their leaves.

XVII. CAPE'LLIA (Capell, the name of some botanist?) Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 492.

Lin. syst. *Polyándria Polygýnia.* Stamens indefinite, free, the inner ones much longer than the rest in one row. Carpels 5-8 or more, membranous, joined into a globose fruit. Cells many-seeded, opening on the inside; seeds disposed in a double series at the margins of the carpels. Styles awl-shaped, diverging. Sepals and petals 5, the latter deciduous.—A tall tree, with oblong repand-serrulated, smooth leaves, and terminal many-flowered peduncles. Flowers yellow. This genus differs from *Colbértia* in the fruit not being baccate nor pulpy, and in the carpels opening inwardly. It differs from *Dillenia* in the petals being deciduous, not permanent, as well as in the stamens being unequal.

1 C. multiflo'ra (Blum. l. c.) ♄. S. Native of Java.

Many-flowered Capellia. Tree 40 feet.

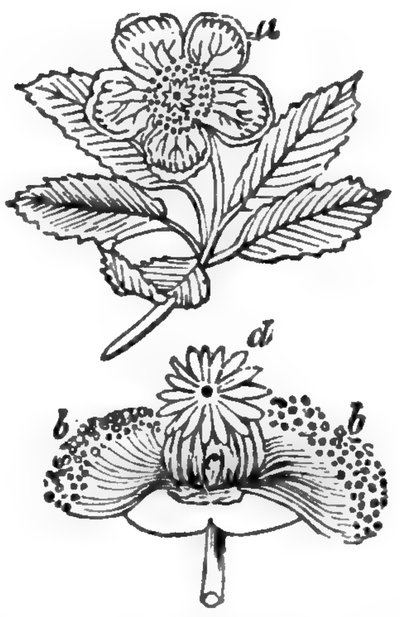
Cult. Capéllia will require the same treatment as that recommended for the species of *Dillènia*.†

XVIII. DILLE'NIA (in honour of John James Dillenius, the famous professor of botany at Oxford, author of Historia Muscorum and Hortus Elthamensis, &c.) Lin. gen. no. 688. D. C. syst. 1. p. 435. prod. 1. p. 75.

Lin. syst. *Polyándria, Polygýnia.* Sepals and petals 5, both permanent. Stamens indefinite, free, equal (f. 19. *b.*) Carpels 10-20, joined into a spurious, many-celled, many-seeded berry (f. 19. *c.*) crowned by the radiant stigmas (f. 19. *d.*) Elegant trees, with large white or yellow flowers. Fruit eatable, of an acid taste.

1 D. specio'sa (Thunb. in Lin. soc. trans. 1. p. 200.) leaves elliptical-oblong, simply serrated; peduncles 1-flowered. ♄. S. Native of Malabar, especially about Cochin and Moutan; also in Java and Ceylon. Smith, exot. bot. 1. t. 2. Syalita, Rheed. mal. 3. p. 39. t. 38 and 39. D. I'ndica, Lin. spec. 745. A tall elegant tree, with leaves like those of the sweet chesnut. Flowers large, with white petals and yellow anthers. (f. 19.)

FIG. 19.



The fruit is eatable, though very acid, which, as Rheede informs us, requires sugar, broth, or some other addition to make it palatable. The acid juice of the fruit, with sugar, is used in India mixed with water as a pleasant cooling beverage in fevers.

Shewy Dillenia. Fl.? Clt. 1800. Tree 40 feet.

2 D. au'rea (Smith, exot. bot. t. 92, 93.) leaves elliptical-oblong, serrated; flowers often solitary on peduncles, rising before the expansion of the leaves. ♄. S. Native of the East Indies, near the river Gogra. A deciduous tree, with the appearance of *D. speciòsa*. Margins of seeds not fringed. Flowers yellow.

Golden-flowered Dillenia. Tree 30 feet.

3 D. orna'ta (Wall. pl. asiat. rar. p. 21. t. 23.) leaves obovate, remotely crenately toothletted, stalked, smooth above, but pubescent beneath; flowers solitary, terminal. ♄. S. Native of the East Indies in the forests of the principal rivers in Malabar. A noble deciduous tree, resembling the *Teak* when in foliage. Flowers large, yellow, fragrant. Stigmas 9, stellately spreading. Perhaps a species of *Colbértia*.

Ornamented Dillenia. Fl. March. Tree 50 feet.

4 D. inte'gra (Thunb. in Lin. trans. 1. p. 199. t. 18.) leaves oblong-obovate, obtuse, nearly entire; peduncles 1-flowered. ♄. S. Native of Ceylon. A tree with broad leaves. Flowers terminal on the extreme branches. This is perhaps a species of *Wórmia* as well as *D. ellíptica* and *D. retùsa*. Called in Ceylon *Gudapara* and *Runumidale*.—A decoction of the leaves is used by the inhabitants for cleansing foul ulcers.

Entire-leaved Dillenia. Fl.? Tree 30 feet.

5 D. elli'ptica (Thunb. in Lin. soc. trans. 1. p. 200.) leaves elliptical-ovate, acute, serrated; peduncles 1-flowered. ♄. S. Native of Amboina, Celebes, near Tambocco. Sòngium, Rumph. amb. 2. p. 140. t. 45. A tree like *Cìtrus Limònia*, with leaves about 2 feet long. Flowers white. Fruit the size of an orange, filled with copper-coloured bitterish-sweet pulp; it is

either eaten in a crude state, or when ripe is used as a sauce with fish.

Elliptic-leaved Dillenia. Tree 30 feet.

6 D. SERRA'TA (Thunb. in Lin. soc. trans. 1. p. 201.) leaves elliptical-ovate, acute, serrated; peduncles 3-flowered. ♄. S. Native of Java and other parts of India. Sángius, Rumph. amb. 2. p. 142. t. 46. Fruit eatable, the size and form of an orange, of a sweetish-acid taste, either yellow, white, or reddish.

Serrated-leaved Dillenia. Tree 30 feet.

7 D. RETU'SA (Thunb. in Lin. soc. trans. 1. p. 200. t. 19.) leaves obovate, truncate at the apex, remotely toothed, peduncles 1-flowered. ♄. S. Native of the woods of Ceylon. Lam. ill. t. 492. f. 2. A tree with leaves two hands long and one broad. Petals obovate, three times longer than the calyx.

Retuse-leaved Dillenia. Tree 30 feet.

Cult. *Dillènia* is a splendid Indian genus of trees. The species thrive well in the collections of this country. A light loamy soil suits them best, or a mixture of loam and peat. Ripened cuttings not deprived of their leaves strike root freely, in a pot of sand, under a hand-glass, plunged in heat. The plants will not bear tobacco smoke, as it turns the leaves brown, and consequently many of them will drop. The house in which they are kept should never be allowed to get below 60 degrees of Fahrenheit's thermometer, as this would also injure their leaves. Sweet, bot. cul. p. 61 and 62.

ORDER III. MAGNOLIA'CEÆ (plants agreeing with Magnòlia in many important characters.) D. C. theor. pl. 213. syst. 1. p. 439. prod. 1. p. 77. Parts of flower imbricate in the bud. Calyx of 3 (f. 22. *a.*) or 6 deciduous sepals. Petals 3-27 (f. 20, 21, 22. *a.*) disposed in a ternary order, in one or many series. Stamens indefinite, free. Anthers adnate, elongated. Ovaries numerous (f. 21. *b.* f. 22. *b.*), inserted in the torus above the stamens, usually disposed in spikes, rarely connected at maturity, 1-celled, 1 or many seeded (f. 20. *g.* f. 21. *c.*), sometimes capsular (f. 22. *b.*), and opening either on the under or upper side, sometimes fleshy (f. 21. *b.*) indehiscent, sometimes samaræformed (f. 20. *f.*). Seeds adnate to the inner angle of the carpel (f. 20. *g.*). Embryo straight, small, inferior (f. 20. *h.*). Albumen fleshy.—Elegant trees and shrubs, natives of Asia and America, with alternate feather-nerved leaves articulately inserted, and involute when in the bud. Stipulas 2, deciduous, when young convolute and terminating the branches in a conical acumen, resembling that of the fig-tree. Flowers beautiful, usually with a delicious fragrance. This order differs from *Dilleniàceæ* in the parts of the flowers being disposed in a ternary order, not quinary, and from *Anonàceæ* in the albumen being continuous, not pierced by the processes of the seed-coat, but it is more easily distinguished from that order in the presence of stipulas. The grandeur of the *Magnòlias* is known to all lovers of plants, as well as the delicious though dangerous fragrance of their flowers, and very few of the other genera are inferior to them, but it is less generally known, that from their affinity to the trees that produce the famous *Winter's-bark* and *Melambo-bark*, they possess qualities of no common power. The bark of all the plants of this order is said to have a bitter flavour without any astringency, combined with a hot aromatic flavour. In the United States the bark of the *Magnòlia glaúca* and *Liriodéndron tulípifera* is employed for the same purposes as *Jesuit's-bark*, and from the fruit of *Magnòlia acuminàta* a tincture is prepared which has some reputation for removing attacks of rheumatism. The fruit of *Illícium anisàtum*, is the material which flavours the liqueur called Anisette de Bourdeaux. The pericarps are usually aromatic. The seeds are generally bitter, and retain their vegetative power a considerable time, therefore, in most instances they may be imported in a living state from any part of the world.

Synopsis of the Genera.

TRIBE I.

ILLICIE'Æ (*D. C. prod.* 1. *p.* 77.) *Carpels disposed in whorles* (f. 20.) *rarely solitary from abortion. Leaves full of pullucid dots.*

1 ILLI'CIUM. Capsules stellately disposed, capsular, opening above; 1-seeded; seeds shining. Calyx of 3-6 petal-like sepals.

2 TE'MUS. Carpels 2, baccate, joined together? Seeds arillate. Style 1. Calyx trifid.

3 DRI'MYS. Carpels crowded, baccate, many-seeded (f. 20. *g.*) Filaments of stamens thickest at the top, and bearing separated cells (f. 20. *d.*) Calyx entire, or 2-3-parted.

4 TASMA'NNIA. Carpel solitary, membranous, indehiscent, many-seeded. Calyx 3-sepalled or 3-parted.

TRIBE II.

MAGNOLIE'Æ (*D. C. prod.* 1. *p.* 79.) *Carpels spicately disposed along the axis* (f. 21. *b.* f. 22. *b.*) *Leaves destitute of pellucid dots.*

5 MANGLIE'TIA. Carpels 2-valved, numerous, permanent, many-seeded, disposed in a dense imbricated cone. Calyx spathaceous, irregularly deciduous.

6 MICHE'LIA. Carpels disposed in loose spikes (f. 21. *b.*) somewhat baccate, opening at the top, many-seeded. (f. 21. *c.*) Calyx of 3-sepals.

7 MAGNO'LIA. Carpels disposed in crowded spikes, opening by the external angle, 1-2-seeded, permanent. Calyx of 3 sepals.

8 TALA'UMA. Carpels disposed in spikes, 1-2-seeded, joined together into a shobile-like fruit (f. 22. *b.*) opening valvately and irregularly on the outside. Calyx of 3 sepals (f. 22. *a.*)

9 AROMADE'NDRON. Carpels 1-2-seeded, joined into a ligneous fruit. Calyx of one spathaceous leaf.

10 LIRIODE'NDRON. Carpels disposed in spikes, 1-2-seeded, indehiscent, deciduous, each drawn out into a wing. Calyx of 3 sepals.

Tribe I.

ILLICIE'Æ (plants agreeing in character with *Illícium*,) D. C. prod. 1. p. 77. Carpels disposed in a whorl, very rarely solitary from abortion. Leaves full of pellucid dots.

I. ILLI'CIUM (from *illicio*, to allure; on account of the agreeable aromatic smell of the species.) Lin. gen. 611. Gært. fruct. 1. p. 339. t. 69. Juss. gen. 281. Lam. illust. t. 493. D. C. syst. 1. p. 440. prod. 1. p. 77.

LIN. SYST. *Polyándria, Polygýnia.* Calyx of 3-6 petal-like sepals. Carpels stellately disposed, capsular, opening on the upper side, 1-seeded. Seeds shining. Evergreen smooth shrubs,

with oblong stalked coriaceous leaves. The species are powerfully carminative and stomachic, especially *Ill. anisàtum*.

1 I. Florida'num (Ellis. in phil. trans. 1770. p. 524. t. 12.) petals 27-30 dark purple, outer ones oblong, inner ones lanceolate. ♄. F. Native of West Florida on the banks of the river Mississippi, and in marshy places near the town of Pensacola. Lam. illustr. t. 493. f. 1. Lois. herb. amat. t. 174. Curt. bot. mag. 439. Lodd. bot. cab. t. 209. Bigel. amer. med. bot. t. 48. The leaves when bruised smell like anise, as well as the rest of the plant. The bark and leaves are strongly impregnated with a spicy aromatic taste and smell, approaching that of *Magnòlia* and *Liriodéndron*, but perhaps more similar to that of *Anise* or *Coriander* seeds. This aroma is preserved in the distilled water, and fills the room with its fragrance while distillation is going on. The medicinal properties of this shrub are not ascertained, but from its bitter taste and aromatic quality it would appear to be analogous with *Sassafras canella* and *Cascarilla* and other aromatic barks, which are regularly consumed in the shops.

Florida Anise-seed-tree. Fl. April, June. Clt. 1766. Shrub 8 feet.

2 I. anisa'tum (Lin. spec. 664.) petals 27-30, yellowish, outer ones oblong, inner ones linear-awl-shaped. ♄. F. Native of Japan and China, where it is also cultivated in gardens as an ornament. Gært. fruct. 1. p. 338. t. 69. Lam. ill. t. 493. f. 2. —Clus. hist. 2. p. 202. f. 3. The capsules of this plant are imported from China under the name of *Chinese anise*, they are used as an aromatic condiment to communicate an agreeable flavour to certain dishes. It is the material which flavours the liqueur called *Anisette de Bourdeaux*. In Japan they place bundles and garlands of this tree in their temples before their idols, and on the tombs of their friends. They also burn the powdered bark as incense to their idols. The plant is stomachic and carminative, and is used in the eastern countries in the colic, rheumatism, &c. The Chinese chew it after dinner as a stomachic and sweetener of the breath. In some parts of the East Indies the natives and the Dutch settlers mix it with their tea and sherbet. A branch put into the decoction of *Tetràodon hispidum* is supposed to increase the virulence of that poison. The bark finely powdered is used by the public watchmen in Japan to make a chronometer or instrument for measuring the hours, by slowly sparkling at certain spaces in a box, in order to direct when the public bells are to sound.

Chinese *Anise*-seed-tree. Fl. April, June. Clt. 1790. Shrub 8 feet.

3 I. parvifio'rum (Mich. fl. bor. amer. 1. p. 326.) petals 9-12, yellowish, ovate-roundish. ♄. F. Native of Western Florida, near Lake George. Vent. cels. t. 22. Lois. herb. amat. t. 330. Ph. fl. amer. sept. 2. p. 380. Sepals 3 ovate, somewhat ciliated. A small shrub. Leaves scented. Flowers scentless. The bark has exactly the flavour of the *Sassafras* root.

Small-flowered Anise-seed-tree. Fl. May, June. Clt. 1790. Shrub 3 feet.

Cult. The species of this genus thrive well in a light loamy soil, or a mixture of loam and peat; and they are readily increased by layers. Ripened cuttings planted in a pot of sand will root freely under a hand-glass.

II. TE'MUS (*Temo* is the name of this tree in Chili.) Mol. chil. 153. Juss. gen. 435. D. C. prod. 1. p. 78.

Lin. syst. *Polyándria*, *Digýnia*. Calyx 3-cleft. Petals 18, linear, very long. Stamens 26 (27 ?) shorter than the petals; anthers globose. Ovaries 2, each terminated by a style. Carpels 2, baccate, (joined ?). Seeds arillate. An evergreen tree. Leaves alternate, stalked, oval, smooth, smelling like the nutmeg when bruised. Flowers terminal, flesh-coloured.

1 T. moscha'ta (Mol. chil. 153.) ♄. G. Native of Chili. Gmel. syst. 1. p. 831. Poir. dict. 7. p. 595. Leaves crowded on the branches, 2 inches long; green shining. Flowers sweet-scented; lobes of calyx blunt; petals flesh-coloured, narrow, 2 or 3 inches long. Filaments of stamens setacious, one-half shorter than the petals. Berries like coffee, but exceedingly bitter. (Mol.)

Musk-scented Temus. Shrub 10 feet?

Cult. This fine shrub will grow freely in a mixture of loam and peat, and ripened cuttings will root freely if planted in a pot of sand with a hand-glass placed over them.†

III. DRI'MYS (from δριμυς, *drimys*, acrid, or δριμυτης, *drimytes*, sharpness; taste of bark.) Forst. gen. t. 42. Lam. ill. t. 494. Lin. fil. sup. 268. Juss. gen. 280. D. C. syst. 1. p. 442. prod. 1. p. 78.

Lin. syst. *Polyándria*, *Tetragýnia*. Carpels crowded, baccate, many-seeded (f. 20. *g*.) Filaments of stamens thickest at the top. Anthers twin (f. 20. *d*.) This genus, from the structure of its stamens and subpersistent calyx, is a little allied to *Delìma*. Evergreen trees, with acrid aromatic bark, and axillary and terminal flowers.

Sect. I. Eudri'mys (from ευ, *eu*, well or good; δριμυς, *drimys*, acrid; taste of bark, or more probably from its containing the original species of Drìmys.) Calyx entire, dehiscent. Flowers small.

1 D. axilla'ris (Fort. gen. t. 42.) leaves oblong, acuminated at both ends; pedicels 2-3 together, 1-flowered; petals 6 ovate. ♄. G. Native of New Zealand in woods. Lam. ill. t. 494. f. 2. Wintèra axillàris, Willd. spec. 2. p. 1240. Ovaries 4-seeded. The flavour of the whole plant, especially of the bark, is extremely acrid and pungent.

Axillary-flowered Drimys. Shrub 10 feet.

Sect. II. Winte'ra (to the honour of William Winter, captain R.N., who went round the world with Sir Francis Drake, see *D. Wintèra*.) Calyx 2-3 parted, or of 2-3 sepals.

2 D. Winte'ri (Forst. gen. p. 84. t. 42.) leaves oblong, obtuse, under surface glaucous; peduncles almost simple, aggregate, divided into elongated pedicels; petals 6, oblong. ♄. F. Native of the Straits of Magellan and of Statenland. Winteràna aromática, Sol. med. obs. 5. p. 46. t. 1. Wintèra aromática, Murr. syst. 507. Winteranus cortex, Clus. exot. 75.

β, *punctàta* (Lam. dict. 2. p. 330. ill. t. 494. f. 1.) leaves less glaucous and more distinctly dotted.

This is a tree from 6 to 40 feet high, with knotty branches and a thick aromatic pungent bark. Flowers milk-white about the size of a *hawthorn* blossom, and smelling like *jasmine*. Berries from 3 to 6 of a light green colour, with a few black spots containing several, usually 4, black aromatic seeds. Captain William Winter, who went out with Sir Francis Drake, when he went round the world, at his return brought the bark of this tree with him from the Straits of Magellan. He had found it to be very useful to his ship's crew, both instead of other spices to their meat, and as a medicine very powerful against the scurvy. And Sebald de Weert says, that both leaves and bark were used with their meat and muscles, to correct them in so cold a climate.

Mr. George Handyside brought home with him a specimen of the leaves, flowers, and seed. He used the leaves, with other herbs, in fomentations with very good success: he also gave the bark inwardly, boiling half a drachm with some carminative seeds, and giving to those of the crew who were very much afflicted with the scurvy. It usually sweated them, and they were very much relieved. He likewise administered the same medicine to many of the crew who were very ill from eating the sea-lion; and were much relieved by it, although they had lost most of their skin, which peeled off in large pieces (Martyn). This bark

is not much used in practice at present, there being many drugs of equal or superior power, as *Canèlla álba*, &c.

Winter's-bark. Fl. Dec. Clt. 1827. Tree 40 feet.

3 D. Granate'nsis (Lin. fil. suppl. 269.) leaves ovate-oblong or oblong, acute, gradually tapering to the base, under surface glaucous; peduncles umbellate, 3-5-cleft, sometimes simple, usually aggregate at the tops of the branches. ♄. S. Native of New Granada, and in the kingdom of Santa-Fe de Bogota in the mountains at the height of 9300 feet, also of Brasil in the province of Minas Geraes. Humb. Bonpl. pl. æquin. 1. p. 205. t. 58. St. Hil. pl. usu. bras. t. 26 and 28. Wintèra Granaténsis, Murr. syst. 507. Drìmys Wintèri, Mart. Reis. 1. p. 280. but not of Lin. The flavour of the bark is the same as the preceding. A tree about 20 feet high, called in New Granada *Agi*, and in the province of Quito and Popaya *Canela de Parama*. Flowers white, rather larger than those of *D. Wintèri*; petals about 12.

FIG. 20.

Var. α, *campéstris* (St. Hil. fl. bras. 1. p. 22. pl. usuell. bras. t. 26.) stem shrubby or arboreous; leaves 2 or 3 inches long, obovate-oblong, very blunt; with the nerves rufescent on the under surface; peduncles 3-5-cleft, but usually 4-cleft; pedicels short, aggregate at the top of the branches rising from the axils of the caducous bracteas; petals usually 10, oblong-linear, blunt. ♄. S. Native of Brazil in fields on the banks of rivers.

Var. β, *sylvática* (St. Hil. l. c. pl. usu. bras. t. 27.) stem arboreous; leaves 4-6 inches long, oblong, rather narrow and rather acute, hoary beneath with rufescent nerves; peduncles umbellate, 3-4, but usually 5-cleft, very numerous, crowded at the tops of the branches, rising from the axils of the caducous bracteas; pedicels slender, longer than the peduncles; petals 5-7 lines long, linear, acute. Native of Brazil in woods, usually on the banks of rivulets. (f. 20.)

Var. γ, *axillàris* (St. Hil. l. c.) stem arboreous; branches glaucous; leaves 2 or 3 inches long, full of pellucid dots; hoary glaucous beneath, with reddish nerves; peduncles umbellate, 3-4 cleft, but often 5-cleft, rising from the axils of the upper leaves; pedicels shorter than the peduncles; petals usually 10, oblong-linear, narrowest at the base, rather acute at the apex. Native of Brazil on mountains near Villa Ricca.

Var. δ, *montàna* (St. Hil. l. c. pl. usu. bras. t. 28.) stem shrubby, a little branched; leaves crowded, 1 or 1½ inches long, obovate oblong, obtuse, usually somewhat emarginate, hoary pubescent beneath; peduncles crowded, not numerous, usually lateral, rising from the axils of the caducous bracteas, simple, 1-flowered or divided, longer than the pedicels; flowers small; petals 12-15, oblong-linear, obtuse. Native of Brasil on the high mountains, commonly called Serra Negra. This variety is called in Brasil *Casca d. Anta*, signifying *ecorse de taper*. The bark of all the varieties is aromatic stimulating, and the inhabitants in the provinces of the mines make much use of it. It is employed as a tonic to cure colics, and as a spice, and is much used by the inhabitants of Brasil to season their food, and therefore the plant is considered of great importance by them.

New *Granada* Winter's-bark. Tree 25 feet.

4 D. Chile'nsis (D. C. syst. 1. p. 444.) leaves oblong-obovate, under surface glaucous; pedicels crowded, 1-flowered, or rising from a common peduncle; petals 6-9, oblong, bluntish. ♄. G. Native of Chili in marshy places. Deless. icon. sel. 1. t. 83. Berries oval, somewhat compressed, blunt. A tall shrub, with very aromatic bark. Flowers white.

Chili Winter's-bark. Shrub 12 feet.

5 D. Mexica'na (Moc. et Sesse, pl. mex. ined. D. C. syst. 1. p. 444.) leaves oblong-lanceolate, acuminated at both ends; peduncles elongated, bearing 4 elongated pedicels at the apex; petals 20-24, acute. ♄. G. Native of Mexico. Berries 4, or from abortion only 2 or 3, obovate, tapering towards the base, of a bluish-violet colour. Flowers white.

Mexican Winter's-bark. Shrub 8 feet.

Cult. A mixture of loam, peat, and sand will suit the species of *Drìmys*, and ripened cuttings will probably root in sand under a hand-glass; however they are extremely difficult to preserve.†

IV. TASMA'NNIA (in honour of Tasman, a Dutch navigator; discoverer of Van Diemen's Land.) R. Br. in D. C. syst. 1. p. 445.

Lin. syst. *Diœ'cia, Polyándria.* Flowers dioecious or polygamous, small, like those of *Drìmys*. Male flowers with an indefinite number of stamens, and with the rudiment of a pistil. Female flowers with 2 sepals and 2-5 deciduous petals. Ovary 1-celled. Stigma adhering longitudinally to the inner side of the ovary. Fruit membranous, indehiscent, 1-celled, many-seeded. Stamens a little curved. This genus comes very near to *Drìmys*, but differs in the flowers being dioecious with the female ones bearing only 1 berry. Very smooth evergreen shrubs, with entire alternate leaves. Flowers crowded in the upper axils of the leaves. Pedicels 1-flowered.

1 T. aroma'tica (R. Br. in D. C. syst. 1. p. 445.) leaves oblong, gradually tapering to the base along the petiole; fruit globose, subdidymous. ♄. G. Native of the colder parts of New Holland, and especially in Van Diemen's Land. Deless. icon. sel. 1. t. 84. Winteràna lanceolàta, Poir. dict. 8. p. 799. Bark aromatic. Flowers small, white.

Aromatic-barked Tasmannia. Fl.? Clt. 1820. Shrub 8 feet.

2 T. insi'pida (R. Br. in D. C. syst. 1. p. 445.) leaves oval-oblong, abruptly eared at the apex of the very short petiole; fruit oval-oblong. ♄. G. Native of New Holland about Port Jackson. T. dipétala, R. Br. in litt. Bark insipid.

Insipid-barked Tasmannia. Shrub 8 feet.

Cult. A mixture of loam and peat will suit the species of this genus, and ripened cuttings will strike root if planted in a pot of sand with a hand-glass placed over them.

Tribe II.

MAGNOLIE'Æ (plants agreeing in character with Magnòlia). D. C. prod. 1. p. 79. Carpels disposed in spikes along the axis. Leaves destitute of pellucid dots. Calyx deciduous.

V. MANGLIE'TIA (*Manglet* is the name of *M. glaúca* in Java). Blum. bijdr. fl. ned. ind. 1. p. 8. fl. jav. fasc. 19. p. 22.

Lin. syst. *Polyándria, Polygýnia.* Calyx spathaceous, irregularly deciduous. Corolla usually 9-petalled. Stamens awl-shaped; anthers bursting inwards. Carpels numerous, somewhat 2-valved, permanent, 2 or many-seeded, disposed in a dense imbricated cone.—Elegant trees with elliptical-oblong leaves, acuminated at both ends, and glaucous beneath. Flowers solitary, terminal.

1 M. glau'ca (Blum. bijdr. 1. p. 8. fl. jav. fasc. 19. p. 22. t. 6.) leaves elliptical-oblong, acute at both ends, pale glaucous beneath; buds smooth; carpels 2-4 or many-seeded. ♄. S. Native of Java. Flowers beautiful pale yellow, fragrant.

Glaucous-leaved Manglietia. Tree 80 feet.

2 M. insi'gnis (Blum. fl. jav. fasc. 19. p. 22. in a note.) leaves oblong, acuminated; glaucous and netted, with veins be-

neath; buds clothed with rusty down; three outer petals calyciform reflexed; carpels 4-seeded; flower-bud smooth. ♄. F. Native of Nipaul on Sheopore. Magnòlia insígnis, Wall. tent. fl. nap. t. 1. This is a fine shewy tree bearing large yellowish flowers tinged with rose. Strobile ovate, densely imbricated. The wood is pale yellow of a fine grain.

Shewy Manglietia. Tree 40-60 feet.

Cult. These elegant trees never having been introduced to this country, the mode of cultivating them is unknown, but we recommend the same mode of treatment as given for *Michèlia*†.

VII. MICHE'LIA (in honour of Pietro Antonio Micheli, a celebrated Florentine botanist, died in 1737, author of Nova Plantarum Genera Flor. 1729. fol. and several other works). Lin. Gen. 691. Gært. fruct. 2. p. 263. t. 137.

LIN. SYST. *Polyándria, Polygýnia.* Carpels somewhat baccate, opening at the top, many-seeded, disposed in loose spikes (f. 21. *b.*). Calyx of 3 sepals, girded on the outside by a deciduous spath-like bractea, which open laterally. Petals 6-15. Flowers sweet-scented. These elegant trees are a great ornament in India, where they are generally known by the name of *Champa*. They are celebrated by Indian poets, and are highly venerated by the Hindus. They are good timber trees.

1 M. CHAMPA'CA (Lin. spec. 756.) leaves ovate-oblong, acuminated, acute at the base, with the ribs beneath as well as the peduncles and spaths silky. ♄. S. Native of India, where it is also very much cultivated. The tree is highly venerated by the Hindus, who have given one of its names *Tulasi* to a sacred grove of their Parnassus on the banks of the Yamuna, and it is also dedicated by them to their God Vishnu. Lam. ill. t. 493. Blum. fl. jav. fasc. 19. t. 1. M. suavèolens, Pers. ench. 2. p. 94. Champàca, Rheed. mal. 1. p. 31. t. 19. Sampàca, &c. Rumph. amb. 2. p. 199. t. 67. Flowers large, yellow, or copper-coloured, sweet scented through the day but at night they become rather fetid. Peduncles short, axillary 1-flowered. Petals oblong, 8-9 lines long and 3 lines broad. This tree is celebrated for the exquisite perfume of its flowers, of which most Europeans who have been in India speak with rapture, though some find it too powerful. The natives adorn their heads with the flowers, both for the sake of perfume and for the elegant contrast of their rich orange colour with their own black hair. The tree is of moderate size; the bark of its root red, bitter, and very acrid according to Rheede. The flowers are not unlike a double *Narcissus*. The fruit is said to be edible. The name *Champàca* is derived from Ciampa an island between Camboge and Cochinchina where the tree grows. The island is also called Tsampa, hence also *M. Tsiampàca*.

FIG. 21.

Champawk. Fl. throughout the year. Clt. 1779. Tree 30-40 feet.

2 M. KI'SOPA (Hamilt. in D. C. syst. 1. p. 448. Wall. tent. fl. nap. t. 4.) leaves ovate-lanceolate, acuminated, smooth; flowers stalked; anthers erect, acute; flower-buds villous. ♄. G. Native of Nipaul at Harain-Hetty, where it is called *Kisopa*. Very like *M. Champàca*, but differing in the leaves being more coriaceous and never drawn out along the petioles. Petals 9, more oblong and more acute. The fleshy part of the seed is aromatic. Flowers stalked, pale yellow, not above one half the size of those of *M. Champàca*, and hardly sweet-scented.

Kisopa. Fl. Oct. Nov. Tree 50 feet.

3 M. DO'LTSOPA (Hamilt. in D. C. syst. 1. p. 448. Wall. tent. fl. nap. t. 3.) leaves oval-oblong, acuminated, smooth, but rather glaucous and rather puberulous on the under surface; flowers on long stalks; stigmas revolute; anthers mucronate; flower-buds clothed with rusty tomentum. ♄. G. Native of Java and of Nipaul about Harain-Hetty, where it is called *Doltsopa*. Flowers yellow, fragrant; petals oval, 6-9, outer ones oblong, inner ones narrower. The wood is sweet-scented and is the best in Nipaul for buildings.

Doltsopa. Fl. Feb. Tree 40-60 feet.

4 M. TSIAMPA'CA (Lin. Mant. 78.) leaves elliptical, oblong, tapering a little to the base, younger ones silky on the under surface, with pubescence as well as the branchlets. ♄. S. Native of Amboyna in woods. Sampàca sylvéstris, Rumph. amb. 2. p. 202. t. 68. M. serícea, Pers. ench. 2. p. 94. This is a taller tree than *M. Champàca* and with larger leaves. Flowers corymbose on the peduncle of a light straw colour, with but little scent. The seeds are from 2 to 7 of a pale reddish colour. Perhaps many species are confounded under *M. Tsiampàca* and *M. Champàca*. The Javanese call this tree *Tsiampacca conneng*.

Tsiampaca. Fl.? Tree 60 feet.

5 M. MACROPHY'LLA (D. Don. prod. fl. nep. p. 226.) leaves lanceolate, short-pointed, waved, glabrous, tapering to the base; flowers terminal, solitary, sessile. ♄. G. Native of Nipaul. An evergreen tree with white flowers about the size of those of *Magnòlia glaúca*. Ovaries 50-60.

Large-leaved Michelia. Tree 30 feet.

6 M. LONGIFO'LIA (Blum. bijdr. fl. ned. ind. 1. p. 7. fl. jav. fasc. 19. t. 2.) leaves elliptical-oblong, tapering to both ends, smooth, stiff; peduncles, buds, and spaths silky. ♄. S. Native of Java. Flowers at first white, then yellowish, sweet-scented.

Var. β, racemòsa (Blum. fl. jav. fasc. 19. t. 3.) peduncles 1-3-flowered.

Long-leaved Michelia. Tree large.

7 M. MONTA'NA (Blum. bijdr. fl. ned. ind. 1. p. 7. fl. jav. fasc. 19. p. 15. t. 5.) leaves oval-oblong, acute at both ends, coriaceous, smooth; buds, peduncles, and spaths almost naked; petals 9, lanceolate, acute. ♄. S. Native of Java. Flowers pale yellow, sweet-scented.

Mountain Michelia. Tree 60 feet.

8 M. VELUTI'NA (D. C. prod. 1. p. 79.) leaves elliptical-oblong, acuminated, acute at the base, upper surface quite smooth, under surface velvety with white tomentum as well as the branchlets. ♄. G. Native of Nipaul and Java. Flower-buds velvety, tomentose. Flowers axillary, solitary, nearly sessile, yellow, Blum. fl. jav. fasc. 19. p. 17. t. 5 & 6. M. Tsiampàca, Blum. bijdr. fl. ind. ned. 1. p. 7.

Velvety-leaved Michelia. Tree 30 feet.

9 M. RUFINE'RVIS (D. C. syst. 1. p. 449.) leaves elliptical, oblong, acuminated at both ends, under surface at the nerves as well as petioles, spaths, and young twigs clothed with yellowish-brown pubescence; outer petals spatulate, blunt. ♄. S. Native of Java, and now cultivated in the Mauritius.

Rufous-nerved-leaved Michelia. Tree 30 feet.

10 M. PUBINE'RVIA (Blum. bijdr. 1. p. 8. fl. jav. fasc. 19. t. 4.) leaves oblong, tapering to both ends, with the veins beneath and the spaths clothed with rufous-villi; outer petals spatulate, obtuse. ♄. S. Native of Java. M. rufinérvia, Spreng. syst. app. p. 217. Flowers pale copper-coloured, sweet-scented.

Blume's Michelia. Tree 50-60 feet.

11 M. LANUGINO'SA (Wall. tent. fl. nap. t. 5.) leaves oblong, acute, clothed with dense wool on the under surface as well as the buds; flowers many-petalled. ♄. S. Native of Nipaul. Flowers large, pale yellow, very fragrant.

Woolly Michelia. Tree 60 feet.

12 M. PARVIFLO'RA (Rumph. amb. 2. p. 199. D. C. syst. 1. p. 449.) leaves elliptical, a little acuminated, smooth; branchlets, buds, and spaths clothed with rufous tomentum. ♄. S. Native of the islands of Java and Ternata. Del. icon. sel. 1. t. 85. Blum. fl. jav. fasc. 19. p. 18. M. fuscàta, Spreng. Magnòlia parviflòra, D. C. syst. 1. p. 459. Flowers small, of a livid flesh colour, or cream-coloured, sweet-scented. Peduncles axillary, solitary, 1-flowered. Petals 6, inner ones broadest.

Small-flowered Michelia. Shrub 7-10 feet.

† *Species scarcely known.*

13 M. CÆRU'LEA (Rumph. amb. 2. p. 199.) ♄. S. Native of Java, where it is called *Tsiampacca-Biru*. Flowers blue.

Blue-flowered Michelia. Tree 30 feet.

14 M. A'LBA (Rumph. amb. 2. p. 199.). ♄. S. Native of Java and Baleya. Flowers white, smaller and more pleasant than those of *M. Champàca*.

White-flowered Michelia. Tree 20 feet.

Cult. *Michelia* is a genus of highly ornamental trees. They succeed well in a mixture of loam and peat. Ripened cuttings do best in sand under a hand-glass, in heat. They take well and grow freely, inarched on the common *Purple Magnòlia*, which is the readiest way of propagating them. (Sweet.)

VIII. MAGNO'LIA (in honour of Pierre Magnol, professor of Medicine, and prefect of the Botanic Garden at Montpelier, died 1715, author of Botanicum Monspeliense, 1676, and other works). Lin. gen. no. 690. Gært. fruct. 1. p. 343. t. 70. Juss. gen. 281. Lam. ill. t. 490. D. C. syst. 1. p. 449. prod. 1. p. 79.

LIN. SYST. *Polyándria, Polygýnia.* Carpels disposed in crowded spikes, opening by the external angle, 1-2-seeded, permanent. Seeds baccate, somewhat cordate, pendulous, hanging out beyond the capsules by a very long umbilical thread. Sepals 3. A genus of highly ornamental trees. The leaves are large and entire. The flowers are solitary, terminal, very large and odoriferous. The bark is bitter and aromatic, tonic and febrifuge. Seeds also bitter and often febrifuge. Capsules aromatic.

SECT. I. MAGNOLIA'STRUM (from *Magnolia* and *astrum*, and affixed signification like; that is to say, the true *Magnolias*). D. C. syst. 1. p. 450. prod. 1. p. 80. American species, with one spath-like bractea, inclosing the flower-bud; ovaries approximate; anthers bursting outwards.

1 M. GRANDIFLO'RA (Lin. spec. 755.) evergreen; leaves oval-oblong, coriaceous, upper surface shining, under surface rusty; flowers erect, 9-12-petalled, expanded. ♄. H. Native of North America in forests, in marshy places from North Carolina to Louisiana. Lam. ill. 490. Savi. bibl. ital. 1819. no. 47. p. 219. Mich. f. arb. amer. 3. p. 71. t. 1. Duham. arb. ed. nov. vol. 2. p. 219. t. 65.

This very stately, elegant, evergreen tree rises in its native country to the height of 70 or 80 feet, dividing into many branches, which form a large pyramidal head. Leaves resembling those of the common *Laurel*, pale green and shining, about 10 inches long. Flowers large, white, sweet-scented. Fruit ovate, 4 inches long, resembling a cone. It should be planted in a sheltered situation, as it is much more tender than the other American species. In America it flowers the greater part of the summer, beginning in May; with us it does not begin till June.

Var. α, *rotundifòlia* (Sweet, hort. brit. p. 11.) leaves roundish.

Var. β, *obovàta;* leaves obovate-oblong; flowers expanded. Hort. kew. ed. 2. vol. 3. p. 329. In Carolina this variety is known by the name of *Big Laurel.*

Var. γ, *elliptica;* leaves oblong-elliptical; flowers somewhat contracted. Ait. hort. kew. ed. 2. vol. 3. p. 329. Lodd. bot. cab. 814. Mill. icon. vol. 2. t. 172. This variety is called the *Exmouth Magnòlia.* It is hardier than the other varieties, and flowers earlier.

Var. δ, *ferrugìnea* (Sims, bot. mag. 1952.) leaves oblong-lanceolate, under surface rusty; flowers somewhat contracted. This variety flowers at a smaller size than the other varieties.

Var. ε, *lanceolàta;* leaves oblong-lanceolate; flowers somewhat contracted. Ait. hort. kew. ed. 2. vol. 3. p. 329. M. grandiflòra, Andr. bot. rep. 518.

Great-flowered or Great Laurel-leaved Magnolia. Clt. 1737. Fl. June, Aug. Tree 70 feet.

2 M. GLAU'CA (Lin. spec. ed. 2. p. 755.) almost deciduous; leaves elliptical, obtuse, under surface glaucous; flowers 9-12-petalled, contracted; petals ovate, concave. ♄. H. Native of North America in low, moist, swampy ground at a little distance from the sea, from Massachusetts to Florida and Louisiana, especially in New Jersey and Carolina. Schkuhr. handb. no. 1441. t. 148. Lodd. bot. cab. t. 215. Sims, bot. mag. 2164. Mich. f. arb. amer. 3. p. 77. t. 2. Duham. abr. ed. nov. vol. 2. p. 223. t. 66. Bonpl. nav. p. 103. t. 42. Bigl. med. bot. t. 27. M. fràgrans, Sal. prod. 379. M. Virginiàna, var. α, glaúca, Lin. spec. ed. 1. p. 538. Fruit red when ripe.

Var. β, *argéntea;* leaves oblong, under surface silvery, whitish-glaucous. Pursh. in herb. Lamb.

Var. γ, *Thomsoniana* (Hort. ulan.) a hybrid between *M. glaúca* and *M. umbrélla*, raised from seed by Mr. Thomson, of Mile End Nursery.

Var. δ, *Gordoniàna* (Hort.) hybrid.

Var. ε, *Burchelliàna* (Hort.) hybrid.

The bark of this tree has a bitter taste, combined with a strong aromatic pungency, which approaches that of *Sassafras.* The aroma resides in a volatile portion, which is probably an essential oil, or a variety of camphor. It is lost from the bark in a dry state. Water distilled from the green bark has its peculiar flavour, with an empyreumatic smell. The dry bark affords a little resin, and more of a bitter extractive substance. As a medicinal article *Magnolia* is to be considered an aromatic tonic, approaching in its character to *Cascarilla Canella*, &c. Chronic rheumatism is one of the diseases in which it exhibits most efficacy, all parts of the plant are employed in tincture with very good success in this disease. In intermittent and remittent fevers the bark is one of the many tonics which have been resorted to for the cure of the inhabitants of the marshy countries of North America. Sufficient testimony has been given in its favour as to warrant a belief that it is fully adequate to the removal of fever and ague, when administered like the *Cinchòna* in liberal quantities between the paroxysms. Several other species of *Magnòlia* resemble the present very closely in their sensible properties, and as far as have been tried they are similar in their medicinal effects. In order to secure the whole efficacy residing in these trees, a tincture should be made from the bark or cones while green, or very recently dried, before their more volatile parts have escaped.

This tree usually grows 15 or 20 feet high. The flowers are white or cream-coloured, and have an agreeable sweet scent.

In America this tree is known by the names of *White Laurel, Swamp Laurel, Swamp Sassafras, Sweet Bay*, and *Beaver Tree.* It has the last name, because the root is eaten as a great dainty by beavers, and this animal is caught by means of it. Kalm says these trees may be discovered at a distance of 3 miles by the scent of their blossoms, if the wind be favorable. It is beyond description pleasant to travel in the woods at the flowering season, especially in the evening. They retain their flowers for 3 weeks, and even longer. The berries also look very handsome, when they are ripe, being of a rich red colour, and hanging in bunches on slender threads. The inhabitants cure coughs and other pectoral diseases by putting these berries into brandy, and giving a

draught of the liquor every morning. The wood is made use of for joiners' planes. Dillenius remarks that the flower never opens in the morning, that the calyx falls off at the second opening of the flower, but that the petals dry on, and that the scent resembles that of the Lily of the Valley, with a mixture of aromatic.

Glaucous-leaved or Deciduous Swamp Magnolia. Fl. May, June. Clt. 1688. Tree 15 or 20 feet.

3 M. LONGIFO'LIA (Sweet, hort. brit. p. 11.) evergreen; leaves elliptical, acute at both ends, under surface glaucous: flowers 9-12-petalled, contracted; petals ovate, concave. M. glaúca *β*, longifòlia, Ait. hort. kew. ed. 1. vol. 2. p. 251, Pursh. fl. amer. sept. 2. p. 381. ♄. H. Native of Florida and Georgia. Flowers white, and sweet-scented. This is a very handsome tree.

Long-leaved or Evergreen Swamp Magnolia. May, June. Tree about 30 feet.

4 M. UMBRE'LLA (Lam. dict. 3. p. 673.) deciduous; leaves lanceolate, spreading, adult ones smooth, younger ones pubescent underneath; petals 9-12, exterior ones pendent. ♄. H. Native of North America on wooded mountains from New York to Carolina and Georgia, as well as Virginia. M. tripétala, Lin. spec. ed. 2. p. 756. Mich. f. arb. amer. 3. p. 90. t. 5. Pursh. fl. amer. sept. 2. p. 381. M. frondòsa, Sal. prod. 379. Leaves from 1 to 2 feet long, placed at the ends of the branches in a circular manner, somewhat like an umbrella, whence its name *Umbrella Tree*. It is called *Elk-wood* in the mountains of Virginia. The wood is soft and spongy. The flowers are 2 or 3 inches in diameter, white and sweet-scented but heavy.

Umbrella Magnolia. Fl. May, June. Clt. 1752. Tr. 35 ft.

5 M. ACUMINA'TA (Lin. spec. ed. 2. p. 756.) deciduous; leaves oval, acuminate, under surface pubescent; flowers 6-9-petalled. ♄. H. Native of North America from Pennsylvania to Carolina in mountain valleys in a fertile soil. Mich. f. arb. amer. 3. p. 82. t. 3. Lodd. bot. cab. 418. Sims, bot. mag. 2427. Pursh. fl. amer. sept. 2. p. 381. The flowers are yellowish, mixed with faint blue, bluish, or pea-green, 3 or 4 inches in diameter, scarcely scented, not remarkable for their beauty. The fruit is about 3 inches long, somewhat resembling a small cucumber, whence the inhabitants of North America call it *Cucumber tree*, and is used by them as a wholesome bitter. The wood is of a fine grain, and orange-coloured. There is a tincture prepared from the fruit of this tree which has some reputation for removing attacks of rheumatism.

Var. β, Candóllii (D. C. prod. 1. p. 80. 85.) leaves ovate, oblong, acute; flowers greenish. M. de Candóllii, Savi, bibl. ital. 1819. no. 47. p. 224. with a figure.

Pointed-leaved Magnolia. Fl. May, July. Clt. 1736. Tree 30 to 60 feet.

6 M. AURICULA'TA (Lam. dict. 3. p. 673.) deciduous; leaves smooth, under surface somewhat glaucous, spatulately-obovate, cordate at the base, with blunt, approximate auricles; sepals 3, spreading; petals 9, oblong. ♄. H. Native of North America in the Alleghany Mountains from the head waters of the Susquehanna to Carolina. M. auriculàris, Sal. par. lond. t. 43. Sims, bot. mag. t. 1206. Mich. f. arb. amer. 3. p. 94. t. 7. Andr. bot. rep. t. 573. Pursh. fl. amer. sept. 2. p. 382. M. Frasèri, Watl. fl. carol. 159. icon. A tree from 40 to 50 feet high, with spongy wood. The bark of this and the greater part of the foregoing species, is esteemed a valuable medicine in North America, particularly in intermittent fevers, from which circumstance it is known in some places by the name of *Indian Physic*. The flowers are erect, of a yellowish white colour, and remarkably sweet-scented, 3 or 4 inches in diameter. The fruit is rose-coloured. This tree will blossom when very young.

Eared-leaved Magnolia. Fl. April, May. Clt. 1786. Tree 40 to 50 feet.

7 M. PYRAMIDA'TA (Bartr. itin. ed. germ. 390.) deciduous; leaves smooth, the same colour on both surfaces, spatulate-obovate, cordate at the base; auricles spreading; sepals 3, spreading; petals 9-lanceolate, pointed. ♄. H. Native of the western parts of Carolina and Georgia. Ker. bot. reg. 407. Very like *M. auriculàta*, but it grows in a more pyramidal form, as well as differing as above, and the leaves are not above half the size.

Pyramidal Magnolia. Fl. April, June. Clt. 1811. Tree 30 ft.

8 M. MACROPHY'LLA (Mich. fl. bor. amer. 1. p. 327. f. arb. amer. 3. p. 79. t. 7.) deciduous; leaves very large, oblong-obovate, somewhat panduriform, cordate at the base, under surface whitish-glaucous; petals 6-9, ovate. ♄. H. Native of North America in moist, swampy, shady places, about Lincolton in upper Carolina, and in the deep forests of Tennassee. Sims, bot. mag. 2189. Bonpl. nav. t. 33. A beautiful tree, with white smooth bark. The leaves are from 1 to 3 feet long, and from 8 to 10 inches broad. The flowers are white and purple at the base, sweet-scented, 8 or 10 inches in diameter.

Long-leaved Magnolia. Fl. Ju. Jul. Clt. 1800. Tree 35 ft.

9 M. CORDA'TA (Mich. fl. bor. amer. 1. p. 328. f. arb. amer. 3. p. 87. t. 7.) deciduous; leaves heart-shaped, somewhat ovate, acute, under surface tomentose, upper surface smooth; petals 6-9, oblong. ♄. H. Native of North America along the sunny banks of the river Savannah in Upper Georgia and Upper Carolina. Ker. bot. reg. t. 325. Lodd. bot. cab. t. 474. A tree with chinky bark. The leaves are from 4 to 6 inches long, and from 3 to 5 broad. The flowers are erect and yellow lined with purple, about 4 inches in diameter.

Heart-leaved Magnolia. Fl. April, Jul. Tree 40 to 50 feet.

SECT. II. GWILLI'MIA (General Gwillim, sometime governor of Madras). Rottler. in D. C. syst. 1. p. 455. prod. 1. p. 81. Asiatic species, generally with two opposite spath-like bracteas inclosing the flower-bud; anthers bursting inwards; ovaries somewhat distant. Perhaps the species of this section with 1 bractea should have been given among the *Michelias?* It is, however, evident that none of them are true *Magnolias*.

10 M. EXCE'LSA (Wall. tent. fl. nap. t. 2.) leaves oblong-elliptical, acuminated, glaucous, and netted with veins beneath; buds bearded with rusty hairs; flowers axillary, solitary, 12-petalled; carpels globose, remote, 1-seeded. ♄. G. Native of Nipaul on Sheopore. A magnificent tree, bearing large, white, sweet-scented flowers. The wood of this tree is greatly prized by the inhabitants of Nipaul at Patma, where it is employed in joinery, and is commonly sold under the name of *Champ*. The colour of this wood is at first greenish but changing to a fine yellow colour, with a very fine grain.

Lofty Magnolia. Tree 50 to 80 feet.

11 M. YU'LAN (Desf. arb. 2. p. 6.) deciduous; leaves obovate, abruptly acuminated, younger ones pubescent, expanding after the flowers; flowers erect, 6-9-petalled; styles erect. ♄. H. Native of China. Bonpl. nav. p. 53. t. 20. M. prècia, Correa in Vent. malm. no. 24. M. conspícua, Sal. par. lond. 38. t. 38. Sims, bot. mag. 1621. A very shewy tree about 30 or 40 feet high, but only grows to the height of 8 or 10 feet in the gardens of Europe, covered with innumerable sweet-scented flowers, which are white, and sometimes suffused with purple, expanded throughout the day-time. This species is hardy in our climate, and is at an early age covered with blossoms from February to April, though the severe east winds often injure its beauty, unless it be protected or planted in a conservatory. *Yu-lan* is the name of the tree in China, where it has been cultivated since the year 627.

Yulan Magnolia. Fl. Feb. April. Clt. 1789. Tree 40 to 50 ft.

12 M. KO'BUS (D.C. syst. 1. p. 456.) deciduous; leaves obovate, acuminated at both ends, produced after the flowers, younger ones pubescent underneath, adult ones smooth; flowers erect of

3 sepals and 6 petals; styles reflexed. ♄. H. Native of the island of Nipon in Japan. M. gràcilis, Sal. par. t. 87. Kòbus, Banks, icon. Kæmpf. t. 42. M. glaúca, var. *a*, Thunb. fl. jap. 236. M. tomentòsa, Thunb. in Lin. soc. trans. 2. p. 336? About the size of a cherry tree, with rough bark which smells like camphor. The flowers are erect and solitary, with the outside purple and the inside white. Ovaries purple. A very ornamental tree, requiring protection against frost when in flower, as the flowers are apt to be hurt by it. *Kobus*, or *Side Kobusi*, is the name of the tree in Japan.

Kobus or Slender Magnolia. Fl. March, April. Clt. 1804. Tree 10 feet.

13 M. OBOVA'TA (Thunb. in Lin. soc. trans. 2. p. 336.) deciduous; leaves obovate, acute, reticulately-veined, almost smooth; flowers erect, of 3 sepals and 6 obovate petals; styles very short. ♄. H. Native of Japan, but cultivated both in the gardens of China and Japan as an ornament.

Var. a, denudàta (Lam. dict. 3. p. 675.) flowering branches without leaves; petals obovate. ♄. H.—Banks, icon. Kæmpf. t. 43. Native of the island of Nipon in Japan. M. glaúca, var. *β*, Thunb. jap. p. 236. Flowers red.

Var. β, díscolor (Vent. malm. 24. t. 24.) flowering branches leafy; petals obovate of two colours. ♄. H. M. purpùrea, Curt. bot. mag. t. 390. Andr. bot. rep. t. 324. Flowers purple outside but whitish inside.

Var. γ, liliiflòra (Lam. dict. 3. p. 657.) flowering branches leafy: petals oblong, white on both sides.—Banks, icon. Kæmpf. t. 44. ♄. H. Native of China. Flowers white.

This shrub has a very elegant and shewy appearance when in flower; at this time it requires to be protected from the frosts during night by a mat, as the flowers are apt to be hurt. The only variety that has as yet been introduced to our gardens is var. *β*. This shrub appears to most advantage in a conservatory.

Obovate-leaved or Purple Magnolia. Fl. Mar, April, May. Clt. 1790. Shrub 5 feet.

14 M. SOULANGEA'NA (Ann. hort. soc. par. pt. 2. ex Soulange Bodin. Sweet, fl. gard. t. 260.) deciduous: leaves obovate, abruptly acuminated, veiny, pubescent on both surfaces; sepals 3; petals 6. ♄. H. or F. Lindl. bot. reg. 1164. This is a hybrid, raised from the seed of *M. Yulan* by M. Soulange Bodin, the other parent is supposed to be *M. obovàta, var. β, discolor*. The flowers are of six obovate, expanded, whitish petals tinged with purple. This species requires protection in severe weather.

Soulange Bodin's Magnolia. Fl. March, May. Clt. 1828. Shrub 5 to 6 feet.

15 M. FUSCA'TA (Andr. bot. rep. t. 229.) evergreen; leaves elliptical-oblong, adult ones smooth, younger ones as well as branches and petioles covered with brown tomentum; flowers erect. ♄. F. Native of China, where it is cultivated for the fragrance of its flowers. Sims, bot. mag. t. 1008. M. fasciàta, Vent. malm. no. 24. adn. 2. Flowers small, very fragrant, of a dull purple colour.

Var. β, annonæfòlia (Sal. par. lond. no. 5. t. 5.) leaves broader; pedicels a little shorter: flowers more red; anthers more numerous. ♄. G. Native of China.

Var. γ, hebecàda (D. C. syst. 1. p. 458.) flowers on shorter peduncles; branches more velvety-tomentose; leaves shorter. ♄. G. Native of India.

Brown-flowered Magnolia. Fl. April, May. Clt. 1789, *β*. 1804. Shrub 2 to 4 feet.

16 M. PTEROCA'RPA (Roxb. corom. 3. p. 62. t. 266.) leaves oblong, with tapering base, entire; flowers terminal, solitary; spaths of flower-buds several deciduous; sepals 3, petals 6. ♄. S. Native in the vicinity of Silhet and Chittagong. Flowers as large as those of *M. grandiflòra*, white, and sweet-scented, and with the sepals green on the outside. Seeds red. Strobile winged. Anthers red and yellowish. The tree is called *Doolee champa* in Silhet. Perhaps a species of *Talàuma*.

Wing-fruited Magnolia. Fl. April, May. Tree 40 feet.

17 M. INODO'RA (D. C. syst. 1. p. 459.) leaves ovate, acuminated, smooth; peduncles terminal, 1-flowered, crowded; petals 6, thick, conniving into a tube, reflexed at the apex. ♄. G. Native of China in fields near Canton. Liriodéndron liliífera, Lour. coch. ed. Willd. 1. p. 424. but not of Lin. Sampàca montàna, Rumph. amb. 2. p. 204. t. 69? A middle-sized tree, with large pale scentless campanulate flowers.

Scentless-flowered Magnolia. Tree 16 feet.

18 M.? co'co (D. C. syst. 1. p. 459.) leaves ovate, quite entire, shining; flowers solitary; sepals 3, oblong, and are as well as the petals incurved; petals 6, fleshy; ovaries 8. ♄. G. Native of Cochin-China, Macao, and Canton, where it is cultivated in the gardens for the beauty and scent of the flowers. Liriodéndron còco, Lour. coch. ed. Willd. 1. p. 424. Flowers very large and pure white, with an exquisite scent. The flower-bud before opening is roundish, and is likened to the *coco-nut*, whence its name about Macao *Fula-coco*.

Coco-nut-like-budded Magnolia. Shrub 5 feet.

19 M. FI'GO (D. C. syst. 1. p. 460.) leaves lanceolate, quite entire, shining, reflexed-incurved; flowers solitary; petals 6, ovate-oblong, erect; ovaries 40 or 50. ♄. G. Native of China, where it is also cultivated, especially about Macao and Canton. Liriodéndron Fìgo, Lour. coch. ed. Willd. 1. p. 424. Michèlia Fìgo, Spreng. syst. 2. p. 643. Flowers solitary, pale, spotted with red on the inside, sweet-scented. There is only one bractea inclosing the flower-bud, therefore this plant may be a species of *Michèlia*. The shrub is called *Fula-Figo* by the inhabitants of Macao.

Fula-Figo. Shrub 4 feet.

Cult. The hardy species are chiefly from North America, but some of the Chinese kinds endure our winter tolerably well; they should be planted in conspicuous situations, as they are handsome shrubs, and flower abundantly when of sufficient size. *M. glaúca* and *M. longifòlia* like a peat soil, and a moist situation. The species are generally increased by layers put down in spring or autumn, or by seeds procured from the places of their natural growth. When the layers are first taken off, they should be potted in a mixture of loam and peat, and placed in a close frame, till they have taken fresh root. None of the leaves should be taken off or shortened, nor any roots be cut off or their tops shortened, as they will not succeed so well; for the more branches and leaves are on them the sooner they will strike fresh root. The Chinese kinds are often inarched or budded on *M. obovàta*, which takes readily. The green-house kinds thrive best in peat mixed with loam; they are also increased by inarching or budding on *M. obovàta*, which is one of the readiest growing sorts. *M. pùmila, fuscata, annonæfolia*, and any of the weak growing kinds, strike readily from cuttings taken off as soon as ripe, and planted in a pot of sand and placed under a hand-glass.

The seeds of the North American species are received annually from that country. They should be sown as soon after their arrival as possible, in pots or boxes of light rich earth, covering them half an inch deep; these may be placed either in a hot-bed or in a warm sheltered situation, or they may be sown in the open ground, and when the plants are of sufficient size they should be planted out singly in pots, and shaded until they take fresh root; and at the approach of frost they should be sheltered by a frame for two or three successive winters, indulging them in the open air in mild weather. When they are replanted none of the roots nor leaves should be shortened. With regard to the disposition of the hardy species, they should have a sheltered sunny situation in conspicuous places. They have a very good

effect disposed singly in different parts, as in open places of pleasure-grounds in warm situations.

IX. TALA'UMA (*Talauma* is the aboriginal name of *T. Plumièri.*) Juss. gen. 281. D. C. syst. 1. p. 460. prod. 1. p. 81.

Lin. syst. *Polyándria, Polygýnia.* Carpels 1 or 2 seeded, disposed in spikes, joined into strobile-like fruit (f. 22. *b.*) opening irregularly on the outside; seeds in each cell 2, or from abortion solitary, hanging by a thread. Spath deciduous, covering the flower-bud before expansion. Sepals 3. Petals 6-12. Anthers bursting inwards. Perhaps several of the East India species of *Magnòlia* is referable to this genus. Large trees, with the habit of *Magnòlia*, with large terminal solitary flowers of 3 sepals and 6-12 petals.

1 T. Plumi'era (Swz. prod. 87. fl. ind. occid. 2. p. 997.) leaves ovate-roundish, somewhat cuneated at the base; petals 12, thick, oblong, obtuse. ♄. S. Native of Màrtinico, Guadeloupe, St. Lucy. Magnòlia Plumìera, Swz. prod. 87. fl. ind. occid. 2. p. 997. Annòna dodecapétala, Lam. dict. 2. p. 127. Magnòlia fatiscens, Rich. icon. et descr. ined. T. cærùlea, Jaum. fam. nat. 2. p. 76. A tree from 50 to 80 feet high. Leaves coriaceous, smooth, reticulately veined, ovate-roundish, somewhat cuneated at the base. Flowers large, white, sweet-scented, solitary on the tops of the branches. Fruit, according to Plumier, blue; according to Swartz sordid-green. The flowers are used by the distillers of Martinico to sweeten liquors.

Var. β, longifòlia (D. C. prod. 1. p. 82.) leaves obovate-oblong. ♄. S. Native of Dominica.

Plumier's Talauma. Tree 50 to 60 feet.

2 T. ova'ta (St. Hil. fl. bras. 1. p. 26. t. 4. f. A.) leaves ovate, bluntish; flowers of 6-petals. ♄. S. Native of Brasil in the western part of the province of Minas Geraes in marshes. Magnòlia ovàta, Spreng. syst. app. 217. Leaves 5-7 inches long and 3-4 broad. Petals 20 lines long, white. Sepals rather glaucous. (f. 22. *a.*)

FIG. 22.

Ovate-leaved Talauma. Tree 20 feet.

3 T. Sellowia'na, (St. Hil. fl. bras. 1. p. 26. t. 4. f. B.) leaves obovate-round, very blunt, but acute at the base; flowers of 6-petals. ♄. S. Native of Brasil in woods not far from the town called Sorocaba. Magnòlia Sellòi, Spreng. syst. app. 216. Leaves 3-5 inches long, and 3-4 broad. Petals 14-16 lines long, white. Sepals rather glaucous (f. 22. *b.*).

Sello's Talauma. Fl. Jan. Tree 50 feet.

4 T. Cando'llii (Blum. bijdr. fl. ned. ind. 1. p. 9. fl. Jav. fasc. 19. p. 32. t. 9.) leaves oblong, acuminated at both ends; flowers 9-12-petalled, outer ones short; peduncles 1-flowered, rather drooping, and are as well as the petioles of the younger leaves clothed with rufous villi; stem shrubby. ♃. S. Native of Java. Magnòlia odoratíssima, Reinw. ined. Magn. pùmila, Spreng. exclusive of the synonyms. Flowers large, cream-coloured.

Var. β, latifòlia (Blum. l. c.) leaves broader, and less attenuated at the base.

De Candolle's Talauma. Fl. Ju. Jul. Clt. 1828. Shrub 6 ft.

5 T. Ru'mphii (Blum. bijdr. fl. ned. ind. 1. p. 10. fl. jav. fasc. 19. p. 39.) leaves oblong-lanceolate, very much acuminated; peduncles 1-flowered erect. Stem arboreous; petals 6. ♄. S. Native of Java and the Moluccas. Magnòlia Rúmphii, Spreng. syst. app. p. 217. Sampàca montàna, Rumph. amb. 2. t. 69. Flowers pale-yellow or cream-coloured, terminal, sweet-scented.

Rumphius's Taláuma. Fl. Ju. July. Clt. 1828. Tree 30 feet.

6 T. muta'bilis (Blum. fl. jav. fasc. 19. p. 35. t. 10.) shrubby; leaves elliptical, acute at both ends, villous on the ribs beneath; flowers of 9 almost equal petals. ♄. S. Native of Java. Flowers solitary, drooping, pale-green, tinged with red or purple, at last brownish.

Var. β, acuminàta (Blum. l. c. p. 36. t. 11.) leaves oval-oblong, acuminated, smooth beneath, but the young ones are pubescent beneath.

Var. γ, longifòlia (Blum. l. c. p. 37.) leaves oblong or lanceolate, acuminated at both ends, younger ones puberulous beneath.

Var. δ, spléndens (Blum. l. c. p. 38. t. 12.) leaves oblong, acuminated, scarcely acute at the base or roundish, smooth, young ones covered with silky brown pubescence on the ribs beneath.

Changeable Talauma. Shrub 6 to 8 feet.

7 T. pu'mila (Blum. fl. jav. fasc. 19. p. 38. t. 12. C.) leaves elliptical, acuminated at both ends, smooth, reticulately veined; flowers drooping, of 6-9 petals. ♄. S. Native of Amboyna and Java on high mountains. Liriodéndron liliífera, Lin. spec. 755. Magnòlia pùmila, Andr. bot. rep. t. 226. Vent. malm. t. 37. Sims, bot. mag. 977. Flowers cream-coloured, very fragrant at night. Anthers club-shaped.

Dwarf Talauma. Fl. year. Clt. 1786. Shrub 2 to 4 feet.

8 T. Mexica'na; leaves oval, tapering a little at the base, blunt; flowers 9-petalled, expanded; petals ovate, flat. ♄. S. Native of Mexico. Yoloxochitl Aristòchyea, Hern. mex. with a figure. Magnòlia grandiflòra, Moc. et Sesse, fl. mex. descr. ined. with a figure. Magnòlia Mexicàna, D. C. syst. 1. p. 451. Magnòlia glaúca, Moc. et Sesse, fl. mex. icon. ined. Flowers large, white, but purplish inside, sweet-scented.

Mexican Talauma. Tree 50 feet.

9 T. Roxbu'rghii; leaves oblong-elliptical, tapering to both ends a little, but obtuse at the point, coriaceous, feather-nerved, prominently reticulated, smooth on both surfaces, shining above. Sepals 3; petals 6; spath 1-leaved, inclosing the flower-bud. ♄. S. Native of the East Indies. Liriodéndron grandiflòrum, Roxb. hort. beng. p. 43. Flowers probably white; sepals and petals coriaceous and obtuse. Perhaps a species of *Magnòlia*.

Roxburgh's Talauma. Tree 50 feet.

Cult. Talauma is a genus of magnificent trees and shrubs, resembling *Magnòlias.* A mixture of loam, peat, and sand, will suit them well. They may be increased by layers or inarching on *Magnòlia obovàta*, and ripened cuttings of most of the species will root if planted in a pot of sand, and placed under a hand-glass, in heat. The leaves should not be shortened †.

X. AROMADE'NDRON (from *αρωμα, aroma*, fragrance; *δενδρον, dendron*, a tree; the flowers are very sweet-scented, and diffuse their fragrance to a considerable distance.) Blum. bijdr. fl. ind. ned. 1. p. 10. fl. jav. fasc. 19. p. 25. t. 7 and 8.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 1 spathaceous leaf. Petals very narrow and very numerous, about 28, disposed in a quaternary order. Stamens numerous, awl-shaped; anthers bursting outwardly. Carpels 2-seeded, joined together into egg-shaped ligneous fruit. A large lofty elegant tree, with oblong-lanceolate distich leaves, and terminal, solitary, large, white, very fragrant flowers, at length changing to a straw-colour. This genus is easily distinguished from *Talàuma* by the number of the petals.

1 A. e'legans (Blum. bijdr. 1. p. 10. fl. jav. l. c.) ♄. S. Native of Java on the mountains. The wood of this tree is excellent, of a fine grain, and is used in Java for many purposes. The bark is a grateful aromatic bitter, and is an excellent stomachic.

Elegant Aroma-tree. Tree 80 to 140 feet.

Cult. As this elegant tree has not yet been introduced into the gardens the mode of treating it is unknown. However, should it be, we would recommend its being grown in a mixture of loam, peat, and sand. For the manner in which we recommend increasing it see *Michèlia* †.

XI. LIRIODE'NDRON (from λειριον, *leirion*, a lily; δενδρον, *dendron*, a tree; because the tree bears flowers resembling the lily, but more like the tulip.) Lin. gen. no. 689. Juss. gen. 281. Gært. fruct. 2. p. 475. t. 178. Lam. ill. t. 491. D. C. syst. 1. p. 461.

Lin. syst. *Polyándria*, *Polygýnia.* Carpels 1-2-seeded, disposed in spikes, indehiscent, deciduous, drawn out into a wing at the apex. Calyx of 3 deciduous sepals. Corolla of 6 petals, conniving into a bell-shaped flower.

1 L. tulipi'fera (Lin. spec. 755.) ♄. H. Native of North America in swampy places. Mich. f. arb. amer. 3. p. 202. t. 5. Duham. arb. ed. nov. vol. 3. p. 61. t. 18. Curt. bot. mag. 275. Schkuhr. handb. 2. p. 93. t. 147. Bigel. amer. med. bot. t. 31. L. pròcerum, Sal. prod. 379. Tulipífera lyriodéndron, Mill. dict. no. 1. A tall elegant deciduous tree, very commonly cultivated, particularly in the South of Europe, in avenues. Leaves smooth, truncate at the top, 4-lobed, resembling a saddle in shape. Flowers large, solitary, terminal, variegated with green yellow and orange-colour, furnished with two deciduous bracteas under the flowers. The bark of the *Tulip-tree* has a very bitter taste, and strong aromatic pungency. The latter property appears to reside in a volatile oil. When the bark is distilled with water it fills the apartment with its fragrant odour. A bitter resin exists in a small quantity in the bark. The bark both of the root and branches act on the system as a stimulating tonic and diaphoretic, having properties resembling the *Cascarilla.* The disease in which it has been most employed is intermittent fever. As a warm sudorific the bark has been employed with success by various practitioners in the United States of America in chronic rheumatism.

The wood of this tree is smooth and fine grained, very easily wrought and not liable to split. It is used for various kinds of carving and ornamental work, and for articles of house-furniture. Michaux says, that the joinery or inside-work of the houses in the western states of North America is most frequently of this material. The common use it is put to is in the manufacture of carriages, to form the pannels of coach and chaise bodies. For this purpose it is particularly fitted by its smoothness, flexibility, and toughness.

Obs. There are two varieties of this tree; the one called *white-wood* or *white poplar*, and the other *yellow-wood* or *yellow poplar*, in America; the first has the lobes of its leaves acute, and is called *var. acutíloba* by Mich. The second has blunt lobes, and is called *var. obtusíloba* by Mich.

Tulip-bearing Lily-tree, Tulip-tree or Saddle-tree. Fl. June, July. Clt. 1663. Tree 60 feet.

Cult. The *Tulip-tree* requires to be a considerable size before it will flower; it is well adapted to grow singly on lawns, &c., and is generally increased by seeds imported from its natural place of growth; these should be sown about the month of March in a light richish soil in a situation exposed to the sun, covering them about half an inch deep; they usually remain two years in the ground before they come up, though some few of them will vegetate the first year.

Order IV. ANONA'CEÆ (shrubs agreeing with Anòna in many important characters.) Rich. anal. 17. D. C. theor. 213. syst. 1. p. 463. prod. 1. p. 83. Dunal, mon. 1817. Anònæ, Juss. gen. 283.

Parts of flowers imbricate in the bud. Calyx trifid (f. 24. *a.* f. 23. *a.*) rarely quadrifid. Petals 3 (f. 23. *b.*) or 6 (f. 25. *b.*) unequal, disposed in a ternary order in a single or double series. Stamens indefinite, adpressed, usually covering the hemispherical disk (f. 24. *b.*). Anthers almost sessile, tetragonal, sometimes nectariferous, bursting outwards or inwards. Ovaries numerous (f. 24. *f.* f. 25. *c.*) crowded, aggregate (f. 25. *c.*) or joined (f. 23. *d.*) very rarely solitary from abortion, baccate (f. 23. *d.*) or capsular (f. 25. *c.*) one or many-seeded, sessile or stipitate, sometimes coadunate. Seeds fixed to the inner angle of the carpels, disposed in 1 or 2 rows, but often solitary. Albumen hard, fleshy, pierced by the substance of the seed-coat in every direction. Embryo minute, located in the umbilical region of the albumen.

Trees or shrubs mostly natives within the tropics, with alternate, simple, feather-nerved, entire, or hardly toothed, sessile, or stalked leaves; young ones pubescent, conduplicate before expansion, without stipulas. Peduncles axillary, lateral or opposite the leaves, usually furnished with bracteas, and shorter than the leaves, one or many-flowered. This order agrees with *Magnoliàceæ*, in the ternary disposition of the parts of the flower, and in the adnate anthers, but differs from it in the absence of stipulas, and in the very different form of the seeds and anthers; and from *Menispermàceæ* in the stamens being indefinite, not definite, as well as in the very different structure of its fruit. The genus *Eupamàtia* of R. Brown differs from all the other genera, particularly in the perigynous insertion of its stamina: it ought, therefore, to be excluded from this order, and placed in the subclass *Calyciflòra.* The fruit of many species of *Anòna* are highly esteemed as an article for the dessert, especially that of the *Cherimoyer*, which has the reputation of being the finest fruit in the world next to that of the *Mangosteen.* The seeds of the dry-fruited species are highly aromatic, acrid, pungent, and stimulating, as well as the roots, bark and leaves, those of one *Uvaria*, furnish the *Pìper Æthiópicum* of the shops. In Brasil the bark of *Xylòpia seríсea* is used for cordage, for which it is admirably adapted. The genus *Asimìna* is the only one which contains any hardy species. The seeds of the fleshy fruited species retain the power of vegetating a considerable time, hence they are easily introduced in a living state from any part of the world, but the seeds of those species having dry fruit are difficult to introduce, as they retain their vegetative power but for a very short time.

§ 1. *Anòneæ. Carpels unilocular, joined together into a many-celled fruit* (f. 23. *d.*)

1 Ano'na. Carpels or cells of the fruit 1-seeded. Calyx of 3-sepals (f. 23. *a.*) which are connected a little at the base. Petals 3 (f. 23. *b.*) or 6.

2 Rolli'nia. Carpels or cells of fruit 1-seeded, scaly (f. 24. *f.*). Calyx 3-parted (f. 24. *a.*). Corolla monopetalous, globose (f. 24. *d.*), 6-lobed, with 3 wings on the back (f. 24. *e.*).

§ 2. *Monodòreæ. Fruit solitary, or many-celled.*

3 Monodo'ra. Fruit solitary, globose, smooth, fleshy, with numerous seeds imbedded in the pulp. Calyx 3-sepalled. Petals 6.

4 EUPOMA'TIA. Fruit solitary, many-celled, many-seeded. Calyx in the form of a calyptra before the flower expands. Stamens numerous, perigynous, inner ones of the form of petals. Petals wanting.

§ 3. *Unòneæ. Carpels numerous, distinct* (f. 25. *c.*).

5 ASIMI'NA. Carpels 3, rarely 4-6, sessile, ovate-oblong, fleshy, many-seeded; seeds in one row. Calyx 3-parted. Petals 6.

6 PORCE'LIA. Carpels 3-6, sessile, cylindrical, somewhat fleshy, many-seeded; seeds in two rows. Sepals 3, connected together a little at the base. Petals 6.

7 UVA'RIA. Carpels 6-15, baccate, stipitate, ovate-globose, many-seeded; seeds in two rows. Sepals 3, connected at the base. Petals 6.

8 UNO'NA. Carpels 8-30, dry, stipitate, oblong-ovate or moniliform, many-seeded. Sepals 3, rarely 4, connected at the base. Petals 6.

9 XYLO'PIA. Carpels 6-20, dry, stipitate, 2-seeded. Calyx 3-5 lobed. Petals 6.

10 ORO'PHEA. Carpels 3, seldom 4, (sometimes single from abortion) at first connected, but at length diverging, 1-2-seeded, sessile, cylindrical, baccate. Seeds hanging from the top of the cell. Calyx 3-parted. Petals 6.

11 DUGUE'TIA. Carpels numerous, ovate, 3-5-angled, woody, 1-seeded, seated on thick pedicels. Receptacle large, cylindrical, globose.

12 GUATTE'RIA. Carpels 8-40, stipitate (f. 25. *c.*), ovate or globose, dry, 1-seeded. Seed almost filling the cell. Sepals 3 (f. 25. *a.*) connected at the base. Petals 6 (f. 25. *b.*).

13 BOCA'GEA. Ovaries 3, sessile, hardly joined together or completely free, 1-celled, 5-6-seeded. Carpels 1-3, distinct, rather dry, tubercled, on short stipes, 1-celled, 3-seeded from abortion. Calyx 3-parted, or almost entire and cup-shaped. Petals 6. Stamens 6, not as in the rest numerous.

14 MOLLINE'DIA. Carpels baccate, numerous, sessile, completely free, on a flat receptacle, 1-celled, 1-seeded. Calyx turbinate, nearly closed, quadrifid, torn in pieces by the fruit as they grow. Petals none.

§ 1. *Anòneæ* (*shrubs agreeing with Anona.*) *D. C. prod.* 1. p. 83. *Carpels* 1-*celled, joined into a many-celled single fruit.*

I. ANO'NA (*Anona* is the name applied to these plants by the natives of St. Domingo; but Rumphius says it comes from its Malay name *Manoa*, or from its Banda name *Menona*, but as the Latin word *annona* signifies victuals, it is probable that Linnæus had taken it from this.) Adans. fam. p. 365. Dun. monog. Anon. p. 58. D. C. syst. 1. p. 466. prod. 1. p. 83. Annòna species, Lin. gen. no. 693. Juss. gen. 283. Lam. ill. t. 494.

LIN. SYST. *Polyándria, Polygýnia.* Sepals 3, connected at the base, concave, somewhat cordate, acutish. Petals 6, thickish, inner ones smallest (f. 23. *b.*) or wanting. Anthers indefinite, almost sessile, angular, and dilated at the apex, covering the torus. Carpels indefinite, sessile, joined into one fleshy, many-celled fruit (f. 23. *d.*) with a muricated, scaly, or reticulated skin, pulpy inside; cells 1-seeded. The fruit of nearly all the species are edible, and are highly esteemed in their native countries. The genus has derived its English name, *custard-apple*, from the consistence of the fruit of several species.

§ 1. *Petals concave, thick, cordate, and ovate.*

* *Outer petals acute, inner ones blunt, a little smaller than the outer ones.*

1 A. MURICA'TA (Lin. spec. 756.) leaves ovate-lanceolate, smooth, somewhat shining; peduncles solitary, 1-flowered; outer petals cordate, acuminated, inner ones blunt; fruit muricated, with fleshy points. ♄. S. Native of the West Indies, and in many other places in South America, and now cultivated almost every where within the tropics. Jacq. obs. 1. p. 10. t. 5. Sloan. jam. hist. 2. p. 166. t. 225. bad. Flowers green on the outside, yellow inside and spotted. Bark, leaves, and flowers sweet-scented. Wood very hard. Fruit fleshy, green, eatable, of an acid taste, and is much used among the negroes in its native country; it is hardly ever eaten by the better sort of people.

Var. β, fruit almost spherical, yellow on the outside. Dun. mon. anon. p. 62. Plum. amer. t. 143. f. 1. gen. 43. t. 10. Mss. 6. t. 114.

Soursoap, or *Muricated*-fruited Custard-apple. Fl. year. Clt. 1656. Shrub 15 feet.

2 A. PURPU'REA (Moc. et Sesse, fl. mex. ined. Dun. mon. anon. p. 64. t. 2.) leaves nearly sessile, lanceolate, under surface somewhat rusty; flowers axillary, almost sessile; outer petals cordate, acute, inner ones roundish. ♄. S. Native of Mexico. Corolla large, with the outer petals yellowish-brown, and the inner ones purple. Fruit unknown.

Purple-petalled Custard-apple. Shrub 10 to 15 feet.

3 A. HUMBO'LDTII (Dun. mon. anon. p. 64. t. 3.) leaves oblong, acuminated, smooth, full of dots; peduncles short, solitary, axillary nearly sessile, 1-flowered; outer petals ovate, somewhat heart-shaped, acute, inner ones bluntish. ♄. S. Native of the province of Cumana, where it is called *Chilimòlia.* A. Humboldtiàna, Kth. nov. gen. 5. p. 56. The three outer petals are yellowish on the outside, and have each a purple spot on the inside at the base; the three inner ones are smaller, keeled and yellowish on the outside, sprinkled with red spots, and on the inside purple, with yellow spots.

Humboldt's Custard-apple. Fl.? Shrub 8 to 15 feet.

4 A. LAURIFO'LIA (Dun. mon. anon. p. 65.) leaves ovate-lanceolate, smooth; peduncles solitary, 1-flowered, pendulous; outer petals heart-shaped, acute, inner ones roundish, fruit mammæform, smooth. ♄. S. Native of the West Indies and in the vicinity of the tropic in North America. Cat. carol. 2. p. 67. t. 67. A. glàbra β, Lam. dict. 2. p. 125. Branches flexuous. Leaves like those of the *Sweet-Bay.* The outer petals are green, the inner ones are smaller and white. Fruit green, of the form of an inverted *Pear.*

Laurel-leaved Custard-apple. Fl.? Clt. 1820. Shrub 10 to 12 feet.

** *Outer petals blunt.*

5 A. OBTUSIFLO'RA (Tuss. antil. t. 28.) leaves oblong-lanceolate, waved, acuminated, full of nerves, younger ones tomentose, adult ones smooth; peduncles axillary, 1-flowered; outer petals blunt. ♄. S. Cultivated in St. Domingo, but perhaps originally from Asia. Dun. mon. anon. p. 65. Leaves distich. Fruit roundish, tubercled, eatable.

Blunt-flowered Custard-apple. Tree 20 feet.

6 A. RHOMBIPE'TALA (Ruiz. et Pav. fl. per. 5. t. 489.) leaves long, obovately-oblong, acuminated, almost sessile: peduncles aggregate, lateral, 1-flowered; flowers large, hairy; sepals ovate; petals 6, inner ones longest, rhomboidal, curved at the base, and with an obtuse mucrone at the apex; ovary surrounded by numerous scales; fruit globose, muricated, or reticulated.

Rhomboidal-petalled Custard-apple. Tree.

* * * *Petals all acute, inner ones a little smaller.* (f. 23. *a. b.*)

7 A. sylva'tica (St. Hil. fl. bras. 1. p. 32. pl. insu. bras. no. 29.) leaves large, elliptical, short-pointed, acutish at the base, puberulous above, pubescent beneath and full of very minute pellucid dots; fruit bearing peduncles extra-axillary, solitary. ♄. S. Native of Brasil in the province of Minas-Geraes. The fruit ripens in March. It is commonly called *Araticu do Mato.* The fruit is good to eat. The wood is white and compact, tender, and light, and, therefore, is very proper for works of sculpture.

Wood Custard-apple. Tree 20 feet.

8 A. palu'stris (Lin. spec. 757.) leaves ovate-oblong, leathery, quite smooth; flowers solitary on peduncles; petals all acute; fruit rather areolate. ♄. S. Native of Jamaica in low moist places, and other parts of South America, near the borders of rivers and in marshes. Dun. mon. anon. p. 65.—Pluk. alm. 32. t. 240. f. 6.—Sloane, jam. 205. hist. 2. p. 169. t. 228. f. 1. Flowers yellow; the three outer petals are veined on the outside, but spotted with red on the inside; the three inner ones are one-half, smaller than the outer ones, white on the outside, and of a dark blood-colour on the inside. Fruit large, smooth, heart-shaped, sweet-scented, of an agreeable taste, but it is said to be a strong narcotic, and is therefore not eaten on that account. It is called in Jamaica *Alligator-Apple.* The wood is so soft even when dry that it is frequently used by the negroes, instead of corks to stop up their jugs and calabashes, whence it has universally obtained the name of *Cork-wood* in Jamaica. In Brasil it is called *Araticu do brejo* and *Cortissa*, where the inhabitants also make corks of the branches. They have also tried to make a kind of wine from the fruit.

Marsh Custard-apple or Cork-wood. Clt. 1788. Tr. 10 to 20 ft.

9 A. co'nica (Ruiz, et Pav. fl. per. 5. t. 490.) leaves oblong, or obovate-oblong, acuminated, on slender petioles; peduncles lateral, 3-4-flowered; outer petals lanceolate, long, acute, inner ones small, ovate, acute; fruit long, conical, reticulated, something like a *Cucumber.*

Conical-fruited Custard-apple. Shrub.

10 A. longifo'lia (Aubl. guian. 1. p. 615. t. 248.) leaves oblong, acuminated, mucronate, smooth; flowers axillary, solitary, stalked; petals all acute; fruit ovate-globose, dotted and reticulated. ♄. S. Native of Guiana on the borders of streams, also in the island of Trinidad. Dun. mon. anon. p. 66. Flowers large, purplish, inner petals smaller than the outer ones. Fruit gelatinous, flesh-coloured, eatable. (f. 23.)

FIG. 23.

Long-leaved Custard-apple. Fl. May. Clt. 1820. Tree 20 feet.

11 A. puncta'ta (Aubl. guian. 1. p. 614. t. 247.) leaves ovate-oblong, acute, smooth; flowers axillary, solitary, nearly sessile; petals all acute; fruit somewhat globose, covered with dots. ♄. S. Native of Cayenne in woods, near the borders of streams. Dun. mon. anon. p. 67. Flowers small, yellowish. Fruit fleshy, of an obscure brown, with red pulp, eatable.

Dotted-fruited Custard-apple. Fl. April. Clt. 1822. Tree 20 ft.

12 A. Peruvia'na (H. et B. ined. Dun. mon. anon. p. 67.) leaves oblong-elliptical, acute, a little coriaceous, somewhat decurrent; peduncles axillary, bracteolate; petals all acute; fruit globose, reticulated. ♄. S. Native of Peru in marshes about Guayaquil. A. uliginòsa, H. B. et Kth. nov. gen. amer. 5. p. 56. Flowers yellow, with the three outer petals furnished with a red spot on the inside at the base of each. Fruit not eatable.

Peruvian Custard-apple. Shrub 16 feet.

13 A. austra'lis (St. Hil. fl. bras. 1. p. 33.) leaves large, ovate, very blunt at the base, but pointed at the apex, quite smooth; fruit even. ♄. S. Native of Brasil in the province of St. Catharine; on the sea-shore very common. A small tree quite smooth, except the buds. Leaves 5-6 inches long, and about 3 broad. The fruit is mature in April, it is ovate and blunt, with a soft compact pulp of the colour of an *Apricot*, but of an ungrateful taste. The tree is very like *A. palústris*, but differs greatly in the size and shape of its leaves.

Southern Custard-apple. Tree 20 feet.

14 A. cornifo'lia (St. Hil. bras. 1. p. 33.) leaves usually ovate or obovate, generally finely mucronated, smoothish above, puberulous and hoary beneath; middle nerves and parallel lateral veins rufescent beneath; peduncles 1-flowered, opposite the leaves; segments of calyx very short and acuminated. ♄. S. Native of Brasil in the provinces of St. Paul and Minas Geraes, where it is called *Araticu do Campo.* Outer petals broad-ovate, inner ones oblong-elliptical, usually acuminated. Receptacle with a circle of villi at the base. Fruit scaly, ovate smooth or villous. Leaves 2-4 inches long, and 1-2 broad. Petals very thick, pubescent, yellow, larger than the calyx. This is certainly a very variable shrub.

Dogwood-leaved Custard-apple. Shrub 15 feet.

15 A. Ambo'tay (Aubl. guian. 1. p. 616. t. 249.) leaves oblong-elliptical, under surface rusty-tomentose; flowers axillary, solitary, on very short peduncles; petals all acute. ♄. S. Native of Cayenne in woods. Dun. mon. anon. p. 67. Flowers very small, greenish. Fruit unknown. *Ambotay* is the name of the tree in Guiana.

Ambotay Custard-apple. Fl. Nov. Shrub 8 feet.

16 A. paludo'sa (Aubl. guian. 1. p. 611. t. 246.) leaves oblong, acute, upper surface somewhat tomentose, under surface silky-tomentose, rufescent, nerved; flowers on short peduncles: petals all acute; fruit ovate, tuberculated. ♄. S. Native of Guiana in marshy places. Dun. mon. anon. p. 68. Flowers greenish; petals silky on the outside. Fruit yellow, eatable.

Marsh Custard-apple. Fl. Feb. Nov. Clt. 1803. Shrub 4 to 5 feet.

§ 2. *Outer petals ovate, concave, acute, coriaceous, inner ones wanting. Fruit not sufficiently known, and therefore this section of Anòna is only added to the genus from the habit of the shrubs.*

17 A. echina'ta (Dun. mon. anon. p. 68. t. 4.) leaves ovate-lanceolate, acutish, upper surface smooth, under surface tomentose; branches rugose; peduncles solitary, 1-flowered; flowers 3-petalled; fruit egg-shaped, echinated. ♄. S. Native of Cayenne. Petals leathery.

Echinated-fruited Custard-apple. Shrub 12 feet.

18 A. seri'cea (Dun. mon. anon. p. 69. t. 5.) leaves ovate-oblong, acuminated, upper surface smooth, under surface as well as branches rusty-tomentose or silky; flowers 3-petalled, solitary, axillary, stalked, rusty on the outside. ♄. S. Native of Cayenne. Flowers nearly like those of *A. echinàta.*

Silky-leaved Custard-apple. Shrub 10 feet.

§ 3. *Outer petals linear-oblong, narrow, triquetrous at the apex, somewhat concave at the base, usually closed, concealing the genitals, inner petals very minute.*

19 A. squamo'sa (Lin. spec. 757.) leaves oblong, bluntish, smooth, full of pellucid dots, rather glaucous beneath; outer petals nearly closed; fruit egg-shaped, scaly. ♄. S. Culti-

vated throughout both Indies, but it is very likely originally from South America, where it is also cultivated. Jacq. obs. 1. p. 13. t. 6. f. 1. Dun. mon. anon. p. 69. Mill. dict. no. 3. St. Hil. pl. usu. bras. t. 30. Atamàram, Rheed. mal. 3. p. 21. t. 29. A. tuberòsa, Rumph. amb. 1. p. 138. t. 46. A. muricàta, Vand. scrip. lus. p. 118. A tree or rather a large shrub. Flowers greenish-yellow. Fruit fleshy, covered with tubercular scales, containing a sweet-tasted pulp, which is eaten by the inhabitants of tropical countries. It is commonly called *Pinha* in Brasil.

Sweetsop or *Scaly*-fruited Custard-apple. Clt. 1739. Shrub 12 to 20 feet.

20 A. FORSKA'HLII (D. C. syst. 1. p. 472.) leaves oblong, somewhat elliptical, smooth, dotted, under surface glaucous; outer petals oblong, nearly closed. ♄. S. Native of Egypt. A. glàbra, Forsk. ægyp. descr. 102. icon. t. 15. A. Asiática, var. β, Dun. mon. anon. p. 71. A. Asiática, Vahl. symb. 3. p. 73. A. squamòsa, Delile. ill. fl. ægypt. p. 17. Very like *A. squamòsa*, but differing in the leaves being more elliptical-oblong than lanceolate, less pointed, more papyraceous, and distinctly dotted, with the under surface glaucous.

Forskal's, or Egyptian Custard-apple. Shrub 12 feet.

21 A. CINE'REA (Dun. mon. anon. p. 71. t. 8.) leaves oblong-elliptical, somewhat lanceolate, full of pullucid dots, under surface pubescent; outer petals nearly closed; fruit ovate-globose, scaly. ♄. S. Cultivated in the West Indian Islands, St. Thomas, and Cumana. Fruit fleshy, eatable, in shape like a young fruit of *A. squamòsa*.

Cinereous Custard-apple. Fl.? Clt. 1823. Shrub 20 feet.

22 A. CHERIMO'LIA (Mill. dict. no. 5.) leaves ovate-lanceolate, not dotted, under surface silky-tomentose; outer petals nearly closed, rusty-tomentose on the outside; fruit somewhat globose and scaly. ♄. S. Native of Peru and New Granada. Dun. mon. anon. p. 72. A. tripétala, Ait. hort. kew. 2. p. 252. Sims, bot. mag. t. 2011. A tree, or rather a large shrub. Leaves strong scented. Peduncles opposite the leaves solitary. Outer petals clothed with rusty-down on the outside, each marked with a dark spot at the base. Fruit, when ripe, of a dark-purple colour; the flesh is soft and sweet. This fruit is esteemed by the Peruvians as one of their most delicate sorts, and is considered by them not inferior to any fruit in the world.

Cherimoyer, *Cherimoliá*, or Soft-fruited Custard-apple. Fl. July, Aug. Clt. 1739. Tree 20 feet.

23 A. RETICULATA (Lin. spec. 757.) leaves oblong-lanceolate, acute, smooth, somewhat dotted; outer petals oblong-lanceolate, acute, nearly closed; fruit ovate-globose, reticulately-areolate. ♄. S. Native of the Caribbee Islands and Brasil, also cultivated in Malabar. Dun. mon. anon. p. 72. Mill. dict. no. 1.—Brown. jam. 3. p. 256. A. squamòsa, Vand. script. lus. p. 118. The fruit of this tree is called *Fruto de Conde*, or *Condissa* in Brasil.

Var. α; areolæ scaly, roundish.—Sloane, hist. 2. p. 167. t. 226.—Catesb. carol. 2. p. 84. t. 86.—Anòna-màram, Rheed. mal. 3. p. 23. t. 30 and 31.

Var. β; areolæ angular, somewhat 5-sided, Dun. mon. l. c. A. reticulàta, Jacq. obs. 1. p. 14. t. 6. f. 2.

A tufted tree like *A. squamòsa*, but much higher with a more nauseous odour. Flowers brownish on the outside, and whitish-yellow on the inside, excavated at the base, and marked with dark purple spots. Fruit, when ripe, yellowish, sometimes reddish. This fruit is as large as a tennis-ball with yellowish soft flesh, of the consistence of a custard, whence the English name of the genus. It is eatable and much esteemed by many people. Perhaps many species are confused under the name of *A. reticulàta*.

Reticulated-fruited or Common Custard-apple. Clt. 1690. Tree 16 to 25 feet.

24 A. MUCO'SA (Jacq. obs. 1. p. 16.) leaves oblong-lanceolate, smooth; outer petals spreading at the top; fruit areolate; areolæ gibbous. ♄. S. Native of Martinico and Guiana in woods, and also cultivated in the Moluccas. Dun. mon. anon. p. 74. Aubl. guian. 1. p. 618. Manòa, Rumph. amb. 1. p. 136. t. 45. This tree is very like *A. reticulàta* in habit and character. The flesh of the fruit is very soft, but possessing an unpleasant taste, whence its name in French Guiana *Cachiman morveux* or *Cachiman sauvage*.

Mucous Custard-apple. Fl.? Clt. 1819. Tree 20 feet.

§ 4. *Outer petals ovate, or oblong-elliptical, obtuse, inner ones smaller, lanceolate, bluntish. Calyx coriaceous, trifid, large, somewhat campanulate. Fruit conical, smooth.*

25 A. GLA'BRA (Lin. spec. 758.) leaves ovate-lanceolate, smooth; peduncles opposite the leaves, 2-flowered; fruit conoid, blunt, smooth. ♄. H. Native of Carolina, and perhaps also cultivated in the West Indies.—Cat. carol. 2. p. 64. t. 64. Dun. mon. anon. 1. p. 74. A tree, or rather a large shrub, with leaves like those of *Citrus médica*. Calyx brown on the outside. Fruit of a greenish-yellow colour, containing a pulp of the consistence of a ripe pear. This is an eatable fruit, very sweet but somewhat insipid: it is the food of the *guanas* and many other wild animals.

Smooth Custard-apple. Fl. Jul. Aug. Clt. 1774. Sh. 16 ft.

26 A. GRANDIFLO'RA (Lam. dict. 2. p. 126.) leaves ovate-lanceolate, smooth, leathery, upper surface shining; peduncles axillary, solitary; fruit egg-shaped, smooth, a little dotted. ♄. S. Native of the Mauritius. Dun. mon. anon. p. 75. t. 6.

Var. β, Madagascariénsis (Pers. ench. 2. p. 95.). ♄. S. Native of Madagascar. Calyx somewhat velvety on the outside.

Great-flowered Custard-apple. Shrub 12 feet.

27 A. AMPLEXICAU'LIS (Lam. dict. 2. p. 127.) leaves heart-shaped, oblong, clasping the stem, acute, smooth; peduncles axillary, solitary, 1-flowered. ♄. S. Native of Madagascar and the Mauritius. Dun. mon. anon. p. 76. t. 7. The flowers are an inch long and more, with the petals thickened towards the base, each marked on the inside with a dark purple hollow, whitish-velvety on the outside.

Stem-clasping-leaved Custard-apple.

§ 5. *Petals all obtuse.*

28 A. DIOI'CA (St. Hil. fl. bras. 1. p. 34.) stem almost simple, downy; leaves broad, obovate, obtuse, rather cuneated at the base, downy beneath; peduncles extra-axillary, 1-flowered, petals all ovate, obtuse. ♄. S. Native of Brazil in the province of St. Paul. Leaves 3-6 inches long, and 2½-4 broad. Peduncles 1-3-together. Flowers yellowish-green; inner petals smallest.

Dioecious Custard-apple. Shrub 2 feet.

29 A. FURFURA'CEA (St. Hil. fl. bras. 1. p. 34. t. 6.) branches scurfy; leaves oblong-elliptical, rather acute at both ends, coriaceous, furfuraceous, and brownish-silvery beneath; peduncles, usually 2-flowered, opposite the leaves; petals ovate, truncate at the base, bluntish, scurfy beneath and downy above. ♄. S. Native of Brazil in the province of Minas Geraes and in the northern part of the province of St. Paul. Leaves 3-5 inches long, and 11-24 lines broad. Peduncles few together. Calyx scurfy, of a yellowish-green colour; sepals ovate, quite entire; petals reddish, inner ones hardly smaller than the outer ones. Fruit rather globose, broadly tubercled, clothed with pale brown scurf.

Scurfy Custard-apple. Shrub 2 to 3 feet.

30 A. PAVO'NII; leaves lanceolate, acuminated, very smooth; peduncles usually aggregate; petals all obtuse. ♄. S. Native of Peru about Guayaquil. An. spe. nov. Ruiz et Pav. herb. in herb. Lamb. (v. s.)

Pavon's Custard-apple. Shrub 6 to 10 feet.

§ 6. *Petals all equal, spreading.*

31 A.? AXILLIFLO'RA (D. C. prod. 1. p. 86.) leaves oval-oblong, bluntish, under surface pubescent; pedicels axillary, 1-flowered, 4-times longer than the petioles. ♄. S. Native of French Guiana. Fruit unknown.

Axillary-flowered Custard-apple. Shrub 8 to 14 feet.

32 A.? UNIFLO'RA (Dun. mon. anon. p. 76.) leaves oblong, acuminated, smooth, under surface glaucous; peduncles opposite the leaves clothed with white tomentum. ♄. S. Native of Para in Brazil. Deless. icon. sel. 1. t. 87. A beautiful species, but doubtful if belonging to this genus. Flowers white on the outside. Calyx 3-parted.

One-flowered Custard-Apple. Shrub 6 feet.

33 A. NI'TIDA (Ruiz. et Pav. fl. per. 5. t. 488.) leaves oblong-lanceolate, acuminated, wavy, smooth; peduncles axillary or lateral, twin or solitary, and furnished with a few scales. ♄. S. Native of Peru. Petals 6, equal, obovate-oblong, obtuse. Ovary globose, crowned by a round point.

Shining-leaved Custard-apple. Shrub.

† *Anònæ not sufficiently known.*

34 A. ASIA'TICA (Lin. spec. 2. p. 758.) leaves oblong, acuminated, not dotted, younger ones pubescent, adult ones smooth. ♄. S. Native of Ceylon. Mill. dict. no. 7. A. Asiática, var. *a*, Dun. mon. anon. p. 71. This tree is said by Martyn to have a smooth oblong-conical fruit, red on the outside, and filled with a whitish eatable pulp, but inferior in flavour to the fruit of *A. squamòsa*. Perhaps this is only a variety of *A. Forskö'hlii*.

Asiatic Custard-apple. Fl.? Clt.? Shrub 12 feet.

35 A. SENEGALE'NSIS (Pers. ench. 2. p. 95.) leaves elliptical, leathery, glaucous, somewhat emarginate at the apex, upper surface smooth, under surface, as well as branches and petioles covered with rusty pubescence; peduncles solitary or twin, axillary, rather pendulous; fruit small, scaly. ♄. S. Native of Guinea in bushy places. Dun. mon. p. 76. Deless. icon. sel. 1. t. 86. Petals leathery, of a greenish-yellow colour. Fruit, when ripe, of a yellowish colour, containing a soft, excellent tasted pulp. This fruit is much esteemed by the natives of Guinea.

Senegal Custard-apple. Fl. Feb. Mar. Clt. 1823. Sh. 6 ft.

36 A. EXSU'CCA (Dun. mon. anon. p. 77.) leaves ovate-oblong, leathery, smooth, upper surface shining, under surface smooth, as well as branches; peduncles nearly opposite the leaves, simple or 2-parted. ♄. S. Native of Guiana in woods. A beautiful tree, bearing small dry fruit. Flower-bud 3-lobed.

Dry-fruited Custard-apple. Tree 20 feet.

37 A. AFRICA'NA (Lin. spec. 758.) leaves lanceolate, pubescent. ♄. S. Native of South America? Mill. dict. no. 6. A very obscure species, of which there is no specimen in the Linnean herbarium.

African Custard-apple. Shrub?

38 A. ATABAPE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 58.) leaves oblong, obtuse, cuneated at the base, leathery, very smooth, shining, not dotted; peduncles solitary, 1-flowered; petals ovate, heart-shaped, acutish, inner ones scarcely smaller. ♄. S. Native of New Guiana on the banks of the river Atabapo. Perhaps this is not distinct from *A. palústris*.

Atabapo Custard-apple. Shrub 16 feet.

39 A. BONPLANDIA'NA (H. B. ex Kth. nov. spec. amer. 5. p. 58.) leaves oblong, acuminated, somewhat coriaceous, dotted, smooth, shining; peduncles solitary, 1-flowered; outer petals ovate, clothed with fine tomentum. ♄. S. Native near Guayaquil.

Bonpland's Custard-apple. Shrub 12 feet.

40 A. EXCE'LSA (H. B. et Kth. nov. spec. amer. 5. p. 59.) leaves oblong, acuminated, acute at the base, somewhat coriaceous, not dotted, smooth, conduplicate. ♄. S. Native of New Spain near Venta del Exido.

Tall Custard-apple. Tree 60 feet.

41 A. RIPARIA (H. B. et Kth. nov. spec. amer. 5. p. 59.) leaves oblong, acuminated, acute at the base, membranous, dotted, smooth, shining; fruit the form of a pear, obsoletely netted. ♄. S. Native of Peru on the banks of the river Guancabamba.

River-side Custard-apple. Shrub 25 feet.

42 A. MANIRO'TE (H. B. et Kth. nov. spec. amer. 5. p. 59.) leaves obovate-elliptical, short pointed, membranous, rounded at the base, dotted, smooth, with the nerves and veins pubescent; fruit globose, muricated. ♄. S. Native of uncultivated places near Angustura, where it is called *Manirôte*. This species approaches very near *A. muricàta*.

Manirote Custard-apple. Shrub 10 feet.

43 A. LÆ'VIS (H. B. et Kth. nov. spec. amer. 5. p. 60.) leaves lanceolate-oblong, acuminated, acute at the base, membranous, smooth; under surface rather hairy, dotted; peduncles aggregate, 1-flowered; outer petals lanceolate, acutish, fruit smooth. ♄. S. Native of South America near Angustura and in Cumana, where it is cultivated. Perhaps this is either *A. laurifòlia* or *A. glàbra*. Fruit eatable. Flowers greenish-yellow.

Smooth-fruited Custard-apple. Shrub 16 feet.

44 A. QUINDIUE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 60.) leaves lanceolate-oblong, acuminated at both ends, somewhat coriaceous, upper surface smooth, shining, under surface rather pilose, obsoletely dotted; peduncles 1-5-flowered; outer petals ovate-lanceolate; fruit dotted. ♄. S. Native of New Granada in the Andes about Quindu at the height of 3600 feet.

Quindiu Custard-apple. Shrub 6 feet.

45 A. MICRA'NTHA (Bert. ex Spreng. syst. 2. p. 640.) leaves oblong-lanceolate, tapering to both ends, quite smooth; branches dotted; peduncles lateral, solitary, 1-flowered; calyx exceeding the corolla in length. ♄. S. Native of Hispaniola.

Small-flowered Custard-apple. Shrub 6 feet.

46 A. MICROCA'RPA (Ruiz. et Pav. fl. per. 5. t. 487.) leaves oblong; fruit ovate, small, scaly. ♄. S. Native of Peru.

Small-fruited Custard-apple. Shrub.

Cult. As the species are all natives of tropical countries, they all require the heat of a stove. They thrive best in rich loamy soil mixed with a little peat. Ripened cuttings will root if planted in a pot of sand and placed under a hand-glass, in a moist heat; but the leaves of the cuttings should not be shortened. They are easily raised from fresh seeds, procured from their native countries, sown in pots, and plunged into a good hot-bed, in the same sort of soil recommended for the plants.

II. ROLLI'NIA (to the honour of Charles Rollin, an elegant writer, and professor of rhetoric and eloquence in the college of Plessis, born at Paris, 1661, died 1741). St. Hil. fl. bras. 1. p. 28.

LIN. SYST. *Polyándria, Polygýnia.* Calyx 3-parted (f. 24. *a.*) caducous. Corolla monopetalous, globose, with a narrow, 6-lobed hole at the top (f. 24. *d.*), inserted below the gynophore, and drawn out on the back beneath the outer lobes into 3 very blunt samara-like wings (f. 24. *e.*) which are concave on the inside, deciduous. Ovaries numerous, rather oblong, compressed, connected together, 1-celled, 1-seeded. Fruit scaly, single (f. 24. *f.*) from the coalition of the carpels. Seeds unknown. Peduncles extra-axillary, solitary, rarely twin.

1 R. LONGIFO'LIA (St. Hil. fl. bras. 1. p. 29. t. 5.) leaves oblong, acute, but obtuse at the base, smooth above, but clothed with rufous down beneath as well as the young branches. ♄. S. Na-

tive of Brazil. Corolla clothed with rusty down, 3 lines long. Leaves 4-6 inches long. (f. 24.)

Long-leaved Rollinia. Shrub 20 feet.

FIG. 24.

2 R. FAGIFO'LIA (St. Hil. fl. bras. 1. p. 29.) leaves ovate, pointed, puberulous on both surfaces, and with the nerves clothed with rusty villi. ♄. S. Native of Brazil in the province of Rio-Janeiro on the banks of the river Parabyba. Leaves $1\frac{1}{2}$ to 4 inches long and 1-2 broad. Calyx rusty villous. Corolla pubescent, glaucous. Fruit unknown.

Beach-leaved Rollinia. Fl. Nov. Shrub 6 feet.

3 R. PARVIFLO'RA (St. Hil. fl. bras. 1. p. 30.) leaves oblong, acuminated, and acute at the base, smooth above, puberulous beneath. ♄. S. Native of Brazil in woods on the mountains called Tejuca near Rio-Janeiro. A small tree with rufous-pubescent branches. Leaves $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long. Peduncles solitary. Calyx rusty-villous. Corolla villous of a greenish-brown colour.

Small-flowered Rollinia. Fl. Nov. Tree 20 feet.

4 R. DOLABRIPE'TALA (St. Hil. ex fl. bras. 1. p. 29.) leaves oblong-lanceolate, under surface as well as petioles hairy; corolla tomentose, compressed on one side to the form of a hatchet. ♄. S. Native of Brazil on Mount Cercovado near Rio Janeiro. Annòna dolabripétala, Raddi. in act. soc. ital. 16. p. 15.

Hatchet-petalled Rollinia. Shrub 6 feet.

5 R. BIFLO'RA; leaves oblong, membranous, acuminated, smooth; peduncles 2, 1-flowered, rising below the leaves. ♄. S. Native of Peru. Annòna biflòra, Ruiz, et Pav. MSS. in herb. Lamb. (v. s.)

Two-flowered Rollinia. Shrub 6 feet?

6 R. PTEROCA'RPA; leaves large, oblong, acuminated; wings of petals erect, incurved, hatchet-shaped; fruct large, of numerous carpels. ♄. S. Native of Peru. Annòna pterocárpa, Ruiz, et Pav. fl. per. 5. t. 483.

Wing-fruited Rollinia. Tree.

7 R. MICRA'NTHA; leaves oblong, acuminated; peduncles very thick; fruct of numerous, distinct, close carpels. ♄. S. Native of Peru. Annòna parviflora, Ruiz, et Pav. fl. per. 5. t. 484.

Small-flowered Rollinia. Tree.

Cult. The species of *Rollìnia* will thrive best in good loam mixed with a little peat and sand. Ripened cuttings, with the leaves not shortened, will strike root if planted in a pot of sand, and plunged in a moist heat, with a hand-glass placed over them †.

§ 2. *Monodoreæ, (shrubs agreeing with Monodòra.) Fruit solitary, 1 or many-celled, contained within a single rind.*

III. MONODO'RA (from μονος, *monos*, one, δορα, *dora*, a skin; in allusion to the fruit being 1-celled). Dun. mon. anon. p. 79. D. C. syst. 1. p. 477. prod. 1. p. 87.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 3-sepalled. Petals 6, in 2 series, outer ones lanceolate, inner ones ovate, joined at the base. Anthers indefinite, nearly sessile. Ovary 1, ovate, crowned by the sessile stigma. Berry smooth, somewhat globose, 1-celled, many-seeded. Seeds imbedded in the pulp.

1 M. MYRI'STICA (Dun. mon. anon. p. 80.) fruit very large, somewhat globose; leaves alternate; peduncles lateral, 1-flowered, bearing a bractea at the base or on the middle, or above the middle. ♄. S. Cultivated in Jamaica, but perhaps originally brought from Equinoctial Africa. R. Br. congo, p. 56. Annòna myrística, Gært. fruct. 2. p. 194. t. 125. f. 1. Lunan, hort. jam. 10. American nutmeg, Long, jam. hist. 3. p. 735. Flowers large like those of *Unòna undulàta*, the three inner petals are ciliated on the inside at their margins, the outer ones are much waved, a little longer than the inner ones. Fruit yellow, when ripe.

Jamaica or Calabash *Nutmeg*. Fl.? Clt.? Tree 20 feet.

Cult. The *Jamaica Nutmeg* will thrive well in a mixture of loam and sand, and ripened cuttings will strike root if planted in a pot of sand, plunged in a moist heat, with a bell-glass placed over them †.

IV. EUPOMA'TIA (from ευ, *eu*, well, πωμα, *poma*, a lid; calyptra covering the flower before expansion, in the manner of an extinguisher). R. Br. bot. ter. aust. p. 65.

LIN. SYST. *Icosándria, Polygýnia.* Calyx truncate. Calyptra, covering the flower-bud before expansion. Petals none. Stamens numerous, perigynous, inner ones of the form of petals. Berry many-celled, many-seeded, crowned by numerous connected stigmas. Anthers lateral. A smooth shrub with oblong-coriaceous leaves and 1-flowered axillary peduncles. This genus differs materially from all the rest of the genera of *Anonàceæ* in the perigynous insertion of its stamens; it should therefore be excluded from this order as well as from the sub-class *Thalamiflòræ*.

1 E. LAURI'NA (R. Br. l. c.). ♄. G. Native of New Holland. Flowers greenish-yellow.

Laurel-like Eupomatia. Fl.? Clt. 1824. Shrub 6 feet.

Cult. This fine shrub will thrive well in a mixture of loam and peat, and ripened cuttings will strike root, if planted in a pot of sand, and placed under a hand-glass.

§ 3. *Unòneæ (plants agreeing with Unona.) Carpels many, distinct.*

V. ASIMI'NA (a name of Canadian origin, meaning unknown). Adans. fam. 2. p. 365. Dun. mon. anon. p. 81. D. C. syst. 1. p. 478. prod. 1. p. 87.

LIN. SYST. *Polyándria, Tri-Polygýnia.* Calyx 3-parted. Petals 6, spreading, ovate-oblong, inner ones smallest. Anthers indefinite, nearly sessile. Ovaries many, but for the most part only three, ovate or oblong; carpels the same number as the ovaries, baccate, sessile; seeds many, disposed in a single or double row. Shrubs with oblong, cuneated usually deciduous leaves. Flowers sometimes rising before the leaves, usually solitary and axillary.

1 A. PARVIFLO'RA (Dun. mon. anon. p. 82. t. 9.) leaves cuneate-obovate, mucronate, under surface as well as branches covered with brown pubescence; flowers sessile; outer petals scarcely twice as long as the calyx. ♄. H. Native of Virginia, Georgia and Carolina in shady woods near rivers and lakes. Porcèlia parviflòra, Pers. ench. 2. p. 95. Orchidocárpum parviflòrum, Mich. fl. bor. amer. 2. p. 329. A small shrub, bearing fruit when 2 feet high. Outside of calyx and corolla clothed with brownish tomentum; inside of petals dark purple. Berries 2 or 3, aggregate, sessile, fleshy, the size of a *plum*.

Small-flowered Asimina. Fl. April, May. Clt. 1806. Shrub 2 to 4 feet.

2 A. TRI'LOBA (Dun. mon. anon. p. 83.) leaves oblong-cuneated, acuminated, and are, as well as branches smoothish; flowers on short peduncles; outer petals roundish-ovate, 4-times longer than the calyx. ♄. S. Native of Pennsylvania, Florida, Virginia, and Carolina, on the overflowed banks of rivers. Annòna tríloba, Lin. spec. 758. Mill. dict. no. 8, icon. 1. t. 35. Duham. arb. ed. 2. vol. 2. p. 83. t. 25. Mich. f. arb. amer. 3. p. 161. t. 9. Schkuhr. handb. 2. p. 95. t. 149. Porcèlia tríloba, Pers. ench. 2. p. 95. Orchidocárpum arietìnum, Mich. fl. bor. amer. 1. p. 329.—Catesb. carol. 2. t. 85. A small tree, or rather a large shrub. Flowers campanulate, with the 3 outer petals pale

purplish, and the 3 inner ones smaller, purplish on the outside as well as the inside at the base and apex, with the middle yellow. Berries large, yellow, ovate, oblong, eatable. All parts of the tree have a rank, if not a fetid smell; and therefore the fruit is relished by few, except negroes. Seeds 8-10, disposed in a double row.

Three-lobed-calyxed Asimina. Fl. May, June. Clt. 1736. Shrub 10 feet.

3 A. pygmæ'a (Dun. mon. anon. p. 84. t. 10.) stem suffruticose; leaves oblong-linear, cuneate, blunt, and are as well as branches smooth; flowers on short peduncles; outer petals obovate-oblong, much longer than the calyx. ♄. H. Native of Georgia, Florida, and Carolina in sandy fields. Annòna pygmæ'a, Bartr. trav. ed. germ. p. 21. t. 1. Orchidocárpum pygmæ'um, Mich. fl. bor. amer. 1. p. 330. Porcèlia pygmæ'a, Pers. ench. 2. p. 95. A little shrub hardly a foot high, with twiggy branches, and long cuneated narrow leaves. Outer petals much larger than the inner ones, all white.

Pygmy Asimina. Fl. April, June. Clt. 1812. Shrub 1 ft.

4 A. grandiflo'ra (Dun. mon. p. 84. t. 11.) leaves cuneate-obovate, obtuse, under surface as well as the branches clothed with brown pubescence; flowers sessile; outer petals obovate, much larger than the calyx. ♄. H. Native of Georgia and Florida in sandy woods in shady places. Annòna grandiflòra, Bartr. trav. ed. germ. 20, t. 2. Annòna obovàta, Willd. spec. 2. p. 1269. Orchidocárpum grandiflòrum, Mich. fl. bor. amer. 1. p. 330. Porcèlia grandiflòra, Pers. ench. 2. p. 95. A small, smooth-branched shrub. Flowers white, and very large for the size of the plant, with the outer petals larger than the inner ones. Berries smooth, oblong-obovate.

Great-flowered Asimina. Fl. May. Clt 1820. Shrub 2 feet.

5 A. Campechia'na (H. B. et Kth. nov. spec. amer. 5. p. 61.) leaves elliptical-oblong, acuminated, acute at the base, membranous, dotted; upper surface hairy, under surface as well as the branchlets tomentose; peduncles short, solitary; petals oblong, nearly equal. ♄. S. Native of Mexico about Campeachy.

Campeachy Asimina. Shrub?

Cult. These shrubs will do well in England in the open air, in a warm situation, in a mixture of sand and peat. *A. triloba* will grow in common garden soil. They should be increased by layers put down in the autumn, or by seeds procured from their native country. Seedlings should be trained up in pots, and sheltered in winter until they have acquired a sufficient size. The *A. Campechiàna*, which is a native of a warm climate, will require the heat of a stove. It will do well in the same sort of soil recommended for the hardy species, and ripened cuttings will root in sand under a hand-glass, plunged in a moderate heat.

VI. PORCE'LIA (in honour of Antonio Porcel, a Spanish promoter of botany, who has been highly praised by the authors of the Flora Peruviana). Ruiz. et Pav. syst. fl. per. 1. p. 144. prod. 84. t. 16. D. C. syst. 1. p. 480. prod. 1. p. 88. Dun. mon. anon. p. 85.

Lin. syst. *Polyándria, Tri-Hexagýnia.* Sepals 3, somewhat connected at the base. Petals 6, inner ones a little larger than the outer ones. Anthers indefinite, almost sessile. Carpels 3-6, sessile, coriaceous, hardly fleshy, cylindrical, somewhat torulose, many-seeded; seeds disposed in a twin rank.

1 P. nitidifo'lia (Ruiz. et Pav. syst. 1. p. 144.) leaves ovate-lanceolate, smooth, shining; peduncles axillary, aggregate, 1 or few-flowered; petals ovate. ♄. S. Native of Peru in mountain groves. A beautiful tree with whitish-yellow flowers. Berries marked on the outside by a longitudinal suture, they are pendent as well as the flowers, and are eaten by the inhabitants of Peru. A yellow colouring is obtained from the leaves.

Shining-leaved Porcelia. Tree 60 feet.

2 cinnamo'mea (Ruiz. et Pav. MSS. in herb. Lamb.) leaves distich, long lanceolate, acuminated; branches and petioles clothed with brown villi; peduncles long, rising above the leaves; sepals 3, small; petals 6, inner ones large, concave.

Cinnamon Porcelia. Tree 30 feet.

Cult. A light loamy soil will probably suit these trees well, and ripened cuttings, not deprived of their leaves, will no doubt root in a pot of sand with a hand-glass placed over them, in heat †.

VII. UVA'RIA (from *uva*, a cluster of grapes; resemblance in the clusters of the fruit). Lin. gen. 692. Gært. fruct. 2. p. 155 and 157. Dun. mon. anon. p. 86. D. C. syst. 1. p. 481. prod. 1. p. 88.

Lin. syst. *Polyándria, Polygýnia.* Sepals 3, ovate-cordate, connected at the base. Petals 6, oval, the 3 outer ones smallest? Anthers indefinite, covering the hemispherical receptacle. Ovaries numerous, usually villous. Carpels numerous, baccate, fleshy, ovate-globose, many-celled, many-seeded. Seeds disposed in a double row. Trees or shrubs, with erect or sarmentose branches. Peduncles axillary, opposite the leaves, or lateral 1 or 4-flowered, solitary, twin, or tern, jointed in the middle, usually furnished with bracteas.

1 U. zeyla'nica (Lin. spec. 2. p. 756. exclusive of the synonyms of Rheed. and Rumph.) sarmentose; leaves ovate-lanceolate, smooth; berries many, ovate-cylindrical, tapering into the stipe; inner processes of the integument of the seeds in parallel plates. ♄. ◡. S. Native of Ceylon. Lam. ill. t. 495. f. 2. Dun. mon. anon. p. 88. Gært. fruct. 2. p. 155. t. 114. f. 2. Flowers scarlet, starry. Fruit eatable, of a vinous taste, resembling that of an *Apricot*.

Ceylon Uvaria. Fl.? Clt. 1794. Shrub rambling.

2 U. Gærtne'ri (D. C. syst. 1. p. 482.) berries ovate, tapering into the stipe; inner processes of the integument of the seed awl-shaped, or almost needle-shaped. ♄. S. Perhaps a native of Ceylon. U. trifoliàta, Gært. fruct. 2. p. 167. t. 114. f. 2. Lam. ill. t. 495. f. 3. Dun. mon. anon. p. 89. The berries of this shrub are larger than in *U. Zeylánica*.

Gærtner's Uvaria. Clt. 1794. Shrub rambling.

3 U. cha'mæ (Beauv. fl. d. ow. et ben. 2. p. 43. t. 83. f. 2.) leaves alternate, entire, small, ovate, shining, acute; flowers racemose; sepals coriaceous; petals ligulate. ♄. S. Native of Guinea on the borders of the river St. Jago. Flowers of a rusty-red colour.

Dwarf Uvaria. Shrub 4 feet.

4 U. lu'tea (Roxb. corom. 1. p. 32. t. 36.) tree; leaves oblong, acuminated, smooth, shining; peduncles solitary, 1-6-flowered; berries oblong, 6-seeded. ♄. S. Native of the coast of Coromandel on the mountains. Dun. mon. anon. p. 89. U. coriàcea, Vahl. symb. 3. p. 72.? Flowers small, greenish-yellow. Berries stellately spreading, smooth, yellow, about the size of a partridge's egg, with 4 or 6 seeds imbedded in the pulp. The Telingas call it *Muay*.

Yellow-fruited Uvaria. Fl.? Clt. 1822. Tree 30 feet.

5 U. tomento'sa (Roxb. corom. 1. p. 31. t. 35.) tree; leaves oblong, acute, tomentose; peduncles 1-flowered, mostly solitary; berries globose, 4-seeded. ♄. S. Native of the Circar mountains in Hindoostan. Dun. mon. anon. p. 90. A tall tree with numerous horizontal branches forming a large tuft. Branches and leaves bifarious. Flowers brownish-green. Carpels 10-15, baccate, when ripe, of a violet-purple colour, and about the size of a nutmeg. Seeds about the size of a French-bean imbedded in the pulp.

Tomentose-leaved Uvaria. Fl.? Clt. 1822. Tree 60 feet.

6 U. du'lcis (Dun. mon. anon. p. 90. t. 13.) leaves oblong-elliptical, tapering at the base, cordate, under surface velvety as well as branches; peduncles in pairs, axillary or opposite the

leaves; furnished with bracteas or jointed in the middle. ♄. S. Native of Java. Branches, petioles, and peduncles clothed with rusty villi. Petals rusty on the outside.

Sweet Uvaria. Tree 30 feet.

7 U. JAVA'NA (Dun. mon. anon. p. 91. t. 14.) branches rambling; leaves oval, acute, cordate at the base, clothed with stellate tomentum, as well as the branchlets; peduncles solitary, axillary, or opposite the leaves, 2-5-flowered; pedicels somewhat umbellate, furnished with bracteas in the middle. ♄. S. Native of Java. Inner petals reddish, a little smaller than the outer ones, all greyish on the outside. Pistils villous.

Java Uvaria. Fl.? Shrub rambling.

8 U. VELUTI'NA (Roxb.? Dun. mon. anon. p. 91.) branches rambling; leaves elliptical-oblong, acuminated, cordate at the base, and are as well as the branches, clothed with velvety villi; peduncles lateral, few-flowered; pedicels corymbose, 1-flowered; carpels cylindrical, villous. ♄. S. Native of East Indies. Petals velvety on the outside. Ovaries crowded, somewhat velvety.

Velvety Uvaria. Shrub rambling.

9 U. RUGO'SA (Blum. bijdr. ned. ind. ex Schlecht. Linnæa, p. 494.) leaves oblong, acuminated, smooth; peduncles few-flowered, axillary; fruit globose, wrinkled, 4-seeded. ♄. S. Native of Java.

Wrinkled-fruited Uvaria. Tree 60 feet.

10 U. Burahol (Blum. l. c.) leaves oblong, shining; peduncles crowded, 1-flowered; flowers monoecious. ♄. S. Native of Java. *Burahol* is the name of the tree in Java.

Burahol Uvaria. Tree 60 feet.

11 U. LONGIFO'LIA (Blum. l. c.) leaves oblong, retuse, acutish, clothed with rusty down beneath as well as the branches; racemes elongated, 2-5-flowered; pedicels furnished with bracteas in the middle. ♄. S. Native of Java.

Long-leaved Uvaria. Shrub.

12 U. OBTU'SA (Blum. l. c.) leaves ovate or oval, obtuse, clothed with rusty villi beneath on the ribs as well as the branches; peduncles elongated, lateral, usually 1-flowered; fruit oval, tomentose. ♄. S. Native of Java.

Obtuse-leaved Uvaria. Shrub.

13 U. SPHÆROCA'RPA (Blum. l. c.) branches rambling; leaves ovate-oblong, acute, but obtuse at the base, clothed with rusty villi beneath as well as the branches; fruit on long stipes, globose, smooth, 4-seeded. ♄. S. Native of Java. Flowers purplish.

Round-fruited Uvaria. Shrub rambling.

14 U. PURPU'REA (Blum. fl. jav. fasc. 20. t. 1.) leaves elliptical-oblong, acute, acuminated, somewhat cordate at the base, clothed on both surfaces as well as the branchlets with stellate tomentum; peduncles opposite the leaves, usually 1-flowered, 2-bracteate; bracteas large, roundish, netted with nerves. ♄. S. Native of Java. Flowers beautiful purple.

Purple-flowered Uvaria. Shrub 6 feet.

15 U. AU'RITA (Blum. fl. jav. fasc. 20. t. 2.) leaves oblong, cordate at the base, bluntish; peduncles terminal, panicled or axillary; bracteas small. ♄. S. Native of Java. Flowers purple, about half the size of those of *U. purpùrea*.

Eared Uvaria. Shrub 6 feet.

16 U. FŒ'TIDA (Ruiz, et Pav. MSS. in herb. Lamb.) leaves oblong, villous, acuminated; flowers large, purple; petals long, lanceolate, full of nerves; sepals small. ♄. S. Native of Peru. Perhaps a species of *Unòna*.

Fetid Uvaria. Shrub 6 to 10 feet?

17 U.? SPECTA'BILIS (D. C. syst. 1. p. 484.) leaves oblong, acuminated, smoothish, younger ones rusty and velvety as well as the branches; peduncles 1-flowered, lateral or opposite the leaves; petals obovate, inner ones bifid at the top. ♄. S. Native of Guiana. Flowers large; petals white with silky down. Ovaries crowded, hardly distinct. Fruit unknown. Perhaps a proper genus.

Shewy Uvaria. Shrub.

18 U. OPTHA'LMICA (Roxb. MSS.) leaves oblong-lanceolate, smooth, villous on the nerves beneath, as well as the young branchlets; peduncles lateral, 3-flowered; petals and sepals very villous, inner petals much longer than the outer ones. ♄. S. Native of the Moluccas. Leaves a span long. Fruit not seen.

Eye-plant Uvaria. Fl. Jan. Tree.

19 U. NITIDA (Roxb. MSS.) leaves oval, acuminated, shining, paler beneath; peduncles aggregate, axillary or lateral branched. ♄. S. Native of the East Indies. Fruit not seen.

Shining-leaved Uvaria. Fl.? Tree.

Cult. All the species of this genus require the heat of a stove; they thrive best in sandy loam mixed with a little peat. Ripened cuttings will root in sand under a hand-glass, plunged in heat. Seeds procured from the places of their natural growth, should be sown in spring in pots filled with the same sort of soil recommended for the plants, and placed in a hot-bed.

VIII. UNO'NA (from *uno* to unite, in allusion to the stamens being united with the germens). Lin. suppl. p. 270. Juss. gen. 280. Ann. mus. 16. p. 340. Dun. mon. anon. p. 94. D. C. syst. 1. p. 485. prod. 1. p. 89.

LIN. SYST. *Polyándria, Polygýnia.* Sepals 3, very rarely 4, ovate, acutish, connected at the base. Petals 6, disposed in a ternary order, with the 3 inner ones smallest. Stamens indefinite. Carpels numerous, dry? indehiscent, stipitate, ovate or oblong, 1 or many-celled, smooth, or torulose, many-seeded. Seeds disposed in a single row. Trees or shrubs sometimes with climbing branches. Leaves quite entire. Peduncles usually axillary, 1 or many-flowered, generally furnished with bracteas. The bark and fruit are intensely aromatic, somewhat acrid, and stimulating.

SECT. I. UNONA'RIA (altered from *Unona*). D. C. syst. 1. p. 486. prod. 1. p. 89. Flowers spreading. Carpels smoothish or very torulose.

§ 1. *Marentèria. Petals ovate or oblong, nearly equal.*

1 U. NA'RUM (Dun. mon. anon. p. 99.) stems sarmentose; leaves lanceolate, acuminated; peduncles lateral, solitary, 1-flowered; petals roundish-ovate, nearly equal, inflexed; carpels on long stipes, smoothish. ♄. ◡. S. Native in Malabar and perhaps in the Moluccas. Narum-panel, Rheed. mal. 2. p. 11. t. 9. A shrub climbing up trees. Flowers at first brownish-green, but at length becoming reddish. Anthers yellowish, with an unctuous humour exuding from them. Carpels, when ripe, yellowish-red, nearly an inch long and half an inch broad. There is a sweet-scented greenish oil obtained from the roots by distillation in Malabar, which is used in various diseases, as well as the root itself.

Narum Unona. Clt.? Shrub rambling.

2 U. MUSA'RIA (Dun. mon. anon. p. 100.) stems sarmentose, leaves elliptical-lanceolate, acuminated, cordate at the base; peduncles 1-flowered, solitary, axillary; petals roundish-ovate, nearly equal, reflexed; carpels stipitate, somewhat torulose. ♄. ◡. S. Native of Amboyna, Baleya, and Solor, in steep places at the tops of the highest mountains. Fùnis musàrius, &c. Rumph. amb. 5. p. 78. t. 42. A sarmentose shrub, with brown or blood-coloured flowers. Stamens clammy. Carpels about 10, each marked with a longitudinal prominent line. The roots and bark are used against the colic in the Moluccas. The bark is also used for making musical instruments, as well as that of *A. Nàrum*, whence the specific name.

Musical-rope Unona. Shrub rambling.

3 A. PENDULIFLO'RA (Moc. et Sess. in Dun. mon. anon. p. 100. t. 28.) stem arborescent; leaves nearly sessile, somewhat cordate, oblong-lanceolate, waved; peduncles long, 1-flowered, pendulous; petals inflexed; carpels long, somewhat stipitate. ♄. S. Native of Mexico. A small tree. Petals of a yellowish-green colour, inside of the inner ones reddish-yellow, Carpels about 7, leguminiform.

Pendulous-flowered Unona. Tree 20 feet.

4 U. MARENTE'RIA (D. C. syst. 1. p. 487.) branches climbing; leaves oval, obtuse, quite smooth; peduncles erect, 1-flowered, subterminal; petals oval, velvety on the outside, somewhat unequal; carpels substipitate, ventricose. ♄. ◡. S. Native of Madagascar. Marentèria, Norh. ex Pet. Th. gen. nov. madag. p. 18. no. 60. A small climbing shrub. Carpels 4-5, on short pedicels. Petals brown-velvety on the outside.

D. Armentèries's Unona. Shrub cl.

5 U. CRASSIPE'TALA (Dun. mon. anon. p. 101. t. 24.) leaves oblong-elliptical, acuminated, smooth; peduncles axillary, 1-flowered, pilose, erect, longer than the petioles; petals oblong, thick. ♄. S. Native of Cayenne. U. pachypétala, Spreng. Petals brown, spreading, about an inch long.

Thick-petalled Unona. Shrub.

6 U. FUSCA'TA (D. C. syst. 1. p. 488.) leaves oblong, acuminated, smooth; peduncles erect, axillary, 1-flowered, pilose, somewhat shorter than the petioles; petals oval-oblong, acutish. ♄. S. Native of Guiana. Petals rufescent. Ovaries densely approximate, length of stamens. Fruit unknown.

Brown-flowered Unona. Fl.? Clt. 1820. Shrub.

7 U. OBTUSIFLO'RA (D. C. syst. 1. p. 488.) leaves smooth, oval-oblong, acuminated at both ends; peduncles axillary, 1-flowered, hardly pubescent, much longer than the petioles; petals oblong-obovate, very blunt. ♄. S. Native of Guiana. Petals of a brownish-grey colour on the outside, velvety.

Blunt-flowered Unona. Shrub.

8 U. ACUMINA'TA (D. C. syst. 1. p. 488.) leaves smooth, oblong, taper-pointed at both ends; peduncles axillary, 1-flowered, hardly pubescent, much longer than the petioles; petals oblong, acute. ♄. S. Native of Guiana. Flowers like those of *A. obtusiflòra*, but rather smaller, and of the same colour. Stamens and ovaries like those of *A. fuscàta*.

Acuminated-leaved Unona. Fl.? Clt. 1820. Shrub 6 feet.

9 U. MACROCA'RPA (Vahl. ined. D. C. syst. 1. p. 489.) leaves oval, blunt at both ends, coriaceous, quite smooth; peduncles lateral, short, branched, 2-3-flowered; petals oval-oblong, acutish. ♄. S. Native of Guinea. Petals equal, somewhat coriaceous, velvety with pubescence.

Long-fruited Unona. Shrub.

10 U. OVA'TA (Vahl. ined. D. C. syst. 1. p. 489.) leaves ovate, acute, upper surface smooth, with the middle nerve on the under surface, clothed with rusty tomentum, as well as the branchlets; peduncles 2-flowered, very short, opposite the leaves; petals oval-oblong, acutish. ♄. S. Native of Guinea. Petals nearly equal, coriaceous, purple.

Var. β, *Afzeliàna* (D. C. syst. 1. p. 489.) very like the species, but the adult leaves are smooth, (except the longitudinal nerve) rusty. ♄. S. Native of Sierra Leone.

Ovate-leaved Unona. Shrub.

11 U. GRANDIFLO'RA (Leschen. in litt. D. C. prod. 1. p. 90.) leaves oval-oblong, almost sessile, cordate at the base, upper surface smooth, under surface velvety; peduncles 1-flowered, opposite the leaves; petals oval-oblong. ♄. S. Native of Bengal. Carpels 30-35, terete, velvety.

Great-flowered Unona. Shrub.

§ 2. *Œta'nia. Outer petals ovate-oblong, acutish; inner ones none or very minute.*

12 U. TRIPE'TALA (D. C. syst. 1. p. 490.) leaves lanceolate, upper surface wrinkled, under surface tomentose; carpels stipitate, ovate, somewhat triquetrous, granulated, 3-seeded. ♄. S. Native of Amboyna in plains and on hills. Unona tripetaloìdea, Dun. mon. anon. p. 104.—Rumph. amb. 2. p. 197. t. 66. f. 1. Uvària tripétala, Lam. dict. 1. p. 597. A tree with the habit of *Michèlia Champàca*. Flowers on peduncles solitary, sweet-scented, greenish. Fruit about the size of a *plum*. This tree is called in the Malay language *Cananga-Œtan*, whence the name of the section.

Three-petalled Unona. Tree 40 feet.

§ 3. *Canánga.* (*Cananga-ætan* is the Malay name of the preceding species.) *Petals linear-lanceolate, long, narrow.*

13 U. VIOLA'CEA (Dun. mon. anon. p. 105. t. 25.) leaves elliptical, bluntish, smooth? peduncles opposite the leaves, drooping, 1-flowered, surrounded by one bractea; petals lanceolate-oblong. ♄. S. Native of Mexico. Un. spec. nov. Moc. and Sess. pl. mex. icon. pict. ined. Petals purplish-brown, inner ones white on the inside at the base.

Violaceous-flowered Unona. Shrub.

14 U. UNCINA'TA (Lam. dict. 2. p. 127.) leaves oblong-lanceolate, acuminated, smooth, shining; peduncles opposite the leaves, hooked beneath the middle; carpels ovate-roundish. ♄. G. Native of the Mauritius and the East India islands. Dun. mon. anon. p. 105. t. 12. Artabòtrys adoratíssima, R. Br. in bot. reg. t. 423.—Rheed. mal. 7. p. 86. t. 46? Anona hexapétala, Lin. fil. supl. 270? Petals reddish-brown. Carpels fleshy, roundish, 1 or 2-seeded, about the size of a walnut. Seeds large, oblong. The flowers of this species are extremely fragrant.

β; peduncles simple, arched. Perhaps this plant is referable to t. 16. in Braam. icon. chin. 1821?

Hooked-peduncled Unona. Fl. June, July. Clt. 1758. Shrub 6 feet.

15 U. HAMA'TA (Dun. mon. anon. p. 106. t. 27. Blum. bijdr. fl. ned. ined. ex Schlecht. Linnæa. 1. p. 495.) branches rather climbing; peduncles solitary, hooked, few-flowered; leaves elliptical-oblong, acute at both ends, coriaceous, smooth; petals lanceolate, constricted at the base, clothed with rusty-tomentum; carpels ovate, tapering to both ends, 2-seeded. ♄. ◡. S. Native of Java and China. A large shrub, with an erect stem and climbing branches.

Hooked-peduncled Unona. Shrub cl.

16 U. CANA'NGA (Spreng. syst. app. p. 215.) leaves unequally ovate-oblong, acuminated, smooth; peduncles axillary, 1-many-flowered, leafy; pedicels rather corymbose; petals lanceolate; carpels ovate, stipitate. ♄. S. Native of Java. A. odoràta, Blum. Flowers monoecious. *Cananga* is a name used in Amboyna for *U. tripétala*.

Cananga Unona. Shrub.

17 U. ESCULE'NTA (Dun. mon. anon. p. 107.) stems climbing; leaves ovate-lanceolate, smooth; branches tendrilled at the apex; peduncles 1-flowered; petals lanceolate. ♄. ◡. S. Native of India about Madras. Uvària esculénta, Roxb. Rottl. and Willd. in nov. act. nat. cur. berol. 4. p. 201. A climbing shrub. Fruit eatable.

Esculent Unona. Fl. Nov. Clt. 1818. Shrub cl.

18 U. LESSERTIA'NA (Dun. mon. anon. p. 107. t. 26.) leaves oblong-elliptical, upper surface smooth, shining; peduncles lateral, 1-flowered, bracteate; petals oblong, somewhat curled. ♄. S. Perhaps a native of China or India. Uvària uncàta, Vahl. in herb. Deless. Petals of a pale-brown colour, velvety.

De Lessert's Unona. Shrub cl.?

19 U. VIRGA'TA (Blum. bijdr. fl. ned. ind. ex Schlecht.

Linnæa. 1. p. 495.) leaves ovate-lanceolate, acuminated, smooth; peduncles axillary, 1-flowered; petals lanceolate, inner ones glandular at the base. ♄. S. Native of Java.

Twiggy Unona. Shrub.

20 U. ODORATA (Dun. mon. anon. p. 108.) leaves ovate-oblong, acuminated, smooth, rounded and oblique at the base; peduncles lateral, leafy, 1-flowered; petals linear-lanceolate; carpels stipitate, egg-shaped, umbilicated at the top. ♄. S. Native of Java and China. Uvària undulàta, Lam. dict. 1. p. 595. ill. t. 495. f. 1.—Rumph. amb. 2. p. 195. t. 65. A tall tree, with cinereous smooth branches. Flowers sweet-scented; petals yellowish. Carpels pulpy, about 9. Seeds imbedded in the sweet pulp.

Sweet-scented-flowered Unona. Fl.? Clt. 1804. Tree 40 feet.

21 U. LONGIFO'LIA (Lam. dict. 1. p. 597.) leaves oblong-linear, acuminated, smooth, waved on the margin; peduncles lateral, crowded, somewhat umbellate; petals linear-lanceolate, acute; carpels stipitate, egg-shaped. ♄. S. Native of Bengal, Java, Coromandel, and Pondicherry, where it is cultivated in private avenues.—Sonn. voy. ined. 4. t. 131. A tall erect tree, with yellow flowers.

Long-leaved Unona. Fl.? Clt. 1820. Tree 60 feet.

22 U. NITIDI'SSIMA (Dun. mon. anon. p. 109. t. 23.) leaves oblong-elliptical, acuminated at both ends, smooth, shining; peduncles axillary, very short, 1-flowered; petals linear, bluntish. ♄. S. Native of New Caledonia. Uvària lùcida, Vent. in herb. Deless. U. fúlgens. Labill. nov. caled. t. 56. Fruit unknown.

Very-nitid-leaved Unona. Fl.? Tree.

23 U. LIGULA'RIS (Dun. mon. p. 110.) leaves ovate-lanceolate, acute; peduncles lateral, many-flowered; petals long, linear; carpels stipitate, somewhat globose. ♄. S. Native of Amboyna. Uvària ligulàris, Lam. dict. 1. p. 597.—Rumph. amb. 2. p. 298. t. 66. f. 2. A tree very like *U. odoràta*. Seeds sweet-scented.

Ligular-petalled Unona. Tree 20 feet.

24 U. ELLI'PTICA (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 495.) leaves almost sessile, somewhat cordate at the base, oval-oblong, acute, smooth; peduncles axillary, 1-flowered, furnished with bracteas; petals linear-lanceolate, bluntish. ♄. S. Native of Java.

Elliptical-leaved Unona. Shrub.

25 U. LITTORA'LIS (Blum. l. c.) branches a little climbing; leaves ovate, bluntly acuminated, rounded at the base, coriaceous, smooth; peduncles 1-flowered, longer than the petiole; fruit oval, contracted in the middle, on short stipes, somewhat baccate. ♄. ∪. S. Native of Java.

Sea-side Unona. Shrub cl.

26 U. MACROPHY'LLA (Blum. l. c.) leaves oblong, acuminated, coriaceous, rounded at the base, smooth; peduncles 1-flowered, almost axillary; fruit oval, 2-seeded, somewhat baccate, on short stipes. ♄. S. Native of Java.

Large-leaved Unona. Shrub.

27 U. SUBCORDA'TA (Blum. bijdr. fl. ind. ex Schlecht. Linnæa. 1. p. 495.) leaves almost sessile, somewhat cordate-oblong, acuminated, pubescent beneath at the ribs; peduncles solitary, axillary 1-flowered; carpels globose, stipitate, 2-seeded. ♄. S. Native of Java.

Subcordate-leaved Unona. Shrub.

SECT. II. DE'SMOS (δεσμος, *desmos*, a chain; fruit articulated like the links of a chain.) D. C. syst. 1. p. 493. prod. 1. p. 91. Petals lanceolate, oblong, or linear, sometimes nearly closed. Carpels baccate, torulose, somewhat articulated, many-celled? more or less moniliform.

28 U. DISCRE'TA (Lin. fil. suppl. 270.) leaves oblong-lanceolate, narrow, under surface silky; carpels moniliform, on long stipes. ♄. S. Native of Surinam. Dun. mon. anon. p. 110. Uvària monilífera, Gært. fruct. 2. p. 156. t. 114. Lam. ill. t. 495. f. 4. A tree with twiggy flexile pubescent branches. Leaves narrow, like those of a species of *Sàlix*. Flowers like those of *Anòna*. Berries purple, aromatic, and of a very good taste, 1-3-celled; cells 1-seeded.

Separated Unona. Tree 20 feet.

29 U. UNDULA'TA (Dun. mon. anon. p. 111.) leaves ovate-oblong, smooth; peduncles axillary, 1-flowered; petals oblong-linear, long, outer ones waved; carpels oblong, somewhat moniliform. ♄. S. Native of the kingdom of Waree in Guinea. Xylòpia undulàta, Beauv. fl. owar. et ben. 1. p. 27. t. 16. Flowers scarlet, with the outer petals very long, and elegantly waved. Fruit like that of *Unòna Æthiópica*, aromatic, and is used as a condiment at Waree in Guinea. Joints of fruit 1-2-seeded.

Waved-petalled Unona. Shrub 8 feet.

30 U. DI'SCOLOR (Vahl. symb. 2. p. 63. t. 36.) leaves ovate-oblong, acuminated, smooth, under surface glaucous; peduncles lateral, 1-flowered, elongated; carpels moniliform, on short stipes. ♄. S. Native of the East Indies. Dun. mon. anon. p. 111. A tree with white flowers, with a volatile oil exuding from them.

Two-coloured-leaved Unona. Fl.? June. Tree 20 feet.

31 U. CHINE'NSIS (D. C. syst. 1. p. 495.) leaves ovate-lanceolate, smooth; flowers solitary, spreading, on long peduncles; carpels torulose, moniliform, nearly sessile. ♄. G. Native of China near Canton. A shrub about 5 feet high. Flowers white? Désmos Chinénsis, Lour.

Chinese Unona. Shrub 5 feet.

32 U. COCHINCHINE'NSIS (D. C. syst. 1. p. 495.) leaves lanceolate, tomentose; flowers solitary, closed, on long peduncles; carpels nearly sessile, torulosely-moniliform. ♄. G. Native of Cochin-China in bushy places. Désmos Cochinchinénsis, Lour. coch. ed. Willd. 1. p. 431. Unòna Désmos, Dun. mon. p. 112. A shrub about 5 feet high, with an erect stem and weak reclinate branches. Flowers terminal, yellowish-green, pendulous. Berries reddish-green.

Cochin-China Unona. Shrub 5 feet.

33 U. AROMA'TICA (Dun. mon. anon. p. 112.) leaves oblong, acuminated, smooth; peduncles axillary, 1-2-flowered; carpels oblong, terete, torulose, nearly sessile. ♄. S. Native of Guiana in woods, particularly at a place called Timoutou. Wària Zeylánica, Aubl. guian. 2. p. 605. t. 243. Uvària aromática. Lam. dict. 1. p. 596. Unòna cóncolor, Willd. spec. 2. p. 1271. Every part of the tree is aromatic. The three outer petals are cinereous on the outside, inside smooth, violaceous; inner ones smaller, violaceous. The fruit is acrid and aromatic, and is used as a condiment instead of pepper by the negroes in Guiana.

Aromatic-fruited Unona. Fl.? Clt. 1820. Tree 20 feet.

34 U. ÆTHIO'PICA (Dun. mon. anon. p. 113.) leaves ovate-lanceolate, acute, smooth, under surface glaucous; carpels terete, torulose, nearly sessile. ♄. S. Native of Ethiopia and Sierra Leone. Pìper Æthiòpicum, Math. comm. 1. p. 434. icon. Lob. icon. 2. p. 205. Tabern. 917. icon. The seeds have an aromatic, pungent taste; they were formerly sold in the shops, but now more rarely under the names of *Ethiopian pepper*, *Guinea pepper*, *Negro pepper*, *or Pìper Æthiópicum*, *&c.*

Ethiopian or Negro Pepper. Fl.? Clt. 1822. Shrub.

35 U. OXYPE'TALA (D. C. syst. 1. p. 496.) leaves oval-oblong, acuminated, upper surface smooth, under surface somewhat glaucous; peduncles axillary, very short, 1-flowered; petals linear, pointed. ♄. S. Native of Sierra Leone. Perhaps this species should have been placed in the following section. Petals pubescent on the outside.

Sharp-petalled Unona. Shrub 6 feet.

36 U. BIGLANDULO'SA (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 495.) leaves somewhat cordate, ovate-lanceolate, acuminated, with 2 glands on the margin, glaucous beneath; peduncles lateral, 1-flowered, shorter than the leaves; fruit moniliform, stipitate. ♄. S. Native of Java.

Two-glanded-leaved Unona. Shrub 6 feet.

37 U. SUAVE'OLENS (Blum. l. c.) leaves oblong-lanceolate, smooth, tapering to both ends; peduncles hooked, many-flowered; petals linear, silky, closed at the base; berries oval-oblong, 2-seeded, tapering to both ends, on short stipes. ♄. S. Native of Java.

Sweet-scented Unona. Shrub.

38 U. LEPTOPE'TALA (D. C. syst. 1. p. 496.) leaves oval-oblong, acuminated, and are, as well as branches, smooth; peduncles axillary, branched; petals oblong-linear, pointed. ♄. S. Native of the island of Timor. Deless. icon. sel. 1. t. 88. Petals six times longer than the calyx, rather velvety with fine down.

Slender-petalled Unona. Shrub 10 feet.

SECT. III. MELODO'RUM (*mel*, honey, *odor*, smell, as the leaves of *M. dumetòrum*.) D. C. syst. 1. p. 497. prod. 1. p. 91. Flowers pyramidal, narrow, elongated; petals linear-triangular, acute, generally closed, covering the base of the genitals; carpels baccate, smoothish, or exceedingly torulose.

39 U. LATIFO'LIA (Dun. mon. anon. p. 115.) leaves broad-oblong-lanceolate, under surface woolly; flowers racemose; berries numerous, 2-3-seeded. ♄. S. Native of the Moluccas. A tree with broad leaves, like those of *Michèlia Champàca*. Berries, when ripe, about the size of a nut; at first whitish, then reddish, and at last becoming black. Seeds aromatic.

Broad-leaved Unona. Tree 30 feet.

40 U. SYLVA'TICA (Dun. mon. anon. p. 115.) leaves ovate-oblong, under surface tomentose; flowers solitary, on short pedicels; berries ovate-oblong, fleshy, rough. ♄. S. Native of Cochin-China in woods. Melodòrum arbòreum, Lour. coch. ed. Willd. 1. p. 430. A large tree, used in Cochin-China for building houses. Flowers of a greenish-white colour, fleshy. Berries not eatable.

Wood Unona. Tree 40 feet.

41 U. KENTII (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 495.) leaves oblong-lanceolate, coriaceous, shining; peduncles axillary, 1-flowered, nodding; berries globose, 2-seeded, on short stipes. ♄. S. Native of Java.

Kent's Unona. Shrub 6 feet.

42 U. HU'MILIS (Blum. l. c.) leaves broad-lanceolate, with the veins underneath rufous-silky; peduncles opposite the leaves, 3-flowered; berries 1-2-seeded, globose, stipitate. ♄. S. Native of Java.

Humble Unona. Shrub 6 feet.

43 U. DUMETO'RUM (Dun. mon. anon. p. 116.) leaves lanceolate, smooth; flowers solitary; berries nearly sessile, ovate-oblong, rough. ♄. S. Native of Cochin-China in bushy places. Melodòrum fruticòsum, Lour. cochin. ed. Willd. 1. p. 430. A shrub, with sweet-scented leaves. Flowers yellowish-brown. Pulp of fruit, sparing, but of a grateful taste.

Bush Unona. Shrub 4 feet.

44 U. LU'CIDA (D. C. syst. 1. p. 498.) leaves oval-oblong, acuminated at both ends, quite smooth, upper surface shining; peduncles simple; berries oblong, blunt, somewhat flattened and torulose, on short stipes. ♄. S. Native of Peru. Deless. icon. sel. 1. t. 89.

Shining-leaved Unona. Shrub 6 feet?

45 U. ACUTIFLO'RA (Dun. mon. anon. p. 116. t. 22.) leaves ovate-lanceolate, acute, rather stiff, smooth; peduncles very short, 1-flowered; berries ovate-oblong, on short stipes. ♄. S. Native of the West Indies or Sierra Leone? Petals silky on the outside.

Acute-flowered Unona. Tree 40 feet.

46 U. XYLOPIOI'DES (Dun. mon. anon. p. 117. t. 21.) leaves oblong, acuminated, under surface silky, shining, margins revolute at the base; peduncles 2-4, axillary, short. ♄. S. Native of New Granada. H. B. Kth. nov. spec. amer. 5. p. 62. Uvària febrifûga, H. et B. ined. A tree with pendulous branches. Outer petals brown-silky on the outside, and white on the inside, inner petals white, but red at the base. Berries dry, oblong, somewhat curved, many-celled.

Xylopia-like Unona. Tree 70 feet.

47 U.? POLYCA'RPA (D. C. syst. 1. p. 499.) leaves oblong, acuminated, rather glaucous, smoothish, with the middle nerve at the base rather tomentose; berries on long stipes. ♄. S. Native of Sierra Leone. Perhaps a species of *Guattèria*, or a proper genus.

Many-fruited Unona. Shrub.

48 U.? SELA'NICA (D. C. prod. 1. p. 92.) leaves ovate, acute, upper surface smooth, under surface wrinkled; racemes few-flowered, terminal, pendulous. ♄. S. Native of the Moluccas Dámmara Selánica, Rumph. amb. 2. p. 168. t. 56.? Lam. dict. 2. p. 259. U. orientàlis, Spreng. syst. 2. p. 636.

Selanic Unona. Tree 60 feet.

Cult. The whole of this genus require the heat of a stove. A light loamy soil suits them best; and ripened cuttings will strike root if planted in a pot of sand, and placed under a hand-glass, in heat. If seeds of any of them can be procured from their native places, they should be sown immediately, as they do not retain their vegetative power long, in a mixture of loam, sand, and peat, and placed in a hot-bed.

IX. XYLO'PIA (from ξυλον, *xylon*, wood, and πικρος, *picros*, bitter; the wood of some species are extremely bitter, abridged from Xylopìcron.) Lin. gen. 1027. Lam. ill. t. 495. Aubl. guian. 1. p. 602. Juss. gen. 283. Dun. mon. anon. p. 48. and 118. D. C. syst. 1. p. 499. prod. 1. p. 92.

LIN. SYST. *Polyándria*, *Di-Polygýnia*. Calyx 3-5-lobed; segments ovate, coriaceous, acutish. Petals 6, 3-outer ones largest. Stamens indefinite, inserted in the receptacle, which is usually globose. Carpels 2-15, on short stipes, flattened, 1-celled, 1-2-seeded, sometimes dehiscent, sometimes somewhat baccate. Seeds obovate, shining, sometimes furnished with aril. Trees or shrubs, with oblong or lanceolate leaves and axillary, bracteate, 1 or many-flowered peduncles. Wood bitter, whence the name of P. Browne *Xylopìcron*. Fruit and bark aromatic.

1 X. MURICA'TA (Lin. spec. 1367.) leaves lanceolate, acuminated, strigose on the under surface, bearded at the apex; peduncles many-flowered; carpels muricated. ♄. S. Native of Jamaica on the mountains. Dun. mon. anon. p. 120. X. frutéscens, Gært. fruct. 1. p. 339. t. 69. f. 7.—Brown. jam. 250. t. 5. f. 2. A shrub, with smooth twiggy twisted branches.

Muricated-carpelled Bitter-wood. Fl.? Clt. 1773. Shrub 6 ft.

2 X. FRUTE'SCENS (Aubl. guian. 1. p. 602. t. 292. exclusive of the synonyms.) leaves oblong-lanceolate, acuminated, under surface silky; peduncles 1-3, very short; carpels smooth. ♄. S. Native of Brasil and Guiana. Lam. ill. t. 495. Dun. mon. anon. p. 120. X. setòsa, Poir. dict. 8. p. 812. A shrub with distich branches. The bark affords a cordage. The leaves and wood are very aromatic, and the seeds have an acrid aromatic taste, and are used by the negroes in Guiana instead of pepper. Flowers 4-lines long, silky. Seeds full of a very fragrant acrid oil.

Shrubby Bitter-wood. Fl.? Clt. 1823. Shrub 6 feet?

3 X. SALICIFÒLIA (H. B. et Kth. spe. amer. nov. 5. p. 63.) leaves oblong, acuminated, bluntish, under surface silky; pe-

duncles short, 1-flowered? bracteolate. ♄. S. Native of South America near Espinal. Dun. mon. anon. p. 120. t. 17. A tree with blackish branches. Capsules 5-7, indehiscent.

Willow-leaved Bitter-wood. Tree 40 feet.

4 X. LIGUSTRIFO'LIA (Dun. mon. anon. p. 121. t. 18.) leaves oblong, acutish, smooth; peduncles short, few-flowered, bracteolate. ♄. S. Native of South America near Buga in Popayan. H. B. et Kth. nov. amer. spec. 5. p. 63. Petals and sepals on the outside clothed with brown-velvety hairs. Capsules indehiscent.

Privet-leaved Bitter-wood. Tree.

5 X. GLA'BRA (Lin. spec. 1367.) leaves oblong-ovate, smooth; peduncles 1-flowered, solitary or in pairs; carpels smooth. ♄. S. Native of the islands of Barbadoes and Jamaica. Dun. mon. anon. p. 121. t. 19.—Pluk. alm. 395. t. 238. f. 4. Flower-buds oblong, pubescent on the outside.

The wood, bark, and berries of this tree have an agreeable bitter taste, not unlike that of an orange-seed. The wild pigeons feed much upon the latter, and owe that delicate bitterish flavour so peculiar to them in the season wholly to this part of their food. Fresh gathered from the tree, they are agreeable to the palate and grateful to the stomach. The bitter quality of this tree is communicated with great facility. A handful of the shavings immersed in water and instantly taken out again will render it of a very bitter taste. Sugar sent over in hogsheads made of this wood was so bitter that no person would purchase it. Bedsteads and presses made of it are proof against cock-roaches and other insects. Carpenters who work the wood perceive a bitter taste in their mouths and throats. A decoction of it is said to be of service in colics, and to create appetite. This species is called *bitter-wood* in Jamaica. Perhaps all the species of this genus partake more or less of this bitter quality.

Smooth-leaved Bitter-wood. Fl.? Clt. 1820. Tree 40 feet.

6 X. MARTINICE'NSIS (Spreng. syst. 2. p. 636.) leaves obovate-oblong, tapering into the petiole, smooth on both surfaces, but of a different colour beneath; branchlets angular; peduncles racemose. ♄. S. Native of Martinico.

Martinico Bitter-wood. Tree 20 feet.

7 X. NI'TIDA (Dun. mon. anon. p. 122. t. 20.) leaves oblong-lanceolate, smooth, upper surface shining; peduncles branched, many-flowered; calyx nearly entire. ♄. S. Native of Cayenne in the mountains of Oyac.

Shining-leaved Bitter-wood. Fl.? Tree 28 feet.

8 X. ACUMINA'TA (Dun. mon. anon. p. 122. t. 16.) leaves oblong-elliptical, long-pointed, quite smooth, capsules 1-valved, 2-seeded. ♄. S. Native of Cayenne and Portorico. Seeds black, fetid, convex on the outside, and flat on the inside.

Acuminated-leaved Bitter-wood. Tree

9 X. PRINOI'DES (Dun. mon. anon. p. 122. t. 15.) leaves oblong-lanceolate, acuminated, bluntish at the apex, smooth, membranous; flowers solitary; capsules 2-valved. ♄. S. Native of Cayenne. Seeds as in the preceding species.

Prinos-like Bitter-wood. Tree.

10 X. GRANDIFLO'RA (St. Hil. fl. bras. 1. p. 40.) stem arboreous; branches clothed with rufous down; leaves elliptical-lanceolate, acute, obtuse at the base, puberulous above and downy beneath; peduncles very short, 2-flowered; outer petals linear, acutish, inner ones triquetrous, 2-eared at the base. ♄. S. Native of Brasil in the province of Rio Janeiro. Leaves distich, smooth, 4 inches long and $1\frac{1}{2}$ broad. Petals clothed with rufous silky pubescence.

Great-flowered Bitter-wood. Fl. Feb. Tree 20 feet.

11 X. SERI'CEA (St. Hil. fl. bras. 1. p. 41.) stem arboreous; branches clothed with rufous down; leaves lanceolate-oblong, with long points, smooth above, but silky beneath; peduncles quite short, 3-flowered; petals erect, outer ones oblong-linear, blunt, inner ones triquetrous; berries few, almost dry, smooth, 1-valved. ♄. S. Native of Brazil in the province of Rio Janeiro in woods. St. Hil. pl. usu. bra. t. 33. Embìra Pindaìba, Pis. bras. 71. with a figure. Ibìra Margr. bras. 99. with a figure. Unòna carmatìva, Amd. diss. 48?

The tree is called *Pao d. Embira and Pindaiba* in Brasil. The bark is thready and tough, and is useful for making cables and cordage. The bark of a number of the other species is employed for the same purposes. The fruit is truly aromatic, with the smell of a pear, and its taste is very agreeable. It might be employed as an excellent condiment.

Silky Bitter-wood. Tree 20 feet.

12 X. BRASILIE'NSIS (Spreng. neue. entd. 3. p. 50.) leaves lanceolate, acuminated, coriaceous, under surface pilose; branchlets as well as erect 1-flowered peduncles, hairy; petals thickish, velvety, spreading. ♄. S. Native of Brasil. This plant is said to be very like *X. frutéscens*.

Brasil Bitter-wood. Tree 20 feet.

Cult. All the species of this genus require a stove heat. They grow best in sandy loam, or a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, plunged in a moderate heat. The seeds when procured from their native countries should be sown immediately in pots in the same sort of soil recommended for the plants, and placed in a hot-bed. These seeds soon lose their vegetative property.

X. ORO'PHEA (from *ορορη*, *orophe*, the top of any thing; cohesion of inner petals at apex.) Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 496.

LIN. SYST. *Hexo-Enneándria, Tri-Tetragýnia.* Calyx 3-parted. Petals 6, in two series, outer ones smallest, inner ones stalked, cohering at the apex in the form of a calyptra. Stamens 6-9, alternate ones usually sterile. Anthers 2-celled, adnate outwardly. Ovaries 3, rarely 4, villous, at first approximating, but at length diverging, 2-seeded. Stigma blunt. Carpels 3-4, rarely solitary from abortion, sessile, baccate, cylindrical, 1-2-seeded. Seeds adhering to the top of the cell.—Shrubs.

1 O. HEXA'NDRA (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 496.) leaves ovate-lanceolate; peduncles axillary and terminal, solitary, somewhat racemose; pedicels 1-flowered; flowers hexandrous. ♄. S. Native of Java.

Hexandrous Orophea. Shrub.

2 O. ENNEA'NDRA (Blum. l. c.) leaves oblong; peduncles supra-axillary, or opposite the leaves, usually 3-flowered; pedicels in fascicles; flowers enneandrous. ♄. S. Native of Java.

Enneandrous Orophea. Shrub.

Cult. The species of *Oròphea* will thrive well in a mixture of loam, peat and sand, and ripened cuttings will root if planted in a pot of sand, with a hand-glass placed over them, in heat. None of the species have yet been introduced into the gardens of Europe.†

XI. DUQUE'TIA (to the honour of James Joseph Duquet, once professor of theology and philosophy in the college of Troyes. He wrote commentaries on most of the books of the New Testament, and a collection of letters on piety: born at Montbrison 1649, died 1733.) St. Hil. fl. bras. 1. p. 35. t. 7.

LIN. SYST. *Polyándria, Polygýnia.* Receptacle large, transversely 2-parted, cylindrically globose, honey-combed. Carpels numerous, free, 3-5-angled, acuminated with the permanent style, tapering at the base into a thick hardly narrower pedicel, woody, very thick, 1-seeded, indehiscent, deciduous. Seed erect, fixed to the bottom of the carpel.—A small tree, with alternate simple quite entire leaves, furnished with stipulas, short petioles, which are jointed at the base, and extra-axillary, solitary, 1-flowered, peduncles. This genus differs materially from the rest in the presence of stipulas.

1 D. LANCEOLA'TA (St. Hil. fl. bras. 1. p. 35. t. 7.) ♄. S. Native of Brasil. Branches furfuraceous. Leaves about 3-inches long, lanceolate, rather acuminated, shining above, but scurfy beneath. Carpels about 6-lines long, of a chesnut colour, shining, having the appearance of a *plum*.

Lanceolate-leaved Duquetia. Tree 16 feet.

Cult. Duquetia will thrive very well in a mixture of sandy loam and peat, and ripened cuttings will strike root in a pot of sand under a hand-glass, in a moist heat.

XII. GUATTE'RIA (John Bapt. Guatteri, an Italian botanist, once a professor at Parma, mentioned by the authors of Flora Peruviana.) Ruiz, et Pav. prod. p. 85. t. 17. Dun. mon. anon. p. 50 and 123. D. C. syst. 1. p. 502. prod. p. 93.

LIN. SYST. *Polyándria, Polygýnia*. Sepals 3, joined at the base (f. 25. *a*.) ovate, somewhat cordate, acute. Petals 6, (f. 25. *b*.) ovate or obovate. Anthers indefinite, nearly sessile. Carpels indefinite (f. 25. *c*.) somewhat baccate, dry, coriaceous, ovate, or somewhat globose, stipitate, 1-seeded. Trees or shrubs with entire leaves, and axillary solitary, binate or tern, one or rarely few-flowered peduncles.

1 G. ABEREMO'A (Dun. mon. anon. p. 126.) leaves ovate-oblong, acute, tomentose; peduncles axillary, 1-flowered; berries somewhat stipitate, ovate, mucronate. ♄. S. Native of Guiana in woods. Aberemòa Guianénsis, Aubl. gui. 1. p. 610. t. 245. A small tree with large leaves. Berries about 20, yellowish.

Var. β, microcárpa (D. C. l. c.) differing from the species in the fruit being a little smaller.

Aberemoa is the name of the species in Guiana. Tree 60 ft.

2 G. BRE'VIPES (D. C. syst. 1. p. 505.) leaves oval, somewhat pointed, smooth, shining; peduncles axillary, 1-flowered; berries ovate, on short stipes. ♄. S. Native of Guiana, and in the island of Trinidad, in woods. Leaves 8 or 12 inches long, and 3 or 4 broad. Flowers unknown.

Short-footed-fruited Guatteria. Tree 60 feet.

FIG. 25.

3 G. OUREGO'U (Dun. mon. anon. p. 126.) leaves oblong-elliptic, acuminated, smooth; peduncles 1-3, axillary; berries ovate, acute, on long stipes. ♄. S. Native of Guiana and the island of Trinidad in woods. Canánga Ouregòu. Aubl. guian. 1. p. 608. t. 244. Flowers brown, sweet-scented. Berries ovate, dry, coriaceous, yellowish. The leaves when bruised are very aromatic, as well as all parts of the tree. We have seen a tree in the island of Trinidad resembling this, whose flowers were lateral on the branches. *Ouregou* is the Caribbean name of this tree.

Ouregou Guatteria. Fl. Sep. Tree 70 feet.

4 G. PODOCA'RPA (D. C. syst. 1. p. 503.) leaves oval-oblong, abruptly-acuminated, smooth; peduncles axillary, solitary; berries ovate, submucronate; stipe much longer than the berry. ♄. S. Native of Cayenne. Very like *G. Ouregòu*, but the berries are one-half larger; stipes 3 or 4 times longer than the berry. Flowers brown, sweet-scented.

Var. α, oligocárpa (D. C. prod. 1. p. 93.) berries 14-20, a little ribbed.

Var. β, polycárpa (D. C. prod. 1. p. 93.) berries about 40, not ribbed.

Stalked-fruited Guatteria. Tree 50 feet.

5 G. CERASOI'DES (Dun. mon. anon. p. 127.) leaves lanceolate, acute, pubescent beneath; peduncles axillary, solitary; petals nearly equal; berries ovate-globose; stipe longer than the berry. ♄. S. Native of Coromandel in the mountains. Uvària cerasoìdes, Roxb. cor. 1. p. 30. t. 33. A large tree with bifarious branches. Fruit dark-red about the size and shape of a small cherry, 1-seeded, they are eaten by the natives, but are rather too astringent. Stigma broad purple. The wood is employed for many purposes by the natives of Coromandel.

Cherry-like Guatteria. Clt. 1820. Tree 60 feet.

6 G. SUBERO'SA (Dun. mon. anon. p. 128.) leaves oblong, acute, smooth; peduncles nearly opposite the leaves, 1-flowered; outer petals smallest; berries globose; stipe one-half longer than the berry. ♄. S. Native of Coromandel. Uvària suberòsa, Roxb. corom. 1. p. 31. t. 34. This plant is more common than *G. cerasoìdes* and smaller. The three outer petals are greenish, the three inner ones whitish. Fruit dark-red, or almost black, about the size of a small-pea. The wood is durable, of a chocolate colour, and very elastic.

Var. β; leaves narrowest at the base, and a little curled on the margins.

Var. γ; leaves exactly oblong, pale glaucous; branchlets villous.

Corky-barked Guatteria. Fl. ? Clt. 1820. Tree 30 feet.

7 G. MACROPHY'LLA (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 496.) leaves oval, tapering to both ends, coriaceous, pubescent beneath; peduncles very short, lateral, few-flowered; outer petals shortest; berries egg-shaped, on short stipes. ♄. S. Native of Java.

Long-leaved Guatteria. Tree.

8 G. BRA'GMA (Blum. l. c.) leaves oblong, acuminated, shining above, with the veins underneath as well as the branchlets, tomentose; peduncles lateral, very short, 1-flowered; outer petals shortest. ♄. S. Native of Java and the neighbouring islands, where it is called *Bragma*.

Bragma Guatteria. Tree.

9 G. PISOCA'RPA (Blum. l. c.) leaves unequal at the base, ovate-oblong, bluntish, with the veins beneath as well as the branches tomentose; peduncles 1-flowered, usually opposite the leaves, fruit 1-4, globose, almost sessile, smooth. ♄. S. Native of Java.

Pea-fruited Guatteria. Tree 20 feet.

10 G. RU'FA (Dun. mon. anon. p. 129. t. 29.) leaves oval, acuminated, cordate at the base, under surface clothed with brown tomentum as well as the branchlets; peduncles very short, lateral, or opposite the leaves; petals equal; berries stipitate, velvety. ♄. S. Native of the East Indies in the islands of Timor and Java, Lindl. bot. reg. 836. Uvària tomentòsa, Vahl. ined. but not of Roxb. A small shrub with brownish-purple, sweet-scented flowers. Berry 1-seeded, nearly the length of the stipe.

Rufous Guatteria. April, Aug. Clt. 1820. Shrub 4 feet.

11 G. CORDA'TA (Dun. mon. anon. p. 129. t. 30.) leaves cordate at the base, oblong, acutish, under surface rather tomentose as well as the branchlets; recemes opposite the leaves, short, few-flowered. ♄. S. Native of Java. Corolla and calyx clothed with rusty tomentum.

Cordate-leaved Guatteria. Tree.

12 G. ERIÓPODA (D. C. syst. 1. p. 505.) leaves oblong-lanceolate, tapering a little to the base, acuminated, younger ones villous; peduncles lateral, solitary, 1-flowered, tomentosely hispid. ♄. S. Native of Peru about Cuchero. Deless. icon. sel. 1. t. 90. Flowers velvety and peduncles hairy.

Hairy-peduncled Guatteria. Tree 20 feet.

13 G. HIRSU'TA (Ruiz. et Pav. fl. per. syst. 1. p. 146.) leaves lanceolate, acuminated; peduncles axillary, smooth; flowers hairy. ♄. S. Native of Peru in groves towards a village called Chinchao. Dun. mon. anon. p. 131. Ruiz, et Pav. fl. per 5. t. 478.

Hairy-flowered Guatteria. Fl. Jun. Sept. Shrub 12 feet.

14 G. PE'NDULA (Ruiz. et Pav. fl. per. syst. 1. p. 146.) leaves lanceolate; peduncles axillary, very long, pendulous. ♄. S. Native of Peru in the mountains about Chinchao and Pozuzo. Dun. mon. anon. p. 131. Ruiz, et Pav. fl. per 5. t. 476.

Pendulous-flowered Guatteria. Fl. May, July. Shrub 10 ft.

15 G. OVA'LIS (Ruiz. et Pav. fl. per. syst. 1. p. 146. fl. per 5. t. 476.) leaves oblong, oval; peduncles axillary. ♄. S. Native of Peru in the mountains about Pozuzo. Dun. mon. anon. p. 131.

Oval-leaved Guatteria. Fl. June, Aug. Tree 23 feet.

16 G. GLAU'CA (Ruiz. et Pav. fl. per. syst. 1. p. 145.) leaves oblong or ovate, pointed; peduncles axillary. ♄. S. Native of Peru in groves towards the villages of Cuchero and Chinchao. Dun. mon. anon. p. 131. Ruiz. et Pav. fl. per 5. t. 475.

Glaucous Guatteria. Fl. Jun. Aug. Tree 20 feet.

17 G. VIRGA'TA (Dun. mon. anon. p. 131. t. 31.) leaves ovate, acuminated, quite smooth, nearly sessile; peduncles axillary, 1-flowered; berries somewhat stipitate, coriaceous, bluntish, egg-shaped. ♄. S. Native of Jamaica in wooded mountains. Uvària lanceolàta, Swz. prod. 87. U. virgàta, Swz. fl. ind. occid. 2. p. 999. A middle-sized tree with smooth bark and flexile branches. The three outer petals are largest, white.

Twiggy Guatteria. Fl.? Clt. 1793. Tree 16 feet.

18 G. LAURIFO'LIA (Dun. mon. anon. p. 132. t. 32.) leaves oblong, acuminated at both ends, smooth, on short petioles; peduncles axillary, rather crowded; berries somewhat stipitate, egg-shaped, mucronate. ♄. S. Native of Jamaica on wooded mountains, and also in St. Domingo and Portorico. Uvària excélsa, Vest. ex Vahl. in herb. Juss. A middle-sized tree with rigid branches and flexile twiggy branchlets. Petals white, nearly equal, not expanding.

Laurel-leaved Guatteria. Fl.? Clt. 1820. Tree 30 feet.

19 G. GOMEZIA'NA (St. Hil. fl. bras. 1. p. 36.) stem arboreous, with hairy branches; leaves oblong or elliptical-oblong, acuminated at the apex and acute at the base, adult ones smooth above but pilose beneath; outer petals ovate, acutish or bluntish, inner ones longer and narrower, ovate or oblong-lanceolate. ♄. S. Native of Brazil in the province of Minas Geraes. Leaves 2-4 inches long, 9-12 lines broad. Peduncles axillary, solitary, 1-flowered. Petals spreading, pubescent, green, or yellowish-red.

Gomez de Abreu's Guatteria. Fl. Jan. Tree 30 feet.

20 G. LU'TEA (St. Hil. fl. bras. 1. p. 37.) stem shrubby; branches hardly puberulous at the top; leaves oblong, downy; peduncles axillary, solitary, 1-flowered; outer petals ovate, acute, inner ones a little longer and narrower, oblong, acute. ♄. S. Native of Brazil in the province of Minas Geraes on high mountains near Villa Rica. Sepals ovate, acuminated, pubescent. Petals yellowish, pubescent.

Yellow-flowered Guatteria. Fl. Jan. Shrub 8 feet.

21 G. AUSTRA'LIS (St. Hil. fl. bras. 1. p. 37.) stem frutescent; branches pubescent or smoothish; adult leaves oblong-elliptical, acuminated, smooth; petals almost equal, ovate, obtuse; berries obovate, obtuse. ♄. S. Native of Brazil in the province of St. Paul on the banks of the river Tarere. Leaves 4 inches long, 9-12 lines broad. Calyx 4 times shorter than the receptacle, pubescent. Berries blunt, black, with a thin pericarp, seated on a short receptacle.

Southern Guatteria. Fl. Jan. Shrub 12 feet.

22 G. FERRUGI'NEA (St. Hil. fl. bras. 1. p. 38.) stem arboreous; branches clothed with rusty pubescence at the top; leaves elliptical, acute, rather cuneated at the base, puberulous, with the middle nerve and lateral veins clothed with rusty pubescence, outer petals oblong-linear, acutish, inner ones broader, a little shorter than the rest, ovately-trapeziform, obtuse, with a short point. ♄. S. Native of Brazil in cut down woods, near the village called Arguassu, about 9 leagues from Rio Janeiro. Leaves 4-6 inches long and $1\frac{1}{2}$ to $2\frac{1}{2}$ broad. Peduncles axillary, 1-flowered, solitary or twin. Calyx 3-times shorter than the corolla, clothed with rusty hairs, with broad ovate segments. Like *G. Ouregòu*.

Rusty Guatteria. Fl. Dec. Tree 20 feet.

23 G. VILLOSI'SSIMA (St. Hil. fl. bras. 1. p. 38.) stem arborescent; branches very villous; leaves oblong-lanceolate, acuminated, convex, with revolute edges, smooth above, with the middle nerve villous beneath; peduncles axillary, usually profoundly 2-parted, 2-flowered; outer petals lanceolate, acute, inner ones a little shorter and narrower, ovate, acute. ♄. S. Native of Brazil on the iron mountains called *Serra dos Piloes*. Leaves 5-6 inches long and 12-18 lines broad. Sepals ovate, acute, clothed with villi below but with rusty down above. Petals clothed with rusty-green hairs. Berries about 4 lines long, obovate-elliptical, crowned by the permanent styles, of a blackish-red colour with a thin pericarp. The wood of this tree is very light, it is therefore made into fishing-rods, and on that account it is called in Brazil *Pindaiba* from *pindai* a rod, and *iba* a tree.

Very villous Guatteria. Tree 25 feet.

24 G. SEMPERVI'RENS (Dun. mon. anon. p. 133.) leaves ovate-oblong, smooth, shining; peduncles 1-flowered; petals oblong. acute; berries stipitate, globose. ♄. S. Native of Malabar in many places, especially about Angiccaimaal.—Rheed. mal. 5. p. 31. t. 16. A dwarf little tree, always green, flowering, and fruiting. Petals cuspidate, reddish. Berries black, fleshy, smooth, of an acid-sweet taste.

Evergreen Guatteria. Tree 10 feet.

25 G. KORI'NTI (Dun. mon. anon. p. 133.) leaves ovate-oblong, smooth, shining; peduncles axillary, 1-flowered; petals oblong, bluntish; berries stipitate, globose. ♄. S. Native every where in Malabar, especially in sandy and rocky places. Corínti-pànel, Rheed. mal. 5. p. 27. t. 14. A shrub from 5 to 10 feet high, covered with cinereous or lanuginose bark. Petals green, reflexed at the top. Berries at first green, afterwards reddish, 1-seeded; flesh sweetish.

Corinti-panel Guatteria. Fl. Jul. Aug. Shrub 5 to 10 feet.

26 G. MONTA'NA (D. C. syst. 1. p. 508.) leaves lanceolate-oblong, narrow, smooth, shining; peduncles in twos or threes, 1 or 3-flowered; petals inflexed. ♄. S. Native of Malabar in mountainous and rocky places about Paracaro. G. Malabarica, Dun. mon. p. 134.—Rheed. mal. 5. p. 33. t. 17. Very like *G. Korinti*, but the leaves are narrower and aromatic, and the flowers are smaller.

Mountain Guatteria. Fl. and fruiting all the year. Tr. 16 ft.

27 G. ACUTIFLO'RA (Dun. mon. anon. p. 134.) leaves ovate-oblong, acute, thick, smooth; peduncles axillary, short; lobes of calyx blunt; petals very acute; berries stipitate, globose. ♄. S. Native of Malabar in mountainous places.—Rheed. mal. 5. p. 35. t. 18. An evergreen shrub.

Acute-flowered Guatteria. Fl. all the year. Shrub 4 ft.

28 G. UMBILICA'TA (Dun. mon. anon. p. 135. t. 33.) leaves oblong-elliptical, acuminated, smooth; peduncles 1-flowered, bracteolate; berries stipitate, umbilicate at the base, depressed at the apex. ♄. S. Native perhaps of South America or the West Indies. Fruit about the size of a small cherry. Seeds globose, depressed on both sides.

Umbilicated-berried Guatteria. Shrub 10 feet.

29 G. CUNEIFO'RMIS (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 496.) leaves obovate, somewhat cordate at the base, smooth, glaucous beneath; peduncles lateral, 1-flowered, elongated; outer petals leafy, elongated; fruit smooth, egg-shaped, tapering to both ends. ♄. S. Native of Java.

Wedge-shaped-leaved Guatteria. Tree.

30 G. LATERIFLO'RA (Blum. l. c.) leaves oblong, acuminated, smooth; peduncles lateral, solitary, 1-flowered; fruit oval, tapering to the base, shorter than the stipe. ♄. S. Native of Java.

Side-flowered Guatteria. Tree.

31 G. PA'LLIDA (Blum. l. c.) leaves oblong, tapering to both ends, smooth, pale beneath; peduncles lateral, solitary, 1-flowered, longer than the petiole; fruit stipitate, oblong, tapering a little to both ends, pubescent. ♄. S. Native of Java.

Pale Guatteria. Tree.

32 G. BERTERIA'NA (Spreng. syst. 2. p. 635.) leaves oblong, obtuse, quite smooth on both surfaces, serrated, and quite entire; carpels very numerous, rather tomentose, oblique, mucronated, about equal in length to the stipes. ♄. S. Native of Portorico.

Bertero's Guatteria. Tree.

33 G. PRINOI'DES (Spreng. syst. 2. p. 635.) leaves oblong-lanceolate, oblique, tapering to both ends, obsoletely serrated, shining above; branches twiggy; fruit oblique, mucronated, on very short stipes. ♄. S. Native of Hispaniola.

Prinos-like Guatteria. Shrub.

34 G. VIRIDIFLO'RA; leaves oblong-lanceolate, coriaceous, smooth; flowers solitary, terminal. ♄. S. Native of Peru. Uvària viridiflòra, Ruiz. et Pav. MSS. in herb. Lamb. (v. s.)

Green-flowered Guatteria. Tree.

35 G. DECA'NDRA; leaves oblong, acuminated, smooth, except the nerves; peduncles lateral; flowers decandrous. ♄. S. Native of Peru. Uvària decándra, Ruiz. et Pav. MSS. in herb. Lamb. (v. s.)

Decandrous Guatteria. Shrub.

36 G. PAVO'NII; leaves oblong-lanceolate, smooth, long, acuminated; branches clothed with brown villi as well as the petioles and the 1-flowered solitary axillary peduncles. ♄. S. Native of Peru. Uvària longifòlia, Ruiz. et Pav. MSS. in herb. Lamb. (v. s.)

Pavon's Guatteria. Shrub.

37 G. VILLO'SA (Roxb. hort. beng. under Uvària) all parts of the tree very villous; leaves oblong or roundish, cordate at the base, on very short petioles; peduncles solitary, 1-flowered, very long, rising below the leaves; flowers very villous; calyx of 6 small ovate, acute, equal sepals; corolla of 3, obtuse petals, which are purple inside and clothed with white villi on the outside. ♄. S. Native of the East Indies above the Ghat Coadwara. Carpels winged, 1-seeded.

Villous Guatteria. Tree 40 feet.

38 G. PILO'SA (Roxb. MSS. under Uvària) leaves oblong or oval, somewhat cordate at the base, beset with tufts of brown villi, particularly remarkable on the margins; pedicels lateral, 1-flowered, clothed with long fuscous hairs as well as the 3 sepals of the calyx; petals 6, equal, lanceolate, obtuse, wavy, apparently purple. ♄. ب. S. Native of the East Indies. Fruit unknown.

Pilose Guatteria. Tree 40 feet.

39 G. MICROCA'RPA (Ruiz. et Pav. fl. per. 5. t. 479.) leaves obovate-oblong, villous on the nerves, abruptly acuminated, peduncles 1-flowered, solitary, axillary; petals fiddle-shaped, mucronate, nearly equal, clothed with brown villi as well as sepals and branches; carpels small, oval. ♄. S. Native of Peru.

Small-fruited Guatteria. Tree 30 feet.

40 G. MAGNI'FICA (Ruiz. et Pav. fl. per. 5. t. 480.) leaves large, obovate-oblong, cordate at the base, on very short thick petioles; peduncles trichotomous, 3-flowered, beset with a few scaly bracteas; petals 6, conniving, or corolla 6-lobed, globose; carpels few, obovately-globose. ♄. S. Native of Peru.

Magnificent Guatteria. Tree.

† *Species not sufficiently known.*

41 G. WILLEMETIA'NA (D. C. prod. 1. p. 94.) leaves lanceolate, smooth; peduncles lateral, compressed, bifid. ♄. S. Native? Anòna distincta, Will. herb. maur. p. 42.

Willemet's Guatteria. Tree 20 feet.

42 G. MAYPURE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 64.) leaves oblong, acuminated, running along the petiole, somewhat coriaceous, smooth, shining; peduncles axillary, solitary, 1-flowered, petals oblong, blunt, outer ones a little smaller. ♄. S. Native near Maypures in the mission of Orinoco. Flowers yellow.

Maypure Guatteria. Tree 20 feet.

Cult. The species of this genus are all stove plants. They require a loamy soil or a mixture of loam and peat. Ripe cuttings strike well in sand, under a hand-glass, placed in a moderate heat. The seeds, when procured from their native places of growth, should be sown immediately in pots, filled with a mixture of loam, peat, and sand, and then plunged into a hot-bed, but as they soon become rancid, it is doubtful whether they will remain good during a voyage.

XIII. BOCA'GEA (to the honour of Joseph Maria de Souza du Bocage, who elegantly translated the poem of Casteli on flowers into the Portuguese language, and illustrated it with notes.) St. Hil. fl. bras. 1. p. 41.

LIN. SYST. *Hexándria, Trigýnia.* Calyx 3-parted, or almost entire and cup-shaped. Petals 6, disposed in a double series, deciduous. Stamens 6, flattened, deciduous, opposite the petals; anthers 2-celled, bursting lengthwise outwardly. Ovaries 3, seated on a short receptacle, hardly connected together or completely free, 1-celled, 5-6-seeded. Berries 1-3, quite distinct, rather dry and tapering into a short pedicel, 1-celled, 3-seeded from abortion. Seeds horizontal, arillate. Albumen large, fleshy. Trees or shrubs. Leaves simple, quite entire, on short petioles, which are jointed at the base, without stipulas. Peduncles few, extra-axillary, solitary, 1-flowered, jointed above the middle.

1 B. A'LBA (St. Hil. fl. bras. 1. p. 42.) branches hardly puberulous at the top; leaves ovate-lanceolate, somewhat acuminated, smooth, shining; outer petals linear, acutish inner, ones shorter, narrower, and triquetrous above; ovaries 5-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. A small tree with leaves about 2 inches long. Flowers white.

White-flowered Bocagea. Fl. Sept. Tree 15 feet.

2 B. VI'RIDIS (St. Hil. fl. bras. 1. p. 42. t. 9.) branchlets pubescent; leaves lanceolate or ovate-lanceolate, acute at the base and acuminated at the apex, smooth above, pilose beneath; outer petals ovate, acute, concave, inner ones broader, roundish-ovate, acute; ovaries 8-seeded. ♄. S. Native of Brazil in the provinces of Rio Janeiro and Minas Geraes. Leaves about 2 inches long. Petals green, converging into a globe.

Green-flowered Bocagea. Shrub 6 feet.

XIV. MOLLINE'DIA (Francis Mollinedo, a Spanish chemist and naturalist, mentioned by the authors of Flora Peruviana, p. 72.) Ruiz. et Pav. fl. per. syst. 1. p. 142. fl. per. 5. t. 472.

LIN. SYST. *Polyándria, Polygýnia.* Calyx turbinate, nearly closed, quadrifid, torn in pieces by the fruit as it grows. Corolla none. Anthers wedge-shaped, sessile. Carpels numerous. Stigmas awl-shaped, sessile. Drupes baccate, numerous, sessile, oblong, 1-seeded, seated on a flat receptacle. Trees or shrubs with axillary or lateral flowers. This genus differs from the rest in having opposite or tern leaves.

1 M. REPA'NDA (Ruiz. et Pav. fl. per. syst. 1. p. 142. fl. per. 5. t. 472.) leaves opposite, oval, and elliptical, wrinkled, repand. ♄. S. Native of Peru in groves at Chinchao. The drupes, when ripe are of a beautiful purple colour, and tinge the hands and linen with the same colour.

Repand-leaved Mollinedia. Fl. May, June. Tree 25 feet.

2 M. OVA'TA (Ruiz. et Pav. fl. per. syst. 1. p. 143. fl. per. 5. t. 473.) leaves opposite, ovate, shining, serrated from the middle

to the apex. ♄. S. Native of Peru in groves at Chinchao. Drupes, when ripe, are eaten with avidity by birds, and they supply a fine violet colouring.

Ovate-leaved Mollinedia. Fl. May, June. Shrub 12 feet.

3 M. lanceola'ta (Ruiz. et Pav. fl. per. syst. 1. p. 143. fl. per. 5. t. 474.) leaves opposite or tern, lanceolate, toothed from the middle to the apex. ♄. S. Native of groves at Chinchao.

Lanceolate-leaved Mollinedia. Fl. May, June. Shrub 12 ft.

Cult. This species of *Mollinèdia* will thrive in a mixture of loam and sand with the addition of a little peat, and ripe cuttings will strike root if planted in a pot of sand, and placed in heat under a hand-glass.†

Order V. SCHIZANDRIA'CEÆ (plant agreeing with Schizandra in many important characters). Blum. bijdr. fl. ind. ex Schlecht. Linnæa 1. p. 497. obs.

Flowers monoecious or dioecious. Sepals 3, sometimes wanting. Petals 9 to 12 (f. 26. *a.*) disposed in a ternary order. Male flowers with 5 or numerous stamens (f. 27. *a.*) connate or free, seated on a hemispherical disk. Anthers adnate, bursting outwards by distinct chinks. Ovaries in the female flowers crowded on a long conical torus, at length elongated (f. 26. *b.*) 2-seeded, baccate. Albumen fleshy. Embryo straight. Cotyledons oval. Usually climbing shrubs with ovate-lanceolate or oblong leaves and axillary or lateral, 1-flowered peduncles. This order differs from *Menispermàceæ* in the presence of albumen, as well as in the ovaries being numerous, seated on a long slender receptacle, and in the different habit of the plants, and from *Anonàceæ* in the albumen not being ruminated or pierced by the seed-coat as well as in the very distinct habit of the plants. The medical qualities of this order are not known. Seeds do not retain their vegetative power any length of time, therefore they will be difficult to introduce in a living state.

Synopsis of the Genera.

1 Schiza'ndra. Flowers with 9 petals (f. 26. *a.*) without any sepals. Male flowers with 5 anthers, connected at the apex. Berries seated on a long receptacle (f. 26. *b.*)

2 Sarcoca'rpum. Flowers with 3 bracteas, 3 sepals, and 9-12 petals. Filaments very short, free. Ovaries numerous, crowded on a conical receptacle.

3 Sphæroste'mma. Flowers with 3 sepals and 9 petals. Filaments somewhat connate. Ovaries seated upon a conical torus, at length elongated.

4 Kadsu'ra. Calyx 3-parted. Petals 6-12. Anthers sessile, seated upon a honey-combed receptacle, free. Ovaries 30-40, seated upon a long receptacle.

5 Ma'yna. Calyx 3-parted or 3-sepalled. Petals 6-9 (f. 27. *c.*), smaller than the calyx. Filaments short. Anthers 4-sided (f. 27. *a.*), thickest at the apex. Female flowers unknown.

I. SCHIZA'NDRA (from σχιζω, *schizo*, to cut, and ανηρ, ανδρος, *aner, andros*, a male organ; stamens cleft). Mich. fl. bor. amer. 2. p. 18. D. C. syst. 1. p. 543.

Lin. syst. *Monœcia, Pentándria.* Flowers monoecious. Sepals 9, in a ternary order (f. 26. *a.*) Petals wanting. Male flowers with 5 anthers, which are joined at the apex, female ones with an indefinite number of ovaries. Berries disposed in spikes along an elongated receptacle (f. 26. *b.*). A smooth, climbing shrub, with ovate-lanceolate leaves, and small scarlet flowers.

1 S. cocci'nea (Mich. fl. bor. amer. 2. p. 219. t. 47.) ♄. ◡. G. Native of Carolina and Georgia in woods. Sims, bot. mag. t. 1413. Pursh. fl. amer. sept. 1. p. 212.

Scarlet Schizandra. Fl. June, July. Clt. 1806. Shrub cl.

Cult. A desirable plant, being a greenhouse climber with scarlet flowers. A mixture of sand, peat, and loam suits it well, and ripened cuttings will strike root if planted in a pot of sand, placed under a hand-glass.

FIG. 26.

II. SARCOCA'RPUM (from σαρξ, *sarx*, flesh, καρπος, *karpos*, a fruit; fleshy fruit). Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 497.

Lin. syst. *Monœ'cia, Polyándria.* Flowers monoecious, male ones with 3 bracteas, 3 sepals, and 9-12 petals disposed in a ternary order. Filaments very short, covering the hemispherical disk, nevertheless they are free; anthers adnate, outwardly. Female flowers with a calyx and corolla like that of the male ones. Ovaries numerous, crowded upon a conical torus. Berries 2-seeded, collected into one fruit. Albumen fleshy. A climbing shrub, with ovate-oblong leaves and crowded axillary or lateral 1-flowered peduncles.

1 S. sca'ndens (Blum. l. c.) ♄. ◡. S. Native of Java.

Climbing Sarcocarpum. Shrub cl.

Cult. This plant will thrive in a mixture of loam and peat, and ripened cuttings will strike root if planted in a pot of sand, placed under a hand-glass, in heat. †

III. SPHÆROSTE'MMA (σφαιρα, *sphaira*, a globe, στεμμα, *stemma*, a crown; stamens seated on globose disk). Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 497.

Lin. syst. *Monœ'cia, Polyándria.* Flowers monoecious or dioecious. Calyx bracteate, 3-sepalled, and with about 9 petals disposed in a ternary order. Stamens numerous, seated on the globose disk; filaments almost connate. Female flowers with numerous ovaries seated upon a conical torus, which is at length elongated. Berries 2-seeded. Albumen fleshy. Climbing shrubs.

This genus differs from the last in the stamens being connate, and in the carpels being disposed in spikes, distant, not crowded.

1 S. axilla'ris (Blum. l. c.) leaves quite entire, ovate-lanceolate, acuminated; peduncles axillary, usually solitary, 1-flowered, scarcely equal in length to the petiole; flowers dioecious; outer filaments free. ♄. ◡. S. Native of Java.

Axillary-flowered Sphærostemma. Shrub cl.

2 S. elonga'ta (Blum. l. c.) leaves ovate, acuminated, finely denticulated, smooth; peduncles axillary, 1-flowered, much longer than the petiole; flowers dioecious; filaments all connate. ♄. ◡. S. Native of Java.

Elongated-peduncled Sphærostemma. Shrub cl.

Cult. See *Sarcocárpum.*

IV. KADSU'RA (*Tuto-Kadsura* or *Sane-Kadsura* is the Japanese name of K. Japónica). Juss. ann. mus. 16. p. 340. Dunal. mon. anon. p. 57. D. C. syst. 1. p. 465.

Lin. syst. *Diœ'cia, Polyándria.* Flowers dioecious. Calyx 3-parted. Petals 6, disposed in a ternary order. Anthers

sessile or on very short filaments, seated on a honey-combed receptacle. Ovaries numerous, crowded upon a long receptacle. Berries just so many, sessile, 1-celled, 2-seeded. Climbing or twining shrubs with ovate-lanceolate or oblong leaves, and 1-flowered peduncles.

1 K. JAPO'NICA (Dunal, monogr. p. 57.) twining; leaves oval, or oblong-oval, acute at both ends, serrated, smooth, thick; peduncles opposite the leaves, 1-flowered, usually solitary, longer than the petioles; anthers sessile, immersed. ♄. ⌒. G. Native of Japan about Nagasaki. Uvària Japónica, Lin. spec. 756. Uvaria heteroclìta, Roxb.—Kœmf. amœn. 476 and 185. t. 477. hist. jap. 458. with a figure. Bark warted, fleshy, and clammy. Petioles purplish. Flowers white. Berries 2-seeded, red, but white within.

Japan Kadsura. Fl. June, Sept. Shrub twining.

2 K. GRANDIFLO'RA (Wall. tent. fl. nap. 1. p. 10. t. 14.) twining; leaves oblong, acuminated, serrated, netted beneath; peduncles 1-flowered, solitary, nodding, twice as long as petioles, bractless; stamens complete; filaments awl-shaped. ♄. ⌒. G. Native of Nipaul on Sheopore. The whole shrub smooth. Flowers whitish-yellow, purplish towards the base. Berries 2-seeded, in spikes on a thick clavated receptacle.

Great-flowered Kadsura. Shrub twining.

3 K. PROPI'NQUA (Wall. l. c. p. 11. t. 15.) twining; leaves ovate-lanceolate, almost quite entire; flowers in fascicles, erectish; peduncles furnished with bracteas, hardly equalling the petioles in length; anthers sessile, immersed. ♄. ⌒. S. Native of Nipaul on Sheopore. Flowers solitary or twin, inodorous, pale-yellow, at length orange, drooping a little. Berries 2-seeded, spiked on a tuberculated receptacle.

Allied Kadsura. Shrub twining.

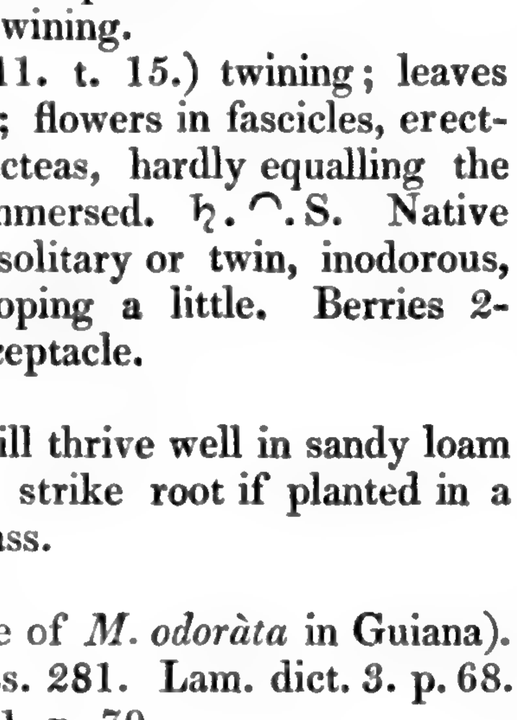
Cult. The species of *Kadsùra* will thrive well in sandy loam and peat, and ripened cuttings will strike root if planted in a pot of sand, placed under a hand-glass.

V. MAY'NA (probably the name of *M. odoràta* in Guiana). Aubl. guian. 2. p. 922. t. 352. Juss. 281. Lam. dict. 3. p. 68. t. 491. D. C. syst. 1. p. 446. prod. 1. p. 79.

LIN. SYST. *Diœ'cia, Polyándria.* Flowers dioecious, male ones of 3 sepals and 6-9 petals (f. 27. *c.*) and numerous 4-sided anthers (f. 27. *a.*). The carpels are perhaps disposed in spikes, on an elongated receptacle? Shrubs with large stalked smooth leaves and small axillary flowers.

1 M. ODORA'TA (Aubl. guian. 2. p. 922. t. 352.) leaves oblong, quite entire. ♄. S. Native of Cayenne. Pedicels numerous, axillary, 1-flowered. Flowers small, white, sweet-scented.

FIG. 27.



Sweet-scented Mayna. Fl. Dec. Shrub 8 feet.

2 M. SERI'CEA (Spreng. neu. entd. 2. p. 158.) leaves lanceolate, quite entire, silky on the under surface. ♄. S. Native of Brazil. Flowers stalked, axillary, aggregate, sweet-scented, usually 6-petalled. Ovaries usually 6.

Silky-leaved Mayna. Shrub 6 feet.

3 M. BRASILIE'NSIS (Raddi in act. soc. ital. 18. p. 23.) leaves oblong, toothletted, tapering much at the base; peduncles 3-flowered. ♄. S. Native near Rio Janeiro in the dense woods in the mountain of Cercovado.

Brazilian Mayna. Tree 40 feet.

Cult. As no species of this genus has as yet been introduced into Europe, the mode of cultivating and propagating them is therefore unknown, but notwithstanding we would advise their being grown in a mixture of loam, peat, and sand, and ripened cuttings will no doubt root if planted in a pot of sand, with a hand-glass placed over them, in heat. †

ORDER VI. MENISPERMA'CEÆ (plant agreeing with Menispermum in many important characters). D. C. prod. 1. p. 95. Menispérmeæ, Jaum. fam. 2. p. 82. t. 86. D. C. syst. 1. p. 509.

Flowers unisexual. Sepals and petals of a definite number, deciduous, disposed in a ternary or quaternary, rarely quinary order, but the petals are sometimes absent. Stamens in the male flowers monodelphous (f. 28. *c.*) rarely free, equal in number with the petals, and opposite them, rarely double that number or fewer. Anthers adnate, usually adhering the whole length of the filaments, bursting outwards. In the female flowers the ovaries are numerous (f. 28. *i.* f. 30. *a.*) somewhat connected at the base, sometimes solitary, each bearing a style, or many-celled. Drupes nearly all baccate, 1 or many-seeded, oblique or lunulate, compressed, with the seeds of the same form. Embryo curved or peripheric. Albumen wanting, or when present it is very sparing and fleshy. Cotyledons flat, sometimes distant, and placed in the two cells of the seed. Climbing or twining shrubs, mostly natives within the tropics, with alternate, stalked, usually cordate or peltate, simple, rarely compound leaves, always with the middle nerve terminating in an awn or point, destitute of stipulas. Flowers small, usually racemose and axillary. This order differs from *Anonàceæ* in the plants being climbing, which is very rarely the case in that order, as well as in the stamens being definite, in the structure of the fruit, and distinct habit of the plants, and from *Berberídeæ* in the stamens being opposite the petals. The bitter diuretic sorts of *Pareira brava* are the produce of *Cissampèlos Pareira*. The famous *Colomba-root*, so much esteemed for its intense bitterness, and for its use in diarrhœa and dysentery, is the produce of *Cocculus palmàtus*. The poisonous drug called *Cócculus Indicus* is the produce of *Cócculus suberòsus*, and several Brazilian species of *Cocculus* are said to possess powerful febrifugal qualities, which may be said of the whole of the plants of this order in a greater or less degree. The berries of *Lardizabàla biternàta* are sold in the markets of Chili, according to different travellers. The seeds do not retain their vegetating power any length of time, therefore they are truly difficult to import in a living state from any great distance, but as none of the species are ornamental, this is the less to be regretted.

Synopsis of the Genera.

TRIBE I.

LARDIZABA'LEÆ. *D. C. prod. 1. p. 95. Flowers usually dioecious. Male flowers with symmetrical number of parts* (f. 28. *a. d.*). *Carpels numerous, distinct* (f. 28. *i.*) *many-seeded, 1 or many-celled. Leaves compound.*

1 LARDIZABA'LA. Flowers dioecious. Sepals and petals disposed in a ternary order (f. 28. *a. d. h.*) in 2 or 3 series. Male flowers with 6 monodelphous stamens (f. 28. *c. b.*) female ones with 3-6 6-celled berries (f. 28. *i.*) cells many-seeded.

2 STAUNTO'NIA. Sepals disposed in a ternary order in 2

series. Petals wanting. Male flowers with 6 monodelphous stamens. Female flowers unknown.

3 BURASA'IA. Sepals and petals disposed in a ternary order in 2 series. Male flowers with 6 stamens, which are connected at the base. Ovary triple. Drupes 3.

4 HOLBŎ'LLIA. Flowers monoecious. Sepals 6, in two series. Male flowers with 6 stamens, furnished with a gland at the base of each stamen. Berries 3, distinct, oblong, follicular, 1-celled, many-seeded.

5 GYNOSTE'MMA. Sepals 10, in 2 series, connected at the base. Petals wanting. Male flowers with 5 monodelphous stamens; female ones with 3-4-celled ovary; cells 1-seeded.

TRIBE II.

MENISPE'RMEÆ. *D. C. prod.* 1. *p.*96. *Flowers usually dioecious. Male ones with a symmetrical number of parts* (f. 29. *a. b.*). *Carpels numerous, distinct* (f. 30. *a.*), 1-*celled*, 1-*seeded* (f. 30. *b.*). *Leaves simple. Flowers small, usually greenish yellow.*

6 SPIROSPE'RMUM, Sepals and petals disposed in a ternary order in 2 series. Male flowers with 6 stamens, the 3 inner ones connected at the base; female ones with 8 or 9 carpels.

7 CO'CCULUS. Sepals and petals disposed in a ternary order, in 2, rarely 3, series (f. 29. *a. b.*). Male flowers with 6 free stamens, which are opposite the petals, female ones with 3-6 carpels.

8 COSCI'NIUM. Sepals and petals disposed in a ternary order, in 2 series. Male flowers with 6 free stamens, female ones with 3 ovaries. Berries 1-3. Seed pierced by a large hole.

9 TILIACO'RA. Sepals and petals disposed in a ternary order; sepals 6; petals 3. Male flowers with 6 stamens, alternate ones shortest; female flowers with about 12 ovaries. Berries on pedicels.

10 ANAMI'RTA. Calyx of 2 sepals. Petals 6 in 2 series. Stamens 6, monodelphous; anthers collected into a globe. Female flowers unknown.

11 PSE'LIUM. Sepals and petals disposed in a ternary order, in 2 series. Male flowers with 6 free stamens; female ones with 4 sepals without petals, with a single ovary and a trifid stigma.

12 CISSA'MPELOS. Male flowers with 4 sepals, without petals, and 4 or 2 monodelphous stamens. Female flowers with 1 lateral sepal and 1 petal in front of the sepal. Ovary 1. Stigmas 3. Drupe obliquely kidney-shaped.

13 MENISPE'RMUM. Sepals and petals disposed in a quaternary order, in 2 or 3 series. Male flowers with 16-20 stamens, female ones with 2 or 4 ovaries. Drupe baccate, roundish-kidney-shaped.

14 ABU'TA. Flowers unknown. Berries 2 or 3, rising from the same receptacle (f. 30. *a.*), large, ovate, dry, somewhat compressed, with a fragile covering, (f. 30. *b.*).

15 TRICHO'A. Sepals and petals 3, reflexed at the top. Male flowers with 6 stamens inserted in the disk, the 3 outer ones are sterile alternating with the petals, the 3 central ones monodelphous and fertile. Female flowers with 6 sterile stamens and 3 drupaceous, coriaceous, oblong, villous, carpels.

16 AGDE'STIS. Flowers hermaphrodite. Sepals 4. Petals wanting. Stamens 24. Anthers bifid at both ends. Carpels 4, connected together into one 4-furrowed ovary, bearing only one style, which is terminated by 4 spreading stigmas.

17 CLY'PEA. Male flowers with 6 sepals, the 3 alternate ones smaller. Petals 3. Filament 1, truncate, crowned by an annular anther. Female flowers with 6 sepals without petals. Stigma filiform. Berry superior.

Allied Genera.

18 MENISCO'STA. Flowers polygamous, male ones with a small 4-5-cleft calyx and 4-5 petals disposed in two series. Stamens 5, broad, opposite the petals, and glued to them at the base. Ovary didymous, sterile. Female flowers with the calyx, corolla, and stamens as in the male. Ovary didymous. Stigmas 2, bluntish. Drupes 2, baccate, kidney-shaped, compressed, 1-seeded.

19 JO'DES. Flowers dioecious, male ones with a 5-parted calyx, a 5-parted corolla, and 5 stamens which are connected at the base; female ones with the calyx and corolla as in the male, but are usually 6-cleft. Ovary simple, ovate-globose, 1-seeded. Stigma sessile, orbicular, radiately emarginate. Fruit unknown.

Tribe I.

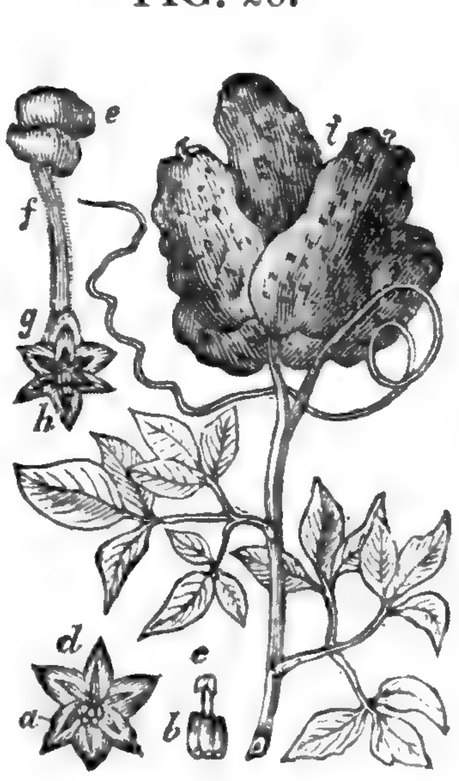
LARDIZABA'LEÆ (plants agreeing in character with *Lardizabàla*). D. C. prod. 1. p. 95. Flowers usually dioecious. Male flowers equal in number of parts. Carpels many, distinct, many-seeded, 1 or many-celled. Leaves compound.

I. LARDIZABA'LA, (in honour of Michael Lardizala y Uribe, a Spanish naturalist, mentioned by the authors of Flora Peruviana, p. 133.) Ruiz, et Pav. prod. p. 143. t. 37. D. C. sys. 1. p. 511. prod. 1. p. 95.

LIN. SYST. *Diœ'cia* or *Polygàmia, Monodélphia.* Flowers dioecious or polygamous. Sepals and petals disposed in a ternary order in 2 or 3 series (f. 28. *a. d. h.*). Male flowers with 6 monodelphous stamens (f. 28. *c. b.*). Female with 3 or 6 6-celled berries (f. 28. *i. e.*); cells many-seeded. Pulp of fruit sweet and eatable.

1. L. BITERNA'TA (Ruiz. et Pav. fl. per. syst. 286. prod. t. 37.) leaves 2-3-ternate; leaflets oblong, acute, unequal at the base, hence a little toothed; bracteas 2, large, unequally cordate, situated at the base of peduncle. ♄. ◠. S. Native of Chili in woods at Conception; also in Peru about Arauco. The fruit eatable, and is gathered and sold at markets by the natives of Peru and Chili. The pulp is sweet and grateful to the taste. It is known in Peru by the name of *Aguilboguil* and *Guilbogui*, and in Chili by that of *Coguill-Vochi*.

FIG. 28.



Biternate-leaved Lardizabala. Shrub twining.

2 L. TRITERNA'TA (Ruiz. et Pav. fl. per. syst. 287.) leaves 2-3-ternate; leaflets oval or obovate, obtuse, quite entire; bracteas 2, large, ovate, situated at the base of the peduncle. ♄. ◠. S. Native of Chili in the woods at Conception. Deless. icon. sel. 1. t. 91. Flowers unknown. Fruit 3, oblong cylindrical; younger ones crowned by the thick stigma.

Triternate-leaved Lardizabala. Shrub twining.

3 L. TRIFOLIA'TA (D. C. syst. 1. p. 513.) leaves ternate, tri-

foliate; leaflets ovate; bracteas small, along the pedicels. ♄. ◡. S. Native of Peru. Deless. icon. sel. 1. t. 92. A somewhat climbing shrub, with the habit of a species of *Glycìne*. Flowers whitish-yellow. Petals 6, ovate-roundish, situated at the base of the column of stamens.

Trifoliate Lardizabala. Shrub cl.

Cult. See *Cócculus* and *Stauntònia*.

II. STAUNTO'NIA (in honour of Sir George Staunton, who has introduced numerous plants from China, on his return from a mission there with Lord Macartney). D. C. syst. 1. p. 513. prod. 1. p. 96.

Lin. syst. *Diœ'cia Monodélphia*. Sepals disposed in a ternary order in 2 series. Petals none. Male flowers with 6 monodelphous stamens. Female flowers unknown.

1 S. Chine'nsis (D. C. syst. 1. p. 514.) ♄. ◡. G. Native of China. Sepals of flower 6 lines long. Anthers whitish. Leaves on petioles, peltate, 5-foliate. A smooth sarmentose shrub.

Chinese Stauntonia. Shrub rambling.

Cult. This plant, as well as all belonging to *Menispermàceæ*, require plenty of room to grow and climb or they will not flower. A mixture of loam and peat suit it well, and cuttings put in in the spring will root freely, under a hand-glass. †

III. BURASA'IA (from *Bourasaha*, the name of the plant in Madagascar.) Pet. Th. dict. scient. nat. ex gen. madag. p. 18. D. C. syst. 1. p. 514. prod. 1. p. 96.

Lin. syst. *Diœ'cia Monodélphia*. Sepals and petals disposed in a ternary order in 2 series. Male flowers with 6 stamens, which are joined at the base. Female flowers with 6 sterile stamens, triple ovary, and 3 drupes.

1 B. Madagascarie'nsis (Pet. Th. l. c.) ♄. S. Native of Madagascar. Leaves alternate, trifoliate, on long petioles; leaflets 3, ovate, entire. A weak shrub with racemose flowers.

Madagascar Bourasaha. Shrub rambling.

Cult. This plant will thrive well in a mixture of loam and peat, and cuttings put in in the spring will root freely under a hand-glass, placed in a good heat. †

IV. HOLBŎLLIA (in honour of Fred. Louis Holboel, superintendent of the botanic garden at Copenhagen.) Wall. tent. fl. nap. 1. p. 25. t. 16 and 17.

Lin. syst. *Monœ'cia, Hexándria*. Flowers monoecious. Perianth 6-leaved, disposed in a double series. Stamens 6, distinct. Glands 6, opposite the base of the stamens. Female flowers, with 6 sterile stamens. Stigma simple. Berries 3, distinct, oblong, follicular, 1-celled, many-seeded.—Climbing shrubs, with compound leaves. The natives of Nipaul eat the fruit of both species, the pulp of which is sweetish, but otherwise of an insipid taste. It is very probable that *Rajània quinàta* and *hexaphýlla*, Thunb. fl. jap. 148, 149. belong to this genus.

1 H. latifo'lia (Wall. tent. fl. nap. 1. p. 24. t. 16.) leaflets 3-5, ovate-oblong, 3-nerved; flowers racemose. ♄. ◡. G. Native of Nipaul on Chundaghira and Sheopore. Flowers white, campanulate. Fruit baccate, oval, turning, purple, eatable.

Broad-leaved Holbollia. Shrub cl.

2 H. angustifo'lia (Wall. tent. fl. nap. 1. p. 25. t. 17.) leaflets 7-9, linear-lanceolate, acuminated; peduncles 2-3-flowered, in fascicles. ♄. ◡. G. Native of Nipaul, with the last. Flowers white, purplish on the outside. Fruit baccate, turning purple, eatable.

Narrow-leaved Holbollia. Shrub cl.

Cult. See *Cocculus* and *Stauntonia*.

V. GYNOSTE'MMA (from *γυνη, gyne*, a female or stigma; *στεμμα, stemma*, a crown; ovaries crowned by the permanent stigmas.) Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 497.

Lin. syst. *Diœ'cia, Monodélphia*. Flowers dioecious. Sepals 10, disposed in a quinary order, connected at the base. Petals wanting. Stamens 5, monodelphous, bearing the anthers on the outside; anthers 2-celled, connected into a ring. Female flowers with the calyx as in the male. Ovary simple, half inferior, 3-5-celled; cells 1-seeded. Stigmas 3-4, permanent. Drupes globose, 3-4-celled; cells or nuts 1-seeded. Embryo inverted, without albumen.—Climbing shrubs, with simple or pedate leaves.

1 G. peda'ta (Blum. l. c.) leaves 3-7-foliate; leaflets ovate-oblong, coarsely toothed; panicle axillary. ♄. ◡. S. Native of Java.

Pedate-leaved Gynostemma. Shrub cl.

2 G. simplicifo'lia (Blum. l. c.) leaves ovate-oblong, acuminated, smooth, terminated by a repand-serrulated mucrone; racemes panicled, axillary, and terminal. ♄. ◡. S. Native of Java.

Simple-leaved Gynostemma. Shrub cl.

Cult. See *Cocculus* and *Stauntònia*.

Tribe II.

MENISPE'RMEÆ (plants agreeing in character with Menispérmum.) D. C. prod. 1. p. 96. Flowers usually dioecious; male flowers equal in number of parts. Carpels many, distinct, 1-celled, 1-seeded. Leaves simple. Twining or climbing shrubs, with small inconspicuous flowers, which are usually greenish-yellow.

VI. SPIROSPE'RMUM (from *σπιερα, spiera*, a screw; *σπερμα, sperma*, a seed; embryo long and spirally twisted.) Pet. Th. dict. scienc. nat. ex gen. mad. p. 19. no. 63. D. C. syst. 1. p. 514. prod. 1. p. 96.

Lin. syst. *Diœ'cia, Monodélphia*. Sepals and petals disposed in a ternary order in two series. Male flowers with 6 stamens, the 3 inner ones are joined at the base; female ones with 8 or 9 carpels, forming a round head. Embryo cylindrical, very long and spirally twisted, whence the generic name.

1 S. penduliflo'rum (Pet. Th. l. c.) ♄. ◡. S. Native of Madagascar. A weak sarmentose shrub, with alternate many-nerved leaves, and pendulous racemes of flowers.

Pendulous-flowered Spirospermum.

Cult. This genus requires the same treatment as *Cócculus*, which see.

VII. CO'CCULUS (from *coccus*, the systematic name of cochineal, applied to this genus on account of the greater part of the species bearing scarlet berries.) Bauh. pin. 511. D. C. syst. 1. p. 515. prod. 1. p. 96.

Lin. syst. *Diœ'cia, Hexándria*. Sepals and petals disposed in a ternary order, in 2, very rarely in 3 series (f. 29. *a*.). Male flowers with 6 free stamens (f. 29. *b*.) opposite the petals; female ones with 3 or 6 carpels. Drupes baccate, 1 to 6, usually obliquely-reniform, somewhat flattened, 1-seeded. Cotelydons distant. A large genus of climbing or twining shrubs, with peltate, cordate, ovate or oblong, entire, rarely lobed leaves. Peduncles axillary, rarely lateral, those bearing the male flowers usually many-flowered, those bearing the female ones few-flowered, either free from bracteas or furnished with very small ones (not as in *Cissámpelos* furnished with large bracteas.) The berries of many of this genus are used in their native countries to intoxicate fish and birds, &c. in order to take them, being made up into a paste, and it is said they are often used by brewers to give their ale and porter an intoxicating quality.

§ 1. *Leaves peltate.*

1 C. Japo'nicus (D. C. syst. 1. p. 516.) leaves peltate, roundish-ovate, acuminated, quite entire, smooth; petioles twining, length of leaves; female peduncles 3 times shorter than the petioles, umbelliferous; carpels twin. ♄. ◡. G. Native of Japan near Nagasaki and elsewhere. Menispérmum Japóni-

cum, Thunb. jap. 195. Stems smooth, slightly polygonal. Seeds white.

Var. β, Timoriénsis (D. C. prod. 1. p. 96.) peduncles equal in length to the petioles. Perhaps a different species. ♄. ◠. S. Native of the island of Timor.

Japan Cocculus.. Shrub tw.

2 C. Roxburghia'nus (D. C. syst. 1. p. 516.) leaves peltate, ovate, roundish at the base, and acutish at the apex, quite entire, smooth; petioles much shorter than the leaves; female peduncles much shorter than the petioles, umbelliferous; berries generally 6 or 7. ♄. ◠. S. Native of the East Indies. Cissámpelos glàbra, Roxb. according to Wallich. Very like *Cócculus Japónicus*. Branches smooth, climbing and twining, cylindrical.

Roxburgh's Cocculus. Shrub tw.

3 C. pelta'tus (D. C. syst. 1. p. 516.) leaves peltate, somewhat triangular, acuminated, bluntly truncate at the base, quite entire, rather scabrous; petioles pilose; female peduncles racemose, scarcely double the length of the petioles. ♄. ◠. S. Native of Coromandel and Malabar.—Pluk. phyt. t. 24. f. 6.—Rheed. mal. 7. p. 93. t. 49. Menispérmum peltàtum, Lam. dict. 4. p. 96. Root the form and size of that of *Daùcus satìvus*, or *carrot*, and it is used for the cure of dysentery and hemorrhoids in Malabar. Female flowers small, whitish. Fruit, when ripe, white and shining.

Peltate-leaved Cocculus. Shrub tw.

4 C. Burma'nni (D. C. syst. 1. p. 517.) leaves peltate, triangularly oblong, acuminated, quite entire, shining, bluntly truncate at the base; male peduncles very long, racemose. ♄. ◠. S. Native of Ceylon.—Burm. zeyl. 218. t. 101. Male flowers 6-cleft, and the female ones with 1 pistil.

Burmann's Cocculus. Shrub tw.

5 C. Forste'ri (D. C. syst. 1. p. 517.) leaves peltate, ovate, roundish at the base and acutish at the apex, quite entire, smooth; petioles longer than the leaves. ♄. ◠. S. Native? Menispérmum peltàtum, Forst. ined. in herb. Lamb. This shrub is very like *C. Roxburghiànus*, but the leaves are a little larger.

Forster's Cocculus. Shrub tw.

6 C. rimo'sus (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 498.) leaves somewhat peltate; oval-oblong, acute, coriaceous, smooth; racemes panicled, axillary, shorter than the leaves; stems chinky, or rather the bark. ♄. ◠. S. Native of Java. Menispérmum rimòsum, Spreng. syst. app. p. 143.

Chinky-barked Cocculus. Shrub tw.

§ 2. *Leaves cordate at the base.*

7 C. rotundifo'lius (D. C. syst. 1. p. 517.) leaves somewhat peltate, rather cordate at the base, orbicular, hardly acuminated, mucronate, smooth; peduncles axillary, racemosely-panicled, shorter than the leaves. ♄. ◡. S. Native? Cultivated in the gardens at Paris in 1812. This shrub is very like *Aristolòchia sìpho* in habit. Berries blackish, somewhat globose, the size of a pea.

Round-leaved Cocculus. Fl.? Clt. 1820. Shrub cl.

8 C. corymbo'sus (Blum. l. c.) leaves somewhat peltate, cordate-roundish, mucronulate, 5-nerved; corymbs axillary, solitary, shorter than the leaves; pedicels somewhat umbellate. ♄. ◡. S. Native of Java. Menispérmum corymbòsum, Spreng. syst. app. p. 143. Plant villous.

Corymbose-flowered Cocculus. Shrub cl.

9 C. glauce'scens (Blum. l. c.) leaves somewhat peltate, cordate-orbicular, mucronate, smooth, under surface glaucous; racemes panicled, lateral, longer than the leaves. ♄. ◠. S. Native of Java. Menispérmum glaucéscens, Spreng. syst. app. p. 143.

Glaucescent-leaved Cocculus. Shrub tw.

10 C. cordifo'lius (D. C. syst. 1. p. 518.) leaves orbicular, cordate, acuminately-cuspidate, 7-nerved, smooth; female racemes lateral, simple, longer than the leaves. ♄. ◡. S. Native of Malabar and the East Indies. Citamérdu, Rheed. mal. 7. p. 39. t. 21. Menispérmum cordifòlium, Willd. spec. 4. p. 826. M. Malabàricum var. β, Lam. dict. 4. p. 96. M. glàbrum Klein, mss. Fruit ovate, tern; a decoction of them is refreshing, and the juice of the plant cures ulcers, according to Rheede. It is also employed in the cure of jaundice in India.. It is tonic and febrifuge.

Heart-leaved Cocculus. Clt. 1822. Shrub cl.

11 C. convolvula'ceus (D. C. syst. 1. p. 518.) leaves orbicular, cordate, acuminately-cuspidate, 7-nerved, smooth; male peduncles simple, axillary, shorter than the leaves. ♄. ◠. S. Native of the East Indies. This plant is very like *C. cordifòlius*, and is perhaps the male plant of that species.

Convolvulus-like Cocculus. Shrub tw.

12 C. Malaba'ricus (D. C. syst. 1. p. 518.) leaves cordate, ovate, acuminated, under surface villous; female racemes simple, lateral, length of the leaves. ♄. ◠. S. Native of Malabar, where it is always in flower and fruit. Menispérmum Malabàricum, Willd. spec. 4. p. 826. Pee-amérdu, Rheed. mal. 7. p. 37. t. 19 and 20. The flowers, according to Rheede, are hermaphrodite, and of a pale green-colour. Fruit first green, then yellowish, but at last reddish and shining.

Malabar Cocculus. Fl. year. Shrub twining.

13 C. coria'ceus (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 498.) leaves cordate, ovate, bluntly acuminated, mucronate, coriaceous, smooth; racemes elongated, axillary, solitary, pendulous. ♄. ◡. S. Native of Java. Menispérmum coriàceum, Spreng. syst. app. p. 148.

Coriaceous-leaved Cocculus. Shrub cl.

14 C. populifo'lius (D. C. syst. 1. p. 519.) leaves heart-shaped, acuminated, quite entire, smooth; female panicles large, many-flowered. ♄. ◠. S. Native of the island of Timor. This plant is very like *C. cordifòlius* and *C. Malabàricus*, with large leaves, similar to those of *Pòpulus angulàtus*. Carpels 1 or 2, baccate, on pedicels, somewhat globose, about the size of a pea.

Poplar-leaved Cocculus. Shrub tw.

15 C. lacuno'sus (D. C. syst. 1. p. 519.) leaves heart-shaped, acuminated, upper surface green and smooth, under surface clothed with yellowish wool; peduncles lateral, compound, racemose, twice as long as petioles. ♄. ◠. S. Native of the Celebes and Moluccas on rocks by the sea-shore.—Rumph. amb. 5. p. 35. t. 22. Menispérmum lacunòsum, Lam. dict. 4. p. 98. Flowers small, white, 6-parted, with an ungrateful odour. Berries at first white, then black, and at last purplish-black; they are used by the natives in various ways for taking birds and fish by intoxicating them; the most common mode of giving them, is in a paste.

Plated-barked Cocculus. Shrub tw.

16 C. subero'sus (D. C. syst. 1. p. 519.) leaves cordate, subtruncate at the base, compact, shining; panicles many-flowered; stem perennial, twining; bark corky and chinky. ♄. ◠. S. Native of Malabar. Cócci orientàlis, Tab. icon. t. 924. f. 1. Menispérmum Cócculus, Lin. spe. 1468? Gært. fruct. 1. p. 219. t. 70. f. 1. exclusive of the synonyms. This is considered the true *Cocculus Indicus* of the shops. The berries are used in various ways as a medicine, and for killing vermin. They are also used in the East Indies to intoxicate fish, &c. in order to take them, being made up into a paste and thrown into the water. Their use for this purpose is, we believe, prohibited in England, nor is it easy to account for the copious importation of these berries as an article of trade, unless they serve to adul-

terate fermented liquors, as is often reported. The seeds are intensely bitter and very acrid. M. Boullay analyzed them, and found them to contain about half their weight of a concrete waxy oil, albumen, a particular colouring matter, a new bitter poisonous principle, Picrotoxia Lignin, and various new saline matters. In later experiments M. Boullay detected a peculiar acid, to which he has given the name of Menispermic. Picrotoxia is obtained by digesting for a day a decoction of the berry upon caustic magnesia. It is then to be treated with alcohol, which dissolves out the picrotoxia, and this may be purified by evaporation and repeating the solution, and if much coloured, by the addition of animal charcoal. It has the form of quadrangular prisms, white, brilliant, semi-transparent, and extremely bitter; it is soluble in three parts of alcohol, in 25 of boiling, and 50 of cold water. It melts by heat, and contains no azote. Vauquelin got a substance very similar from the *Dàphne alpìna*. Picrotoxia resembles camphor in its action, but is much more powerful and deleterious. The extract has been lately recommended by M. Fouquier of Paris in paralysis, but Dr. Duncan of Edinburgh tried it, and found it less energetic than considering its nature and the small proportion of extract obtained he expected. It seemed to act as a tonic, and to keep the bowels in a good state, but he observed it had no narcotic or stimulant effects. An ointment made with it has long been a domestic remedy in some places to kill vermin on the head, and is successfully applied in cases of tinea of the head. Perhaps the berries of several Indian species of this genus possess the same quality.

Cork-barked Cocculus. Fl.? Clt. 1790. Shrub tw.

17 C. Plukene'tii (D. C. syst. 1. p. 520.) leaves ovate, somewhat cordate at the base, bluntly truncate and mucronate at the apex; female racemes axillary, simple, rather longer than the leaves. ♄. ⌒. S. Native of Malabar and Java. C. officinàrum, Pluk. mant. 52. t. 345. f. 7. Menispérmum Cócculus, Willd. 4. p. 826. The berries are in bunches like grapes, but smaller; first white, then red, and finally blackish purple. In the East Indies they are made into a paste which is used to intoxicate fish and birds, &c.

Plukenet's Cocculus. Fl.? Clt. 1790. Shrub cl.

18 C. Aristolo'chiæ (D. C. syst. 1. p. 520.) leaves cordate, blunt, mucronate, entire; female peduncles 1-flowered, shorter than the petioles. ♄. ◡. S. Native of Madras.—Pluk. alm. t. 13. f. 2.

Aristolochia-leaved Cocculus. Shrub cl.

19 C. flave'scens (D. C. syst. 1. p. 520.) leaves somewhat cordate, ovate, bluntly-acuminated, younger ones orbicular, pubescent; female racemes panicled, lateral, longer than the leaves. ♄. ◡. S. Native of the Moluccas on rocks by the sea-shore.—Rumph. amb. 5. p. 38. t. 24. Menispérmum flavéscens, Lam. dict. 4. p. 100. Flowers small, white, sweet-scented. Fruit of a dirty yellow colour; they are used to poison fish. A decoction of the wood is used against the jaundice, white phlegm, and indigestion, in the Moluccas. (Rumph.)

Yellowish-fruited Cocculus. Fl. Sept. Shrub cl.

20 C. glau'cus (D. C. syst. 1. p. 521.) leaves heart-shaped, acuminated, entire, under surface pubescent; peduncles racemosely-corymbose, shorter than the petioles. ♄. ◡. S. Native of Amboyna in sunny valleys and deserted gardens.—Rumph. amb. 5. p. 40. t. 25. f. 1. Menispérmum glaúcum, Lam. dict. 4. p. 100. Flowers small, yellowish-green. Berries small, blackish-purple.

Glaucous-leaved Cocculus. Fl. Jul. Shrub cl.

21 C. cri'spus (D. C. syst. 1. p. 521.) leaves cordate, acuminated, smooth; stem somewhat angular, and rough with roundish tubercles; racemes simple, slender, lateral. ♄. ◡. S. Native of Java, Sumatra, Moluccas, and Bengal, and from thence transported to Amboyna and Bali.—Colebr. in Lin. soc. trans. 13. p. 6. t. 17. f. 3.—Rumph. amb. 5. p. 83. t. 44. f. 1. Menispérmum críspum, Lin. spec. 1468. The whole plant is bitter, and is used in the Moluccas against gripings of the abdomen, and to kill vermin. It is considered by the natives of Bengal a powerful tonic, and is very highly valued by them.

Curled Cocculus. Fl.? Clt. 1822. Shrub cl.

22 C. tamoi'des (D. C. syst. 1. p. 521.) leaves very entire, truncate or cordate at the base, ovate, pointed, 5-nerved, smooth; male racemes slender, a little longer than the leaves. ♄. ⌒. S. Native of Cayenne. Similar to *C. Carolìnus*, but differing in the leaves being smooth and the racemes much longer.

Tamus-like Cocculus. Shrub tw.

23 C. Chondode'ndron (D. C. syst. 1. p. 522.) leaves cordate, much crenated, acuminated, under surface tomentose. ♄. ◡. S. Native of South America in Pilaya. Chondodéndron tomentòsum, Ruiz. et Pav. prod. fl. per. 132. syst. 261. Epibatèrium? tomentòsum, Pers. ench. 2. p. 561. The bark of this species is exceedingly bitter.

Lump-tree Cocculus. Fl. Oct. Nov. Shrub cl.

24 C. inca'nus (Coleb. in Lin. trans. 13. p. 57. t. 17. f. 1.) leaves cordate, entire, villous, mucronate; panicles axillary, shorter than the leaves. ♄. ◡. S. Native of Chitagong and Silhet in Bengal. Menispérmum villòsum, Roxb. mss. Flowers yellowish-green, inodorous.

Hoary-leaved Cocculus. Fl. year. Clt. 1820. Shrub cl.

25 C. se'pium (Coleb. in Lin. soc. trans. 13. p. 58. t. 17. f. 2.) leaves from broad cordate to linear cordate, downy; male flowers in racemes; female ones axillary, solitary. ♄. ◡. S. Menispérmum hirsùtum, Roxb. citing Willd. spec. 4. p. 829. Native of the East Indies. Very common in hedges.

Hedge Cocculus. Clt. 1820. Shrub cl.

26 C. tomento'sus (Coleb. in Lin. soc. trans. 13. p. 59.) leaves roundish-cordate, 3-lobed, tomentose; racemes axillary, generally simple, one, two, or more together; corollas expanding; nectarial scales entire. ♄. ◡. S. Native of Bengal in thickets and hedges. Menispérmum tomentòsum, Roxb. mss.

Tomentose Cocculus. Fl. Feb. March. Clt. 1820. Shrub cl.

27 C. hexa'gynus (Coleb. in Lin. soc. trans. 13. p. 63.) old leaves cordate, younger ones parabolic, entire, upper surface smooth, under surface rather hairy; racemes axillary and terminal, panicled, villous; pedicels 3-flowered. ♄. ⌒. G. Native of China near Canton. Menispérmum hexágynum, Roxb. mss. Flowers small, white.

Six-styled Cocculus. Shrub tw.

28 C. Bantame'nsis (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 498.) leaves somewhat cordate-oval, acute, generally 5-nerved, smooth, quite entire; panicles elongated, axillary, solitary. ♄. ◡. S. Native of Java. Menispérmum Bantamense, Spreng. syst. app. p. 148.

Bantam Cocculus. Shrub cl.

29 C. hasta'tus (D. C. syst. 1. p. 522.) leaves cordate at the base, hastate, villous beneath; auricles blunt, drawn out a little beyond the auricles at the apex; petioles villous, six times shorter than the leaves. ♄. ⌒. S. Native of the East Indies. Menispérmum hastàtum, Lam. dict. 4. p. 98.

Halbert-leaved Cocculus. Shrub tw.

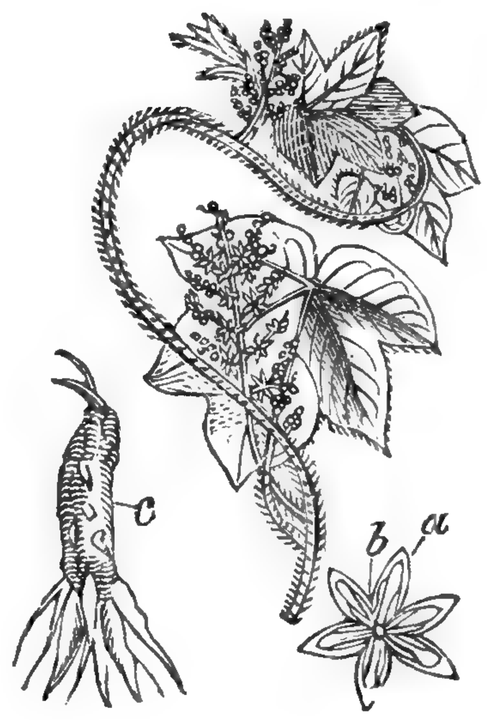
30 C. tri'lobus (D. C. syst. 1. p. 522.) leaves 3-lobed, nerved, villous; lobes acute, mucronate, entire; petioles reflexed at the base; peduncles racemose, shorter than the petioles. ♄. ⌒. G. Native of Japan near Nagasaki. Menispérmum trílobum, Thunb. fl. jap. 194. The whole plant is villous. Flowers whitish. Berries globose, 1-seeded, about the size of a small pea.

Three-lobed-leaved Cocculus. Fl. Sep. Oct. Shrub tw.

31 C. palma'tus (D. C. syst. 1. p. 522.) leaves cordate at the base, palmately-5-cleft, covered with hispid hairs, lobes

acuminated, quite entire. ♃. ◠. S. Native of the south-eastern coast of Africa, especially in shady woods of Oibo and Mozambique. Menispérmum palmàtum, Lam. dict. 4. p. 95. D. C. ess. prop. pl. ed. 2. p. 79. Colomba, Columbo or Kalumbo, Berry, in asiat. reser. 10. p. 385. t. 5. Male plant. Roots perennial, thick, with fusiform branches (f. 29. *c*.). Stems twining, annual, about the thickness of a goose-quill. The roots of this plant are sold in the shops under the name of *Calumba* or *Colomba Root;* it is a bitter stomachic, useful in dysentery, diarrhœa, and dyspepsia. This root is produced in Africa in the country of the Caffres, and forms an important article of commerce with the Portuguese at Mozambique. It is remarkable that the place of the growth of this important plant should have been so long unknown to Europe. It is never cultivated, but grows naturally, and in great abundance in the thick forests that are said to cover the coasts of Oibo and Mozambique, and inland about 15 or 20 miles. The roots are dug up in March, the dry season, or when the natives are not employed in agriculture, not the original root, which is perennial, but off-setts from its base, that are of sufficient size, yet not so old as to be full of fibres, which render it unfit for commerce. Soon after it is dug up, the root is cut into slices, strung on cords and hung up to dry in the shade. It is deemed merchantable when on exposure to the sun it breaks short, and of a bad quality when it is soft or black. This root is in high estimation among the Africans, even far removed from Mozambique, for the cure of dysentery, which is frequent among them, also for the cure of syphilis and all complaints of long standing, and as a remedy for almost every disorder. In powder, it is used for the cure of ulcers. It is generally brought in transverse sections, from half an inch to three inches in diameter, rarely divided across. This is evidently done to facilitate its drying; for the large pieces are all perforated with holes. The root is yellow within. Its smell is faintly aromatic, and readily lost when not preserved in close vessels; the taste is unpleasant, bitter, and somewhat acrid; the bark has the strongest taste; the pith is almost mucilaginous. Its active constituent is a bitter principle called *Cinchonine*. It also contains a great deal of mucilage. Planche says it contains one-fourth of its weight of starch. It is accordingly more soluble in water than in alcohol. The tincture is not precipitated by water, and does not affect the colour of infusion of turnsole, or solution of red sulphate of iron. In India it is much used in diseases attended with bilious symptoms, particularly in cholera; and it is said to be sometimes very effectual in other cases of vomiting. It produces excellent effects in dyspepsia. Half a drachm of the powder is given repeatedly in the day. The false *Colombo-root*, the produce of *Frasèra Waltèri*, has been imported from the United States. (f. 29.)

FIG. 29.



Palmate-leaved Cocculus or Colombo-root. Fl.? Clt.? Pl. tw.

32 C. CINERA'SCENS (St. Hil. fl. bras. 1. p. 59.) leaves ovate, acutish, mucronulate, somewhat cordate at the base, crenated, clothed with greyish tomentum beneath. ♄. ◡. S. Native of Brasil in woods. This plant is employed by the Brasilians in the treatment of fever, it being considered a powerful febrifuge, and is also regarded as a powerful specific in diseases of the liver.

Greyish Cocculus. Shrub cl.

33 C. ORBICULA'TUS (D. C. syst. 1. p. 523.) leaves orbicular, somewhat cordate, blunt, 5-7-nerved, mucronulate, under surface cinereously-pubescent; male pedicels large, 1-3, racemose at the apex, shorter than the petioles. ♄. ◠. S. Native of Malabar and Tranquebar. Menispérmum orbiculàtum, Lin. spec. 1468. —Rheed. mal. 11. p. 127. t. 62.—Pluk. amalth. 61. t. 384. f. 6. Flowers small, villous on the outside. Perhaps a species of *Cissámpelos*.

Orbicular-leaved Cocculus. Fl.? Clt. 1790. Shrub tw.

34 C. DIVERSIFO'LIUS (D. C. syst. 1. p. 523.) lower leaves cordate, middle ones ovate, upper ones oblong, all of which are truncate obtuse and mucronate; peduncles 1-3-flowered, shorter than the leaves. ♄. ◠. S. Native of Mexico. Menispérmum, spec. nov. Moc. et Sesse, fl. mex. icon. ined. Flowers small, white. Berries fleshy, reddish, almost kidney-shaped. Very like *C. Carolìnus*, but is easily distinguished from it by the tops of the leaves being truncate.

Variable-leaved Cocculus. Shrub tw.

35 C. CAROLI'NUS (D. C. syst. 1. p. 524.) leaves cordate or ovate, entire, obtuse or somewhat 3-lobed, under surface velvety-pubescent; male racemes floriferous from the base, female ones 3-flowered. ♄. ◠. H. but often herbaceous in gardens in cold countries. Native of Carolina, Georgia, and Florida, in woods and hedges. Menispérmum Carolìnum, Lin. spec. 1468. Wendlándia populifòlia, Willd. spec. 2. p. 275.—Pursh. fl. amer. sept. 1. p. 252.—Dill. elth. 223. t. 178. f. 219. Androphìlax scándens, Wendl. obs. p. 38. hort. herrenh. 3. t. 16. Baumgàrtia scándens, Mœnch, meth. 650. Flowers dioecious, but according to Wendland often hermaphrodite. Berries, when ripe, red.

Carolina Cocculus. Fl. Jun. Jul. Clt. 1759. Shrub tw.

36 C. LANUGINO'SUS (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 498.) woolly; leaves broad-ovate, retuse, scarcely cordate at the base; corymbs axillary, crowded, much shorter than the leaves; pedicels somewhat umbellate. ♄. ◡. S. Native of Java.

Woolly Cocculus. Shrub cl.

37 C. PLATIPHY'LLA (St. Hil. fl. bras. 1. p. 59. pl. us. bras. t. 42.) leaves broad, heart-shaped, obsoletely-crenate, tomentose beneath. ♄. ◡. S. Native of Brasil in the northern parts of the province of Minas Geraes, where it is called *Batua*. This plant is employed by the Brasilians in the treatment of intermittent fevers, and it is also regarded by them as a powerful remedy in diseases of the liver.

Broad-leaved Cocculus. Shrub cl.

§ 3. *Leaves ovate, oval, or oblong.*

38 C. THUNBE'RGII (D. C. syst. 1. p. 524.) leaves ovate, obtuse, with a point, under surface villous; lower leaves somewhat triangular, upper ones orbicular; flowers axillary, panicled. ♄. ◠. S. Native of Japan near Nagasaki. Menispérmum orbiculàtum, Thunb. jap. 194. Compare it with Braam. icon. china. t. 2. f. 1.; perhaps the same, or a new species.

Thunberg's Cocculus. Shrub tw.

39 C. VILLO'SUS (D. C. syst. 1. p. 525.) leaves ovate or lanceolate, 3-5-nerved, younger ones villously-tomentose, adult ones pubescent, branchlets pubescent; pedicels few-flowered, length of petioles. ♄. or ♃. ◠. S. Native of Malabar and the East Indies. Plant very villous, having the appearance of a species of *Evólvulus*.

Var. α; leaves oblong-lanceolate.—Pluk. amalth. 62. t. 384. f. 3. Menispérmum myosotoìdes, Lin. spec. 1469.

Var. β; leaves all ovate.—Pluk. amalth. 61. t. 384. f. 7. Menispérmum hirsùtum, Lin. spec. 1469.

Var. γ; upper leaves ovate, lower ones cordate.—Pluk. amalth. 61. t. 384. f. 5.

Villous Cocculus. Pl. tw.

40 C. COTONEA'STER (D. C. syst. 1. p. 525.) leaves oval, quite entire, mucronate, under surface tomentose as well as the branches;

peduncles racemose, longer than the petioles. ♄. ◡. S. Native perhaps of South America. Deless. icon. sel. 1. t. 93. Leaves resembling those of *Cotoneáster vulgàris*, but a little longer. Flowers small.

Cotoneaster-like Cocculus. Shrub cl.

41 C. Tria'ndrus (Coleb. in Lin. soc. trans. 13. p. 64.) leaves ovate-oblong, acuminated, smooth; racemes axillary, one or more together, rather longer than the petioles. ♄. ◠. S. Native of the Malay Islands. Menispérmum triándrum, Roxb. MSS. Flowers numerous, minute, yellow.

Triandrous Cocculus. Shrub tw.

42 C. ovalifo'lius (D. C. syst. 1. p. 426.) leaves oval, entire, mucronate, 3-nerved, smooth; branchlets villous; lower peduncles axillary, scarcely longer than the petioles, upper ones disposed in terminal panicles; pedicels sub-umbellate. ♄. ◠. S. Native of Java and China. Deless. icon. sel. 1. t. 94. Menispérmum ovalifòlium, Pers. ench. 2. p. 628. Berries 2-3, smooth, compressed, orbicular.

Oval-leaved Cocculus. Shrub. tw.

43 C. Fibra'urea (D. C. syst. 1. p. 525.) leaves ovate, acute, quite entire, smooth, on long petioles; racemes oblong, lateral. ♄. ◡. S. Native of Cochin-china and China in woods. Fibràurea tinctòria, Lour. coch. ed Willd. 2. p. 769. Berries small, yellow, not eatable. Taste of whole plant bitter. Roots diuretic. The root and lower part of the stem are esteemed resolvent, deobstruent, and diuretic. The bruised stems afford by boiling a yellow dye, which is not very vivid but lasting, and serves as a basis for Turmerick and Safflower which, though more vivid, are not so durable.

Golden-fibred Cocculus. Shrub cl.

44 C. elli'pticus (D. C. syst. 1. p. 426.) leaves elliptical, obtuse, quite entire, smooth; racemes axillary, in pairs, unequal, much shorter than the leaves. ♄. ◡. S. Native of Senegal. Menispérmum ellípticum, Poir. suppl. 3. p. 657. Flowers small, greenish, disposed in unequal, small racemes.

Elliptical-leaved Cocculus. Shrub cl.

45 C. Lima'cia (D. C. syst. 1. p. 526.) leaves ovate-oblong, acuminated, quite entire, smooth; male flowers almost terminal, crowded, female ones in pairs, axillary. ♄. ◡. G. Native of Cochin-china in woods. Limàcia scándens, Lour. coch. ed Willd. 2. p. 761. Flowers yellowish-green; berries small, smooth, fleshy, acrid, but eatable. The specific name *Lamacia* was applied to this plant by Loureiro, because the fruit resembles the shell of a limacon or snail.

Snail-fruited Cocculus. Fl. cl.

46 C. Ceba'tha (D. C. syst. 1. p. 526.) leaves oval-oblong, mucronate, smooth, shining; peduncles axillary, length of petioles; male ones capitate, female ones 1-flowered. ♄. G. Native of Arabia. Cebàtha, Forsk. ægyp. arab. 171. Menispérmum édule, Vahl. symb. 1. p. 80. Flowers greenish. Berries red, when ripe eatable, but they have an acrid taste, and from them a wine is prepared which is called *Chamr. el Madjnume* in Arabia. *Cebatha* is a name of Arabian origin.

Cebatha Cocculus. Shrub cl.?

47 C. acumina'tus (D. C. syst. 1. p. 527.) leaves ovate, acuminated, quite entire, smooth, somewhat 5-nerved at the base, the rest feather-nerved; racemes axillary, sub-villous, a little longer than the petioles. ♄. ◡. S. Native of the East Indies. Deless. icon. sel. 1. t. 95. Menispérmum acuminàtum, Lam. dict. 4. p. 101. Very like *C. radiàtus* in habit, but the petioles are one half longer. Flowers brownish. Berries obovate, numerous, stipitate, smooth.

Pointed-leaved Cocculus. Shrub. cl.

48 C. radia'tus (D. C. syst. 1. p. 527.) leaves ovate-oblong, acuminated, scarcely cordate, quite entire, feather-nerved, smooth; peduncles racemosely-panicled, 3-times longer than the petioles. ♄. ◡. S. Native of the East Indies. Valli-caniram, Rheed. mal. 7. p. 5. t. 3. Menispérmum radiàtum, Lam. dict. 4. p. 100. Bràunea menispermoìdes, Willd. spec. 4. p. 797. Berries 3-seeded. Sepals and petals 3, with 6 nectariferous scales, in the petals of the male flowers; female ones with 3 styles.

Rayed Cocculus. Shrub tw.

49 C. leptosta'chius (D. C. syst. 1. p. 528.) leaves oval, acuminated, 3-nerved, smooth; racemes axillary, simple, slender, length of leaves. ♄. ◡. S. Native of Timor.

Slender-spiked Cocculus. Shrub cl.

50 C. brachysta'chyus (D. C. syst. 1. p. 528.) leaves ovate, acute, 3-5-nerved, smooth; female racemes axillary, shorter than the petioles. ♄. ◡. S. Native of the island of Timor. Seeds within the berry, arched. Stem hardly scandent.

Short-racemed Cocculus. Shrub cl.

51 C. Dominge'nsis (D. C. syst. 1. p. 528.) leaves oval, acuminated, quite entire, scarcely 3-nerved at the base, smooth; peduncles racemosely-panicled, axillary, slender, somewhat shorter than the leaves, rising from a tubercled villous base. ♄. ◡. S. Native of St. Domingo. Deless. icon. sel. 1. t. 96. Very like *C. brachystàchyus*. Flowers very small.

St. Domingo Cocculus. Shrub cl.

52 C. leæ'ba (D. C. syst. 1. p. 529.) leaves ovate-oblong, blunt, glaucous, somewhat pubescent, on short petioles; branches rather twining. ♄. ◠. G. Native of Upper Egypt. Male plant found about Liblad in the desert near Cairo, female ones rarely, usually far from the males. Leæ'ba, Forsk. fl. ægyp. p. 172. Juss. gen. 285. Menispérmum Leæ'ba, Delile, fl. ægyp. ill. 30. descr.-t. 51. f. 2 and 3. *Leæba* is the name of the plant in Upper Egypt. Calyx yellowish; petals greenish; anther yellow.

Leæba Cocculus. Shrub tw.

53 C. oblongifo'lius (D. C. syst. 1. p. 529.) leaves oblong, 3-nerved, blunt at both ends, mucronate, smooth; peduncles shorter than the leaves, upper ones somewhat racemose, female ones 1-flowered. ♄. ◠. S. Native of Mexico. Menispérmum, nov. spec. Moc. et Sesse, fl. mex. icon. ined. Flowers small, white.

Oblong-leaved Cocculus. Shrub tw.

54 C. triflo'rus (D. C. syst. 1. p. 529.) leaves ovate-lanceolate, acuminated, 3-nerved at the base, quite entire, smoothish; female peduncles axillary, trifid, 3-flowered, length of petioles. ♄. ◡. S. Native of Java. Stems almost erect.

Three-flowered Cocculus. Shrub cl.

55 C. milleflo'rus (D. C. syst. 1. p. 530.) leaves ovate, obtuse, feather-nerved, smooth, shining; panicle terminal, many-flowered, branches spreading, in pairs. ♄. ◡. S. Native of Madagascar. Very like *C. gomphioìdes* but differing in the leaves being larger, more ovate at the base, and less attenuated at the apex.

Thousand-flowered Cocculus. Shrub cl.

56 C. gomphioi'des (D. C. syst. 1. p. 530.) leaves oblong, acuminated, 3-nerved at the base, quite entire, smooth, shining; peduncles axillary, much longer than the leaves. ♄. ◡. S. Native of Madagascar. Berries about the size of a small grape.

Gomphia-like Cocculus. Fl.? Clt. 1820. Shrub cl.

57 C. laurifo'lius (D. C. syst. 1. p. 520.) leaves oblong, acuminated, smooth, shining; peduncles lateral and axillary, branched at the top, rather shorter than the petioles. ♄. ◡. S. Native of Nipaul and Sirinagur. Deless. icon. sel. 1. t. 97. Flowers very small, 8-10, smooth.

Laurel-leaved Cocculus. Fl. Jan. Feb. Clt. 1820. Shrub cl.

§ 4. *Flowers monoecious. (Perhaps a genus.)*

58 C. Epibate'rium (D. C. syst. 1. p. 530.) flowers monoecious; drupes 1-3; leaves oblong, quite entire, smooth. ♄. ◡. S. Native of the island of St. James in the South Sea. Epibatèrium

péndulum, Forst. gen. t. 54. The name is derived from *επι, epi*, upon, and *βαινω, baino*, to walk, in allusion to the plant climbing upon others.

Epibaterium Cocculus. Shrub cl.

59 C. Nephro'ia (D. C. syst. 1. p. 531.) flowers monoecious; drupes 6; leaves ovate, emarginate, smooth. ♄. ◡. G. Native of Cochin-china in woods. Nephròia sarmentòsa, Lour. coch. ed Willd. 2. p. 692. Drupe small, fleshy, somewhat kidney-shaped, 1-seeded. The name is derived from *νεφρος, nephros*, a kidney; because of the form of the fruit.

Kidney-fruited Cocculus. Shrub cl.

Cult. The stove and greenhouse species of this genus will thrive well in a mixture of loam and peat; and cuttings root easily if planted in a pot of light earth, with a hand-glass placed over them, in a moderate heat. The only hardy species, *Cocculus Carolìnus*, may be propagated by parting the roots, which spread out on the side, so that part of them may be cut off every other year; this should be done in the spring, and these should be planted in a light soil in a sheltered situation against a wall, which the branches can be trained to. All the species are climbers or twiners.

VIII. COSCI'NIUM (from *κοσκινον, koskinon*, a little sieve; in allusion to the seeds being pierced). Coleb. in Lin. soc. trans. 13. p. 65.

Lin. syst. *Diœ'cia, Hexándria.* Sepals and petals in threes; male flowers with 6 stamens embracing the base of the pistil, female ones with 3 ovaries. Styles slender. Berries 1-3. Seeds pierced by a large hole. A climbing shrub.

1 C. fenestra'tum (Coleb. Lin. soc. trans. 13. p. 66.) ♄. ◡. S. Native of Ceylon. Menispérmum fenestràtum, Gært. fruct. 1. p. 219. t. 46. f. 5. Wood yellow, bitter. Leaves alternate, cordate, entire, 5-7-nerved, smooth and shining above, very hoary underneath. In the young plants they are frequently peltate; peduncles umbellulate, several from the same bud. Flowers greenish. Berries villous. This plant is in repute among the inhabitants of Colomba, who slice it in thin pieces and swallow it, with the liquid, after steeping it in water several hours. They commend it as an excellent stomachic. It is called in Singalese *Veni-vell-gettah* or *Bang-well-gettah*, in English the *Knotted plant.*

Windowed Coscinium. Fl. Nov. Dec. Clt. 1820. Shrub cl.

Cult. This plant will require plenty of room in the stove where grown, or it will not flower as well as all the stove plants belonging to this natural order. A mixture of peat and loam suits it well, and cuttings will root freely under a hand-glass, in heat.

IX. TILIACO'RA (*Tilia-kora*, the Bengalese name of the plant). Coleb. in Lin. soc. trans. 13. p. 67.

Lin. syst. *Diœ'cia, Hexándria.* Sepals 6. Petals 3. Nectary 6-leaved; male flowers with 6 stamens, alternately shorter, length of corol. Anthers ovate. Female flowers with about 12 ovaries in a circle, each ending in a short subulate style. Berries many, short-pedicelled, clubbed, smooth. Nut 1 or 2-celled. A climbing shrub with ash-coloured bark and alternate, cordate, smooth, shining, pointed, and frequently scolloped leaves. Male racemes frequently compound, female ones simple, few-flowered.

1 T. racemo'sa (Coleb. in Lin. soc. trans. 13. p. 67.) ♄. ◡. S. Native of the coast of Coromandel in hedges and places overrun with bushes. Menispérmum polycárpon, Roxb. mss. Called Bagha *Hind.* Tilia-kora *Beng.* Tiga-mashadi *Teling.* Flowers small, yellow. Berries about the size of a French bean.

Racemose Tilia-kora. Fl. all the year. Clt. 1820. Shrub cl.

Cult. This plant should be propagated and cultivated in the same manner as *Coscínium*, or the stove species of *Cócculus*, which see.

X. ANAMI'RTA (meaning unknown.) Coleb. in Lin. trans. 13. p. 66.

Lin. syst. *Diœ'cia, Monodélphia.* Calyx 2-sepalled. Petals 6, in 2 series, equal. Nectary none. Stamens collected into a column or monodelphous. Anthers numerous, crowded in the form of a globe; female flowers have not been seen, but the berries are as in *Menispérmum;* about the size of a ripe black-heart cherry, and as they are collected in very large pendulous bunches, their appearance is most inviting, but their taste is most abominable.

1 A. paniculata (Coleb. in Lin. soc. trans. 13. p. 66.) ♄. ◡. S. Native of the East Indies. Menispérmum heteroclìtum, Roxb. MSS. Bark cracked, ash-coloured. Leaves alternate, cordate, stalked, entire, smooth, upper surface deep, shining, green, under surface whitish, 3-5-nerved. Panicles rising from the naked woody parts of the stem, drooping. Bracteas 3-fold, 1-flowered, small, caducous.

Panicled-flowered Anamirta. Shrub cl.

Cult. This genus should also be propagated and treated in the same manner as *Coscínium*, which see.

XI. PSE'LIUM (from *ψελιον, pselion*, a bracelet; form of nuts). Lour. fl. cochin. ed Willd. 2. p. 762. D. C. syst. 1. p. 531. prod. 1. p. 100.

Lin. syst. *Diœ'cia, Hexándria.* Sepals and petals disposed in a ternary order in two series. Stamens 6, free. Female flowers with 4 sepals, without petals; ovary 1; stigma 4-cleft. A climbing shrub with axillary flowers.

1 P. heterophy'llum (Lour. fl. coch. ed Willd. 2. p. 762.) ♄. ◡. G. Native of Cochin-china in woods. Leaves alternate, quite entire, smooth, stalked; in the male plant they are somewhat cordate, roundish, with short somewhat divided racemes; in the female plants the leaves are ovate, peltate, acuminated, with racemes somewhat umbellate; pedicels very short.

Various-leaved Pselium. Shrub cl.

Cult. This plant will grow freely in a mixture of loam and peat; and cuttings will root freely in the same kind of soil, under a hand-glass.

XII. CISSA'MPELOS (*κισσος, kissos*, the Greek name of ivy, *αμπελος, ampelos*, a vine; plants like the ivy in the rambling branches, and like the vine in having the fruit in racemes). Lin. gen. no. 1138. Lam. ill. t. 830. Juss. gen. 285. D. C. syst. 1. p. 532. prod. 1. p. 100.

Lin. syst. *Diœ'cia, Monodélphia.* Male flowers with 4 sepals and 4-2, monodelphous stamens, without petals. Female flowers with 1 sepal, and 1 petal in front of the sepal. Ovary 1. Stigmas 3. Drupe oblique, reniform. Abumen none. Embryo long, terete, perapheric. Radicle superior, rising from the base of the stigma. Climbing shrubs with simple, stalked, orbicular, ovate, heart-shaped or peltate leaves, which are mucronulate at the apex. Racemes axillary; male ones often trichotomously-branched, somewhat corymbose, solitary, twin, or tern; bearing many flowers at the top of the pedicels, which are destitute of bracteas, or furnished with very small ones; female racemes simple, elongated, bearing broad alternate bracteas, with the pedicels rising in fascicles from the axillæ of these bracteas.

§ 1. *Female flowers furnished with bracteas. Leaves in both sexes peltate.*

1 C. tropæolifo'lia (D. C. syst. 1. p. 532.) leaves peltate, ovate-orbicular, acutish, pubescent with scattered hairs; racemes axillary, in pairs. ♄. ◠. S. Native of South America, near Cuchero. Deless. icon. sel. 1. t. 98. Flowers dark-purple.

Fruit compressed, orbicular, with their margins marked with rayed stripes.

Tropæolum-leaved Cissampelos. Shrub tw.

2 C. HERNANDIFO'LIA (Willd. spec. 4. p. 861.) leaves peltate, ovate, acuminated, obtuse, mucronate, smooth, with the veins on the under surface pilose. ♄ . ◠. S. Native of the East Indies. Leaves like those of *Hernàndia sonòra*. Flowers unknown. Berries 1-seeded, in corymbs.

Hernandia-leaved Cissampelos. Shrub tw.

3 C. OWARIE'NSIS (Beauv. ined. D. C. prod. 1. p. 100.) leaves peltate, ovate, roundish, awned, somewhat lobed, upper surface smooth, veins on the under surface finely-pubescent; floral leaves kidney-shaped, ciliated. ♄ . ◡. S. Native of the western coast of Africa in the kingdom of Waree.

Waree Cissampelos. Shrub tw.

4 C. PAREI'RA (Lam. ill. t. 830.) leaves peltate, somewhat cordate, ovate-orbicular, under surface silky-pubescent; female racemes longer than the leaves; berries hispid. ♄ . ◡. S. Native of Martinico, Jamaica, St. Domingo, St. Thomas, New Spain, and Brazil in mountain coppices. Ciss. Parèira, var. *a*, Lin. spec. 1473. Swz. obs. 380. t. 10. f. 5. Caapèba Marcgr. bras. 24. icon. Piso bras. 94. icon. The juice of this tree, according to Piso, is a famous remedy against the bite of serpents. The leaves applied whole or bruised to a wound cures it very effectually. The root is the true *Parèira bràva* of the shops, it is a bitter-sweet diuretic, and is much used in infusion or powder, especially in ischuria, urinary calculi, jaundice, gout, and phlegmatic diseases. See Geoffroy, act. ac. par. 1710. p. 57. Lochner, diss. par. br. norimb. 1719. Murray. app. med. 1. p. 498. Woodv. med. bot. 2. p. 227. t. 82. It is to be suspected that the roots of many plants belonging to this natural order are used in the same manner as this plant in various regions, and have the same qualities, and are confused under the same name in commerce. The name *Pareira-brava* signifies a wild vine in Portuguese.

Pareira-brava Cissampelos. Fl. Ju. Jul. Clt. 1733. Shrub cl.

5 C. GUAYAQUILE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 67.) leaves peltate, somewhat kidney-shaped, hairy-pubescent, hoary on the under surface; male cymes axillary, in pairs, shorter than the petioles. ♄ . ◡. S. Native of Guayaquil. Female plant unknown. Perhaps it is only a variety of *Ciss. Parèira*.

Guayaquil Cissampelos. Shrub cl.

6 C. ARGE'NTEA (H. B. et Kth. nov. spec. amer. 5. p. 67.) leaves peltate, roundish, kidney-shaped, emarginate at the apex, upper surface pubescent, under surface silky-tomentose, and silvery; male cymes axillary, in pairs, shorter than the petioles. ♄ . ◡. S. Native of South America on the banks of the river Magdelena near Mompox. Female plant unknown. Perhaps also a variety of *Ciss. Parèira*.

Silvery-leaved Cissampelos. Shrub cl.

7 C. MICROCA'RPA (D. C. syst. 1. p. 534.) leaves somewhat peltate and kidney-shaped, orbicular, under surface tomentose; berries at first pubescent, afterwards smooth. ♄ . ◡. S. Native of the West Indies in Jamaica, Martinico, St. Domingo. Ciss. Parèira, var. *β*, Lin. spec. 1473. Very like *Ciss. Pareira*, but differing as above.

Small-fruited Cissampelos. Clt. 1823. Shrub cl.

8 C. HETEROPHY'LLA (D. C. syst. 1. p. 534.) stem leaves peltate, orbicular, cordate at the base, under surface pubescent; floral leaves cordate-reniform, velvety on both surfaces. ♄ . ◡. S. Native of New Spain about San Blas. Male flowers small, hispid, 4-sepalled, female ones unknown.

Variable-leaved Cissampelos. Shrub cl.

9 C. DI'SCOLOR (D. C. syst. 1. p. 534.) leaves peltate, broad-ovate, truncate at the base, acuminated at the apex, 7-9-nerved, under surface pubescent, whitish, upper surface smooth; male peduncles 2-3 together, 3-times shorter than the petioles. ♄ .? ◡. S. Native of the Molucca islands. Male flowers small, on corymbose branched peduncles; female ones unknown.

Two-coloured-leaved Cissampelos. Shrub cl.

10 C. HIRSU'TA (Buch. D. C. syst. 1. p. 535.) leaves peltate, ovate-orbicular, almost veinless. ♄ . ◡. G. Native of Nipaul. Male flowers very minute, villous; female ones unknown.

Hairy Cissampelos. Fl.? Clt. 1820. Shrub cl.

11 C. MAURITIA'NA (Petit-Th. in journ. bot. 1809. 2. p. 65. t. 3 and 4.) leaves cordate-orbicular, pubescent-villous; those of the male plants peltate; male racemes axillary, in pairs or numerous. ♄ . ◡. S. Native of the Mauritius, frequent in woods. Ciss. Pareìra var. *γ*, Willd. spec. 4. p. 861. Ciss. pareiroìdes, D. C. ess. prop. pl. ed. 2. p. 78. This plant is called *Pareìra-bràva* in the Mauritius; it possesses the same medical qualities as the true *Pareira-brava* of Brasil, although in a lesser degree. See *Ciss. Pareira*. This plant differs from *Ciss. Pareìra* in the branches being hispid, not smooth.

Mauritian Cissampelos. Fl.? Clt. 1820. Shrub cl.

12 C. GLABE'RRIMA (St. Hil. fl. bras. 1. p. 57.) stem herbaceous, twining; leaves peltate, ovate, acute, rounded at the base; male flowers corymbose and racemose; divisions of the calyx oblong-linear; corolla campanulate, 4-lobed. ♄ . ◠. S. Native of Brasil in the provinces of Rio Janeiro and Minas Geraes, Cipo de Cobras Marcgr. bras. 25-26, with a figure. Piso, bras. 94, with a figure. The stems and the leaves of this plant have a bitter taste and stimulating odour, like that of *Tropæolum*. The whole plant is employed to cure the bite of snakes.

Very-smooth Cissampelos. Pl. tw.

13 C. ORINOCE'NSIS (H. B. et Kth. spe. amer. 5. p. 68.) leaves scarcely peltate, deltoid, cordate, obtuse, upper surface puberulous, under surface silky-pubescent; fructiferous racemes hardly exceeding the petioles in length; fruit tubercled, pilose. ♄ . ◡. S. Native in shady woods near the river Orinoco. Very like *Ciss. tamoìdes*.

Orinoco Cissampelos. Shrub cl.

§ 2. *Female flowers furnished with bracteas. Leaves not peltate.*

14 C. TOMENTO'SA (D. C. syst. 1. p. 535.) leaves orbicular, cordate, tomentose on both surfaces, as well as petioles and calyx; male peduncles axillary, many together, shorter than the leaves. ♄ . ◠. S. Native near Campechy, in fields. Male flowers villous, small; female ones unknown.

Tomentose Cissampelos. Shrub cl.

15 C. TAMOÌDES (Willd ined. D. C. sept. 1. p. 536. St. Hil. fl. bras. 1. p. 55.) leaves heart-shaped, pubescent; obtuse, but acute in the recesses; 5-nerved at the base; male racemes longer than the leaves. ♄ . ◠. S. Native of Brasil, in the province of Minas Geraes. Very like *Ciss. Pareira*. Male flowers small; petal of the female flower rather orbicular, villous beneath.

Tamus-like Cissampelos. Shrub tw.

16 C. CONVOLVULA'CEA (Willd. spec. 4. p. 863.) leaves heart-shaped, acuminated, under surface pubescent, upper surface smooth; female racemes a little longer than the petioles. ♄ . ◠. S. Native of the East Indies. Female flowers small, male ones and fruit unknown.

Convolvulus-like Cissampelos. Shrub tw.

17 C. TRI'LOBA (Spreng. neue. entd. 2. p. 152.) leaves cordate, somewhat 3-lobed, pubescent, denticulately-ciliated, 5-nerved; female peduncles axillary, aggregate. ♄ . ◡. S. Native of Brasil. Bracteas ovate, very villous on the outside, 10-nerved, denticulately-bearded. Perhaps this plant is the female of *Ciss. tamoìdes*.

Three-lobed-leaved Cissampelos. Shrub cl.

18 C. littora'lis (St. Hil. fl. bras. 1. p. 54.) Stem pubescent; leaves cordate, retuse at the apex, quite entire, tomentose beneath; male racemes solitary or twin, hairy-tomentose, lower ones much longer than the leaves; corolla cup-shaped, divisions lanceolate acute. ♄. S. Native of Brasil, in the province of Minas Geraes, on the banks of rivers. The taste of the root of this plant is very stimulant.

Sea-shore Cissampelos. Shrub cl.

19 C. Caape'ba (Lin. spe. 1473.) leaves somewhat orbicular, cordate at the base, 7-nerved, rather pubescent; female racemes length of the petioles. ♃. ◡. S. Native of St. Domingo.—Plum. ed. Burm. t. 67. f. 2. Berries small, kidney-shaped, hardly compressed, rather hispid. Male flowers unknown. *Caapeba* is the name of the plant in Brasil.

Caapeba Cissampelos. Fl. Jun. Jul. Clt. 1773. Pl. cl.

20 C. orbicula'ta (D. C. syst. 1. p. 537.) leaves orbicular, cordate at the base, under surface villous, upper surface pubescent; male peduncles generally in threes, shorter than the petioles. ♄. ◡. S. Native of the East Indies. Ciss. tetrándra, Roxb. ined. in herb. Lamb. Leaves similar to those of *Menispérmum orbiculàtum*. Berries small, somewhat compressed, hairy. Flowers in crowded corymbs, small, villous.

Orbicular-leaved Cissampelos. Shrub cl.

21 C. crena'ta (D. C. syst. 1. p. 537.) leaves ovate-orbicular, nearly sessile, 7-nerved, obtuse, mucronulate, crenately-sinuated, rather tomentose; female racemes in pairs, longer than the leaves. ♄. ◡? S. Native of Brasil. Fruit ovate-orbicular, pubescent, reticulately-nerved, somewhat compressed.

Crenate-leaved Cissampelos. Shrub cl.

22 C. austra'lis (St. Hil. fl. bras. 1. p. 54.) leaves cordate, emarginate, mucronate, pubescent; racemes of the female flowers solitary or twin; stem suffruticose, twining. ♄. ◠. S. Native of Brasil. Stem smoothish; peduncles and axis pubescent. Drupe ovate-orbicular, compressed.

Southern Cissampelos. Pl. tw.

23 C. monoi'ca (St. Hil. fl. bras. 1. p. 55.) leaves cordate, obtuse, rather pilose, puberulous beneath; flowers racemose, monoecious. ♄. ◡. S. Native of Brasil, in the province of St. Paul. Stem rather pubescent. Drupes globose, scarlet, rather compressed.

Monoecious Cissampelos. Fl. Feb. Shrub cl.

24 C. gra'cilis (St. Hil. fl. bras. 1. p. 55.) leaves cordate, acutish, pubescent; flowers small, corymbose, and racemose; peduncles pubescent. ♄. ◠. S. Native of Brasil, on the banks of the Uruquay. Stem slender, twining. Corolla cup-shaped.

Slender Cissampelos. Shrub tw.

25 C. ovalifòlia (D. C. syst. 1. p. 537.) leaves oval, acutish, coriaceous, under surface hoary, upper surface smooth; male racemes usually twin, hispid, 3-times longer than the petioles. ♄. ◡? S. Native of Brasil. Flowers small, dark purple; villous on the outside; female flowers unknown. Probably the same as No. 34.

Oval-leaved Cissampelos. Shrub cl.

26 C. ova'ta (Poir. dict. 5. p. 11.) leaves ovate, obtuse, mucronate, upper surfaee smooth, under surface pubescent on the nerves; female racemes longer than the petioles; bracteas subulate. ♄. ◡. S. Native of the East Indies. Berries kidney-shaped, orbicular, somewhat compressed, smooth, about the size of a pea.

Ovate-leaved Cissampelos. Shrub cl.

27 C? acumina'ta (D. C. syst. 1. p. 538.) leaves oval-oblong, acuminated, smooth, 3-nerved at the base; male peduncles axillary, racemosely panicled, one half shorter than the leaves. ♄. ◡. S. Native of the East Indies. Female flowers unknown, male ones very small.

Acuminated-leaved Cissampelos. Shrub cl.

28 C? Cape'nsis (Thunb. prod. 110.) leaves ovate, bluntish, smooth, on very short petioles; racemes much branched, hardly longer than the petioles. ♄. ◠. G. Native of the Cape of Good Hope. Stems frutescent, twining, branched, somewhat velvety. Petioles short, pubescent. Flowers small, tomentose.

Cape Cissampelos. Fl.? Clt. 1775. Shrub tw.

29 C.? hu'milis (Poir. dict. 5. p. 11.) leaves ovate, obtuse, truncate at the base, smooth, stalked with the axillæ woolly. ♄. 7. Native of Cape of Good Hope. Flowers small, tomentose. M. Decandolle has two specimens, the one a garden, and the other a native specimen; the first is nearly erect, the second is twining; and he thinks they may be different species, and that *Ciss. Capénsis hùmilis* and *Calcarífera* may form another genus.

Dwarf-Cape Cissampelos. Fl.? Clt. 1817. Shrub tw.

30 C.? calcari'fera (Burch. cat. no. 1795.) leaves elliptical-oblong, blunt at both ends, on very short petioles, cinereously-pubescent, and furnished with a spur at the external base of petiole; male flowers glomerate, and nearly sessile in the axillæ of the leaves. ♄. G. Native of Cape of Good Hope. Ciss. fruticòsa Thunb. prod. 110? Lin. fil. suppl. 432? Stem erect, branched, never twining nor climbing.

Spur-bearing Cissampelos. Shrub 2 feet.

31 C.? laurifo'lia (Poir. dict. 5. p. 11.) leaves ovate-oblong, obtuse, quite smooth; petioles short, thick; female racemes short; fruit large. ♄. ◡. S. Native of the Island of St. Thomas, in the West Indies. Fruit ovate, narrowed at the base, pulpy, wrinkled, about the size of a nut, when dry of a blackish brown colour.

Laurel-leaved Cissampelos. Shrub tw.

32 C. angustifo'lia (Burch. cat. no. 1717. ex trav. 1. p. 389.) leaves broad-linear, roundish at the apex, often emarginate; stem twining. ♄. ◠. G. Native of the Cape of Good Hope.

Narrow-leaved Cissampelos. Shrub tw.

§ 3. *Stems simple, twiggy, erect, suffruticose.*

33 C. subtriangula'ris (St. Hil. fl. bras. 1. p. 51.) stems suffruticose, erect, simple, downy; leaves orbiculately-triangular, somewhat truncate at the base, sides rounded, obtuse at the apex, pubescent above, and downy beneath; petal of the female flower rather orbicular. ♄. S. Native of Brasil. Stems solitary or numerous. Racemes shorter than the leaves, bracteate, many-flowered. Style trifid. Drupe elliptically globose.

Subtriangular-leaved Cissampelos. Pl. I½ to 2 feet.

34 C. ovalifo'lia (St. Hil. pl. usu. bras. t. 34. fl. bras. 1. t. 51.) stems suffruticose, erect, simple, downy; leaves on short stalks, ovate, bluntish at the apex, somewhat repand, tomentose on both surfaces, or only beneath, as well as the petioles and female racemes; petals of female flower rather villous beneath; male corymbs usually tern. ♄. S. Native of Brasil, where it is called *Orelha de Onca*. The root of this plant is acrid, bitter, and is a powerful febrifuge, and the inhabitants of Brasil make a decoction of it, which they drink with success in intermittent fevers.

Var. α, cinèreo-víridis (St. Hil. l. c.) leaves cordate at the base, tomentose on both surfaces, greenish grey, paler beneath. Native in the province of Minas Geraes.

Var. β, ruféscens (St. Hil. l. c. 52.) Stems rufescent, and are as well as the leaves much less tomentose above than *var. α*, less orbicular, and scarcely cordate at the base. Native in the province of Minas Geraes.

Var. γ, cineráscens (St. Hil. l. c. p. 52.) leaves a little larger, scarcely cordate at the base. Native of Para.

Oval-leaved Cissampelos. Shrub 2 feet.

35 C. commu'nis (St. Hil. fl. bras. 1. p. 52. t. 11.) stem suffruticose, erect, simple, tomentose; leaves cordate, acute, quite entire,

pubescent above and tomentose beneath, of a hoary-grey colour, on short stalks; male flowers racemose, male corolla cup-shaped. ♄. S. Native of Brasil, in the province of St. Paul. Racemes solitary in the axillæ of the leaves, rarely twin or tern. Petal about one half shorter than the calyx.

Common Cissampelos. Fl. Oct. Shrub 1½ foot.

36 C. veluti'na (St. Hil. fl. bras. 1. p. 52.) stem suffruticose, erect, simple, woolly; leaves ovate, obtuse, velvety; male corymbs axillary, hairy, in fours; male corolla cup-shaped, obsoletely 4-lobed, pilose on the outside. ♄. S. Native of Brasil, in the province of St. Paul. Stem solitary or numerous. Flowers greenish.

Velvety Cissampelos. Fl. Oct. Shrub 2 feet.

37 C. suborbicula'ris (St. Hil. fl. bras. 1. p. 53.) stem suffruticose, erect, simple, tomentose; leaves somewhat orbicular, hardly repand, pubescent above and tomentose beneath on longish petioles; male corymbs in twos or fours, without bracteas; corolla cup-shaped, 4-lobed, rather pilose. ♄. S. Native of Brasil, in the province of Minas Geraes.

Var. β, sublanàta (St. Hil. l. c. p. 53.) stems rather woolly; leaves somewhat cuspidate.

Suborbicular-leaved Cissampelos. Shrub 2 feet.

§ 4. *Female racemes bractless.*

38 C. andromo'rpha (D. C. syst. 1. p. 539.) leaves somewhat heart-shaped, quite smooth, membranous, entire, mucronate; female peduncles aggregate, branched, bractless. ♄. ◡. S. Native of Cayenne. Deless. icon. sel. 1. t. 99. A very distinct species, which should perhaps be made a distinct genus.

Andromorphous Cissampelos. Fl.? Shrub cl.

39 C. ebractea'ta (St. Hil. pl. usu. bras. t. 35. fl. bras. 1. p. 53.) stem suffruticose, erect, simple, downy; leaves orbicularly-rhomboid, scarcely repand, pubescent above, downy beneath; female flowers axillary in fascicles, bractless. ♄. S. Native of Brasil, in the province of Minas Geraes, where it is called by the inhabitants *Orelha de Onca*. The roots of this plant are considered a specific against the bite of serpents.

Bractless Cissampelos. Shrub 2-3 feet.

Cult. All the species of this genus will grow freely in a mixture of loam and peat; and cuttings root freely, if planted in a pot of the same kind of earth, with a hand-glass placed over them, in heat. The species are either stove or green-house, and the greater part of them require a great deal of room to spread, before they can be got to flower.

XIII. MENISPE'RMUM (from μηνη, *mene*, the moon, and σπερμα, *sperma*, a seed; in allusion to the half-moon, or kidney-shape of the fruit.) Tourn. mem. acad. par. 1705. p. 237. Lam. ill. t. 824. D. C. syst. 1. p. 539. prod. 1. p. 102.

Lin. syst. *Diœ'cia, Polyándria.* Sepals and petals disposed in a quaternary order, in two or three series; male flowers with 16-20 stamens; female flowers with 2-4 ovaries. Drupe baccate, roundish, kidney-shaped, 1-seeded. Climbing shrubs with alternate peltate or cordate smoothish leaves; peduncles axillary or supraxillary. Male and female peduncles rather dissimilar. Flowers small, greenish-white.

1 M. Canade'nse (Lin. spec. 1468.) leaves peltate, smoothish, somewhat cordate, roundish, angular; angles bluntish, terminal one abruptly awned, mucronate, racemes solitary, compound; petals 8. ♄. ◡. H. Native of North America among bushes on the banks of rivers, and on fertile declivities, from Canada to Carolina. Sims, bot. mag. t. 1910. Schkuhr. handb. 3 t. 337. M. Canadénse *var. a*, Lam. dict. 4. p. 95. ill. t. 824. M. angulàtum, Mœnch. meth. 277. Flowers small, yellowish-green. Berries black.

Var. β, lobàtum (D. C. syst. 1. p. 540.) angles of leaves acutish. M. Virgínicum, Lin. spec. 1468. Flowers small, greenish-white. Berries black.—Dill. elth. 223. t. 178. f. 219.

Canadian Moon-seed. Fl. June, Aug. Clt. 1691. Shrub cl.

2 M. Da'uricum (D. C. syst. 1. p. 540.) leaves peltate, smooth, cordate, angular; angles acute, terminal one acuminated, hardly mucronate; racemes in pairs, capitellate. ♄. ◡. H. Native of Dauria, on rocky hills, at the river Chilca, not far from the town of Nertchinsk, and also about Ouroulga. Deless. icon. sel. 1. t. 100. Trílophus ampelisàgria, Fisch in. hort. gorenk.—Gmel. Sib. 3. p. 108. M. Canadénse, *var. β*, Lam. dict. 4. p. 95. Very like *M. Canadénse*, but of smaller stature. Flowers yellowish.

Daurian Moon-seed. Fl. Jun. Jul. Clt. 1818. Shrub cl.?

3 M. smilaci'na (D. C. syst. 1. p. 541.) leaves peltate, smoothish, cordate-roundish, bluntly angular, under surface glaucous; racemes simple; petals 4. ♄. ◡. H. Native of Carolina. Cissámpelos smilacìna, Lin. spec. 1473. Jacq. coll. 4. p. 128. icon. rar. 3. t. 629.—Cat. carol. 1. p. 51. t. 51. Female flowers unknown.

Smilax-like Moon-seed. Fl. Jul. Aug. Clt. 1776. Shrub cl.

4 M. Lyo'ni (Pursh. fl. amer. sept. 2. p. 371.) leaves cordate, palmately-lobed, on long petioles; racemes simple; flowers with 6 petals and 12 stamens. ♃. ◡. H. Native of Kentucky and Tennessee. Stems 8 or 10 feet long. Leaves broad. Berries large, black, 1-seeded. Flowers purple.

Lyon's Moon-seed. Fl. July, August. Clt. 1822. Shrub cl.

†*A species not sufficiently known.*

5 M.? acu'tum (Thunb. jap. 193.) leaves cordate, angular, behind, acuminated at the apex, smooth. ♄. ◡? H. Native of Japan, about Nagasaki. Lam. dict. 4. p. 96. Flowers unknown.

Acute-leaved Moon-seed. Shrub cl.?

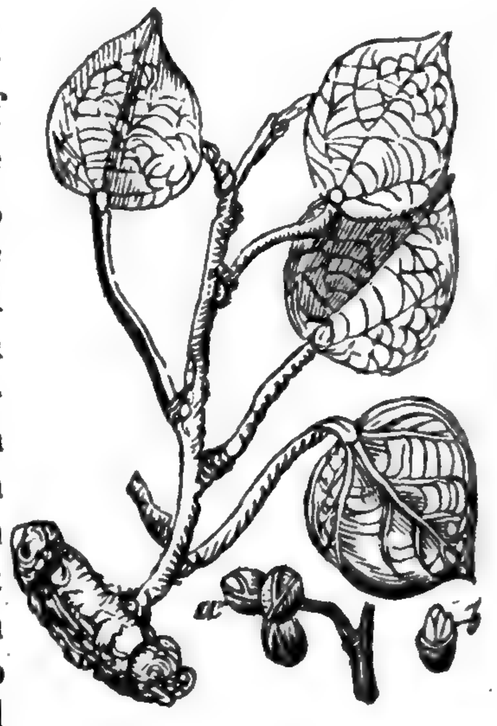
Cult. As the species are all hardy climbing plants, they may be used for covering bowers or trellis-work; they are readily increased by dividing the plants at the roots, or by cuttings planted in a sheltered situation, early in the spring. Seeds vegetate freely.

XIV. ABU'TA. (*Abouta*, or *Abuta*, is the Caribbean name of this tree in Guiana.) Barrer. fr. æq. 1. Aubl. guian. 1. p. 618. Juss. gen. 286. D. C. syst. 1. p. 542. prod. 1. p. 103.

Lin. syst. *Diœcia, Monodélphia.* Flowers unknown. Berries 2 or 3, rising from the same receptacle, (f. 30. *a.*) large, ovate, dry, somewhat compressed, 1-seeded, (f. 30. *b.*) with a brittle covering. Large climbing shrubs, with ovate feather-nerved leaves, the two lower nerves approximate.

1 A. rufe'scens (Aubl. guian. 1. p. 618. t. 250.) leaves ovate, acute, entire, under surface greyish-velvety or brownish. ♄. ◡. S. Native of Cayenne and Guiana, in woods. Male flowers grey-velvety on the outside, dark-purple on the inside; female ones unknown. Bark brown; wood reddish. A ptisan is prepared from the branches, which is used by the natives of Cayenne against obstruction of the liver, to which they are often subject: the ordinary dose is a drachm boiled or infused in a pint of water: The same plant is called by them *White Parèira-brava.* There are also varieties with yellow branches and red branches, called *Yellow Parèira-brava* and *Red Pareira-brava*, and perhaps the roots of this are confused with those of the true *Parèira-bràva* of Brasil (*Cissámpelos Parèira*), and sold in shops for them (f. 30.)

FIG. 30.



Rufescent Abuta. Fl. March, April. Clt. 1822. Shrub cl.

2 A. CA'NDICANS (Rich. ined. in herb. Juss. D. C. syst. 1. p. 543.) leaves ovate, acuminated, somewhat crenated or lobulate, under surface smooth, white. ♄. ◡. S. Native of Cayenne, where it is called *Liane amere*, from its bitter taste. The plant probably possesses the same medical qualities as the *A. ruféscens* and *Cissámpelos Parèira*. The flowers are unknown.

Whitened-leaved Abuta. Shrub cl.

Cult. The species of this genus will grow freely in a mixture of loam and peat; and cuttings will strike root readily, if planted in a pot of sand, with a hand-glass placed over them, in heat.

XV. TRICHO'A (from θριξ, τριχος, *thrix*, *trichos*, hair; in allusion to hair-like barren filament both in male and female flowers). Pers. ench. 2. p. 634. D. C. prod. 1. p. 103. Bátschia, Thunb. nov. act. ups. 5. p. 120. t. 2.

LIN. SYST. *Diœ'cia*, *Hexándria*. Flowers dioecious. Calyx 3-sepalled. Petals 3, coriaceous, villous, approximate at the middle, but reflexed at the top. Male flowers with 6 stamens inserted in the disk, the 3 outer ones sterile, alternating with the petals; the 3 central ones monadelphous, fertile. Female flowers with 6 sterile stamens, their filaments bimaculate at the apex. Carpels 3, drupaceous, coriaceous, oblong, villous. Seed biplicate. Climbing shrubs with alternate simple leaves.

1 T. RACEMO'SA (Pers. ench. 2. p. 634.) racemes axillary, solitary, few-flowered. ♄. ◡. S. Native about Mariquita, in South America. Bátschia racemòsa, Thunb. l. c. p. 123. t. 2. f. 1.

Racemose-flowered Trichoa. Shrub cl.

2 T. CONFE'RTA (Pers. ench. 2. p. 634.) spikes axillary, solitary; flowers crowded. ♄. ◡. S. Native of South America, with the first. Bátschia conférta, Thunb. l. c. t. 2. f. 2.

Crowded-flowered Trichoa. Shrub cl.

Cult. The species of Trichoa will thrive in a mixture of loam and peat; and cuttings will root freely planted in the same kind of mould, with a hand-glass placed over them, in heat.

XVI. AGDE'STIS. (Agdestis, in mythology, a hermaphrodite, descended from Jove and the Agde rock. The name is applied to this genus because it is the only one in the order *Menispermàceæ* with hermaphrodite flowers, therefore it is a monster in the order.) Moc. et Sesse, fl. mex. icon. ined. D. C. syst. 1. p. 543. prod. 1. p. 103.

LIN. SYST. *Polyándria*, *Tetragýnia*. Flowers hermaphrodite. Sepals 4. Petals wanting. Stamens 24; anthers bifid at both ends, adhering by their middle. Carpels 4, joined into one 4-furrowed ovary. Stigmas 4, spreading, somewhat reflexed at the apex. A climbing smooth shrub, with alternate heart-shaped stalked leaves, and trifid corymbose peduncles, the lower ones axillary, and the upper ones approximating into a thyrse.

1 A. CLEMATI'DEA (Moc. et Sesse, fl. mex. icon. ined.) ♄. ◡. S. Native of New Spain. Flowers rufescent, about the size of those of *Clématis Flámmula*. Fruit unknown.

Clematis-like Agdestis. Shrub cl.

Cult. This plant will thrive well in a mixture of loam and peat; and cuttings will root under a hand-glass, in a moderate heat.

XVII. CLY'PEA (from *clypeus*, a buckler; in allusion to the buckler-formed filament.) Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 499. Stephània Lour. Spreng. but not of D. C.

LIN. SYST. *Diœ'cia*, *Monándria*. Flowers dioecious. Male flowers with 6-9 unequal sepals and 3 petals. Stamen 1; filament peltate, crowned by an annular anther. Female flowers with 3-4-6 sepals, with the same number of petals. Ovary 1, crowned by 3-5 acute stigmas. Berry superior, obovate or kidney-shaped, 1-seeded. Plants climbing or twining, shrubby or herbaceous, with tuberous or creeping roots. Leaves of all peltate. This genus approaches near to *Cissámpelos*, but the structure of the flowers and stamens are very different.

1 C. DI'SCOLOR (Blum. l. c) leaves peltate, ovate, bluntish, mucronate, hoary-tomentose beneath; heads of flowers disposed in axillary umbels. ♄ ◠. S. Native of Java.

Two-coloured-leaved Clypea. Shrub tw.

2 C. VENO'SA (Blum. l. c.) leaves peltate, ovate, bluntish, mucronate, smooth, somewhat truncate at the base, whitish beneath, but with the veins purplish; umbels elongated, compound, axillary, solitary. ♄. ◠. S. Native of Java.

Veined Clypea. Shrub tw.

3 C. CAPITA'TA (Blum. l. c.) leaves peltate, ovate, acute, membranous, smooth; racemes axillary, solitary; flowers crowded on a fleshy receptacle. ♄. ◠. S. Native of Java.

Headed-flowered Clypea. Shrub tw.

4 C. ACUMINATI'SSIMA (Blum. l. c.) leaves peltate, ovate-oblong, acuminated, somewhat coriaceous, smooth; racemes axillary or lateral, solitary; flowers crowded on the receptacle. ♄. ◠. S. Native of Java.

Very-acuminated-leaved Clypea. Shrub tw.

5 C. TOMENTO'SA (Blum. l. c.) the whole plant tomentose; leaves roundish obtuse, mucronate; corymbs dichotomous, axillary, solitary, shorter than the leaves. ♄. ◠. S. Native of Java.

Tomentose Clypea. Shrub tw.

6 C. CORYMBO'SA (Blum. l. c.) leaves peltate, roundish, acute, repand, smooth; flowers umbellate, axillary. 4. ◠. G. Native of Cochin-china and Java. Stephània rotúnda, Lour. Root tuberous. Stem simple.

Corymbose-flowered Clypea. Pl. tw.

7 C. LO'NGA; leaves peltate oblong, smooth; flowers capitate, axillary. 4. ◠. G. Stephània lónga, Lour. Root filiform, creeping.

Long-rooted Clypea. Pl. tw.

Cult. The species of *Clypea* will thrive in a mixture of loam and sand; and cuttings will root, if planted in a pot of sand, with a hand-glass placed over them, in a moderate heat.

Allied Genera.

XVIII. MENISCO'STA (μηνισκος, *meniskos*, a little moon; in allusion to the shape of the seed.) Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa, 1. p. 499.

LIN. SYST. *Polygàmia*, *Monœ'cia*. Flowers polygamous, male ones with a small 4-5-cleft calyx, and 4-5 petals, disposed in two series. Stamens 5, broad, opposite the petals, and glued to them at the base. Urceolus membranous, short, 5-toothed, girding the base of the pistillum. Ovary didymous, sterile. Female flowers with the corolla, calyx, and stamens, as in the male ones: ovary didymous, crowned by two bluntish stigmas. Drupes baccate, 2, (or, from abortion, solitary), kidney-shaped, compressed, 1-seeded. A climbing smooth shrub, with oval-oblong mucronated leaves, and axillary panicles of flowers.

1 M. JAVA'NICA (Blum. l. c.) ♄. ◡. S. Native of Java.

Java Meniscosta. Shrub cl.

Cult. A mixture of loam, peat, and sand will suit this plant well; and cuttings planted in the same kind of soil, will root, if placed under a hand-glass, in heat. †

XIX. JO'DES (ωδης, *jodes*, violaceous, colour of fruit). Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 499.

LIN. SYST. *Diœ'cia*, *Monadélphia*. Flowers dioecious; male ones with a 6-parted calyx and corolla, and 5 stamens, which are monadelphous at their base, and alternating with the petals.

Anthers 2-celled, opening on the side; they are inserted on the top of the filaments. Female flowers with a corolla and calyx as in the male ones, but they are usually 6-cleft. Ovary simple, ovate-globose, 1-seeded. Stigma sessile, orbicular, radiately emarginate. Fruit unknown. A climbing shrub, with almost opposite oval mucronate leaves, which are tomentose on the ribs beneath; and axillary, rather dichotomous corymbs of flowers.

1 J. ova'lis (Blum. l. c.) ♄. ⌣. S. Native of Java.
Oval-leaved Jodes. Shrub cl.
Cult. See *Meniscósta*.

Order. VII. BERBERI'DEÆ, (plants agreeing with Bérberis in many important characters.) Vent. tabl. 3. p. 83. D. C. fl. fr. ed. 3. vol. 4. p. 627. syst. 2. p. 1. prod. 1. p. 105.

Sepals 3-4, but usually 6, (f. 31. *c.*) in two series, deciduous, furnished with petal-like scales on the outside (f. 31. *c.*) Petals equal in number with the sepals, rarely double that number, (f. 31. *a.* f. 32. *b.*), and opposite them, usually furnished with a gland or a scale at the base on the inside of each. Stamens equal in number with the petals and opposite them; anthers adnate, 2-celled, opening from the base to the apex by a small somewhat elastic valve. Ovary solitary, crowned by the rather orbicular stigma. Fruit 1-celled, baccate, or capsular, (f. 31. *c.*). Seeds erect, usually fixed to the bottom of the lateral placenta, rarely solitary, usually 2-3, ovate or globose. Albumen fleshy, usually rather corneous. Embryo straight, slender, with the radicle more or less thickened at the point, and flat cotyledons. Smooth shrubs or perennial herbs, with simple or compound feather-nerved leaves. Flowers yellow or white, usually disposed in racemes or panicles. This order differs from all those belonging to *Thalamiflòræ* in the singular dehiscence of the anthers. The species are all inhabitants of Europe, Asia, North and South America, usually of the temperate zones; but when found within the tropics, they are always at a considerable height on the mountains.

The seeds retain their vegetative power a considerable time, therefore they are easily imported in a living state from any part of the world. The medicinal qualities of this order are scarcely known. The roots are usually bitter and astringent. Bark purgative, taken in the form of a decoction in ale or other liquors. The berries and leaves in all the species of *Bérberis* and *Mahònia* are acid and astringent; the latter quality is particularly strong in the wood and bark: these last parts afford a yellow colour, which will dye linen and cotton, with the assistance of alum.

Synopsis of the Genera.

§ I. *Shrubs.*

1 Be'rberis. Sepals 6, furnished on the outside with 3 scales. Petals 6, with 2 glands on the inside of each at the base. Stamens toothless. Berries 2-3-seeded.

2 Maho'nia. Sepals 6, furnished on the outside with 3 scales, (f. 31 *c.*). Petals 6, (f. 31. *a.*) without glands on the inside. Stamens furnished with a tooth on each side at the top of the filament, (f. 31. *b.*) Berries 3-9-seeded.

3 Nandi'na. Sepals 6, furnished on the outside, with numerous scales, which are disposed in many series. Petals 6, without glands on the inside. Berries 2-seeded.

§ II. *Perennial herbaceous herbs.*

4 Leo'ntice. Sepals 6, (f. 32. *a.*) naked on the outside. Petals 6, (f. 32. *b.*) bearing a scale at the base of each on the inside. Capsules bladdery, (f. 32. *c.*) 2-4-seeded.

5 Epime'dium. Sepals 4-8, furnished with 2 bracteas on the outside. Petals 4-6, furnished with a two-coloured appendage on the inside of each. Capsule in the form of a silicle, many-seeded.

6 A'chlys. Sepals and petals wanting. Flowers naked, disposed in a dense spike. Stamens numerous. Stigma dilated, hence concave.

7 Diphylle'ia. Sepals 3, naked outside. Petals 6, naked inside. Berry 2-3-seeded.

I. BE'RBERIS. (*Berberys* is the Arabic name of the fruit, and *βερβερι* in Greek signifies a shell: many authors believe that it is originally derived from this word, because the leaves are hollow, like a shell; and Bochart says, the word *βερβερι* is derived from the Phœnician word *barar*, which expresses the brilliancy of a shell; alluding to their shining leaves.) Lin. gen. no. 442. Juss. gen. 286. Lam. ill. t. 253. Schreb. gen. no. 595. Gært. fruct. 1. p. 200. t. 42. f. 6. D. C. syst. 2. p. 4. prod. 1. p. 105.

Lin. syst. *Hexándria, Monogýnia.* Sepals 6, guarded on the outside by 3 scales. Petals 6, with 2 glands on the inside of each. Stamens toothless. Berries 2-3-seeded. Seeds 2, rarely 3, laterally inserted at the base of the berries, erect, oblong, with a crustaceous coat, and fleshy albumen; cotyledons leafy, elliptical; radicle long, capitellate at the top. Shrubs from 2 to 18 feet high, with the primary leaves abortive, generally changed into spines, the secondary ones growing in fascicles in the axillæ of the primary ones. Flower in all yellow. The stamens of *Bérberis vulgàris, Canadénsis, Sinénsis*, and perhaps all the species of such flowers as are open, bend back to each petal, and shelter themselves under their concave tips. No shaking of the branch has any effect upon them, but if the inside of the filaments are touched with a small bit of stick, a needle, or pin, they instantly spring from the petals, and shake the anthers against the stigma. The outside of the filament has no irritability, nor has the anther itself any; as may be proved by touching either of them with a blunt needle, or any thing which cannot injure the structure of the part. If the stamen be bent to the stigma by means of a pair of scissars applied to the anther, no contraction of the filament is produced. From all this it is evident that the spring of the stamens is owing to a high degree of irritability in the side of the filament next the germ, by which, when touched, it contracts, that side becomes shorter than the other, and consequently the filament is bent towards the germ. This irritability is perceptible in the stamens of flowers of all ages. If the germ is cut off the filaments will still contract; and, nothing being in their way, will bend over quite to the opposite side of the flower. After irritation the stamens will return to their original place; and, on being touched again, they will contract with the same facility as at first, and this may be repeated three or four times. The purpose which this curious contrivance of nature answers is evident. In the original position of the stamens, the anthers are sheltered from rain by the concavity of the petals. Thus probably they remain till some insect comes to extract honey from the base of the flowers, thrusts itself between the filaments, and almost unavoidably touches them in the most irritable part: thus the impregnation of the germ is performed. This irritability in the stamina has been more particularly observed in the *B. vulgàris*.

§ 1. *Leaves simple. Peduncles many-flowered, racemose.*

1 B. VULGA'RIS (Lin. spec. 472.) spines 3-parted; leaves somewhat obovate, ciliately-serrated; racemes many-flowered, pendulous; petals entire. ♄. H. Native throughout the whole of Europe and Western Asia, in hedges and coppices, especially in a chalky soil; it is even found on Mount Etna, at 5000 or 7500 feet above the level of the sea: in England, particularly about Saffron-Walden in Essex, &c. Mill. dict. no. 1. Oed. fl. dan. t. 904. Smith eng. bot. 49. B. irritábilis, Sal. prod. 213. Fruit red.

Var. β, lùtea; fruit yellow. Lher. ined.

Var. γ, violàcea, fruit violaceous. Poit. et Turp. arb. fr. 59.

Var. δ, purpùrea; fruit purple; leaves narrow, hardly-ciliated. B. innominàta, Kielm. dec. rar. pl. tub. p. 18.

Var. ε, nìgra; fruit black; leaves oblong, ciliately serrated; serratures few.

Var. ζ, àlba; fruit white. Mill. dict. no. 1.

Var. θ, aspérma; fruit destitute of seeds. Mill. dict. no. 1. Shrubs from 4 to 8, but sometimes 25 feet high. Roots bitter, astringent, boiled in lye will dye wool yellow. Bark purgative, taken in the form of a decoction, in ale or other liquors, is efficacious in the jaundice. The bark of the root and inner bark of the stem affords a colour which will dye linen or cotton of a fine yellow, with the assistance of alum. In Poland they dye leather of a most beautiful yellow with the bark of the root. The leaves are gratefully acid. The flowers are offensive to the smell when close, but at a proper distance their odour is extremely agreeable. The berries are so acid that birds will not eat them. The *Barberry*, however, is cultivated for the sake of these, which are pickled and used for garnishing dishes; and being boiled with sugar they form an agreeable rob or jelly, they were formerly used as a dry sweet-meat as well as in sugar-plumbs and comfits. They are moderately restringent, and are said to be of great use in bilious fluxes, and in all cases where heat, acrimony, and putridity of the humours prevail. On the authority of Prosper Alpinus we are informed that the Egyptians employ them in pestilential fevers and fluxes with great success, and Simon Paulli relates that he was cured of a malignant fever, accompanied with a bilious diarrhœa, by using these berries according to the Egyptian practice, that is, macerating them for a day and a night in twelve times their quantity of water with the addition of a little fennel-seed, and then stirring and sweetening the liquor and using it as a common drink. Dr. Woodville observes in his Medical Botany, vol. 4. p. 62, that these berries are well calculated to allay heat and thirst, and to correct a putrid tendency in the fluids; but that, in this respect, they seem to possess no peculiar advantages over most of the other acid fruits; hence the colleges of Edinburgh and London have expunged this fruit from the Materia Medica, and retained only that of the currant. In many parts of Europe a certain peculiarity is ascribed to this shrub, that ears of corn growing near it constantly prove abortive, and that it extends this sterile influence over them to the distance of 3 or 400 yards across a field; but this opinion is altogether groundless. Insects of various kinds are remarkably fond of the flowers of the *Barberry*, and the *Æcídium Berbéridis*, its particular inhabitant, is supposed to generate the dust which, carried from the bush by winds and lighting on wheat and other corns, is said to give rise to the *Puccínia*, a minute fungus which closes up the pores of the leaves and appears like rust or mildew. All the peculiarities the *B. vulgàris* is said to possess runs through the whole genus as well as the genus *Mahònia*.

Common Barberry. Fl. April, May. Brit. Sh. 8 to 20 ft.

2 B. IBE'RICA (Stev. et Fish. in litt.) spines simple and 3-parted; leaves obovate-oblong, quite entire; racemes many-flowered, pendulous; petals entire. ♄. H. Native of Iberia. B. vulgàris? *ν, ibérica.* D. C. syst. 2. p. 6.

Iberian Barberry. Fl. April, May. Clt. 1790. Sh. 8 to 10 ft.

3 B. EMARGINA'TA (Willd. enum. 1. p. 395.) spines 3-parted; leaves lanceolate-obovate, ciliately serrated; racemes scarcely pendulous, shorter than the leaves; petals emarginate. ♄. H. Native of Siberia. Very like *B. vulgàris*, but is one half smaller in all its parts and with emarginate petals.

Emarginate-petalled Barberry. Fl. April, May. Clt. 1820. Shrub 6 feet.

4 B. CANADE'NSIS (Mill. dict. no. 2.) spines 3-parted; leaves obovate-oblong, remotely serrated, upper ones nearly entire; racemes many-flowered, nodding. ♄. H. Native of North America in fertile hills and among rocks, especially in the Alleghany mountains, from Canada to Carolina, also in Tennessee. Pursh, fl. amer. sept. 1. p. 219. Nutt. gen. amer. 1. p. 210. B. vulgàris, Mich. fl. bor. amer. 1. p. 205. Hook fl. bor. amer. 1. p. 28. Shrub 3 or 4 feet high, apparently between *B. vulgàris* and *B. Chinénsis*. The berries are said by Pursh to be more acid and less fleshy than those of *B. vulgàris*. Nuttall says that the petals are emarginate. The same incorrect idea too prevails in the United States respecting the injurious effects of the *Barberry* upon the wheat which grows in its neighbourhood.

Canadian Barberry. Fl. April, June. Clt. 1759. Sh. 4 ft.

5 B. SINE'NSIS (Desf. cat. ed. 1804. p. 150.) spines 3-parted; leaves oblong, obtuse, entire, or the lower ones are a little toothed; racemes many-flowered, nodding. ♄. H. Native of China. Wats. dend. brit. t. 26. A shrub, 3 or 5 feet high. Berries oval, of a deep-red colour, 1-2-seeded. This plant is perhaps the *B. vulgàris* of Thunb. jap. 1. p. 146.

China Barberry. Fl. May. Clt. 1800. Shrub 3 to 6 feet.

6. B. FLORIBU'NDA (Wall. MSS.) spines 3-parted, unequal; leaves obovate-lanceolate, or obovate-oblong, tapering much to the base, ending in a mucrone at the apex, paler beneath, spiny-ciliated; racemes many-flowered, loose, solitary, pendulous; fruit oblong. ♄. H. Native of Nipaul.

Bundle-flowered Barberry. Shrub 10 feet.

7 B. ARISTA'TA (D. C. syst. 2. p. 8.) lower spines 3-parted, upper ones simple and hardly bidentate at the base; leaves obovate-oblong, or lanceolate, mucronate, membranous, smooth, serrated with 4 or 5 spinulose teeth; racemes nodding, many-flowered, longer than the leaves; pedicels trifid, 3-flowered; berries oblong. ♄. H. Native of Nipaul. Hook exot. fl. t. 98. Ker. bot. reg. 729. B. angustifòlia, Roxb. hort. beng. 87. B. Chítria, Buch. in D. Don. prod. fl. nep. p. 1. A species very like *B. Sinénsis*. Ovaries oblong-cylindrical, crowned by the very short thick style, and orbicular stigma. Leaves sometimes quite entire.

Awned-leaved Barberry. Fl. April, May. Clt. 1820.

8 B. AFFI'NIS; spines 3-parted, unequal; leaves membranous, oblong-obovate, tapering to both ends, spiny-ciliated in the middle, but with the base and apex entire, paler beneath; racemes many-flowered, erect, long, loose. ♄. H. Native of Kamoon in the East Indies. B. floribùnda? Wall. MSS.

Allied Barberry. Shrub 6 feet.

9 B. CERATOPHY'LLA; spines strong, 3-parted, unequal; leaves lanceolate, or obovately lanceolate, mucronate, tapering to the base, spiny-toothed; teeth large, 2 or 3 on each side, paler beneath; racemes many-flowered, loose, erect; pedicels long, sometimes somewhat verticillate. ♄. H. Native of Nipaul? B. floribúnda? Wall. MSS.

Buckhorn-leaved Barberry. Shrub 6 to 10 feet.

10 B. CRE'TICA (Lin. spec. 472.) spines 3-5-parted; leaves oval-oblong, entire, or somewhat serrated; racemes 3-8-flowered, rather shorter than the leaves. ♄. H. Native of Crete and Cyprus. Fl. græc. t. 342.—Clus. hist. p. 301.—Alpin. exot. 21. t. 20. Berries ovate, black, 2-seeded, more sour than acid; stigma on a very short style.

Var. β, *serratifòlia* (Poir. dict. 8. p. 618.) leaves ciliately-serrated.

Cretan Barberry. Fl. April, May. Clt. 1759. Sh. 4 to 5 ft.

11 B. CRATÆGI'NA (D. C. syst. 2. p. 9.) spines simple; leaves oblong, reticulated, hardly serrated; racemes many-flowered, crowded, spreading, scarcely longer than the leaves. ♄. H. Native of Asia Minor. Allied to *B. Crética* and *B. Sinénsis*. Flowers 12-18, crowded. Like *B. vulgàris*.

Cratægus-like Barberry. Fl. April, May? Shrub 4 to 8 ft.

12 B. TINCTO'RIA (Lesch. in mem. mus. 9. p. 306.) spines 3-parted? leaves rather spatulate, spiny-toothed, glaucous beneath; racemes simple, pendulous; bark rather corky: wood bitter and yellow. ♄. H. Native of Nellygerry mountains in the Peninsula of India, where the inhabitants call it *tjaklon*, and they employ a decoction of the wood and bark to dye linen and cotton of a bright yellow colour with the assistance of alum.

Dyers' Barberry. Fl. April, May. Shrub 6 to 7 feet.

13 B. THUNBE'RGII (D. C. syst. 2. p. 9.) lower spines 3-parted, upper ones simple; leaves oval, tapering at the base, quite entire; racemes few-flowered, corymbose, shorter than the leaves. ♄. H. Native of Japan. B. Crética, Thunb. jap. 1. p. 146. but not of Lin. Young berries oblong, terminated by the broad, orbicular, sessile stigma, and as if it were truncate.

Thunberg's Barberry. Fl. April, May? Shrub 4 to 6 feet.

14 B. UMBELLA'TA (Wall. mss.) spines 3-parted, long, equal; leaves obovate-oblong, mucronate, entire, glaucous beneath; peduncles solitary, erect, bearing at the top several umbellate pedicels which rise from the same centre. ♄. H. Native of Nipaul?

Umbellated-flowered Barberry. Shrub 6 feet.

15 B. GLAU'CA (D. C. syst. 2. p. 10. H. B. et Kth. nov. spec. amer. 5. p. 71. t. 433.) spines 3-parted; leaves obovate, under surface glaucous, nearly entire; racemes many-flowered, erect; paniculately-branched; petals obovate. ♄. S. Native of South America about Santa Fe de Bogota. Allied to *B. vulgàris* but very distinct. Flowers a little larger. Sepals 6, with an addition of 3 largish scales.

Glaucous-leaved Barberry. Fl. April, May? Sh. 4 to 6 ft.

16 B. MONOSPE'RMA (Ruiz, et Pav. fl. per. 3. p. 52.) spines 3-parted; leaves oval or obovate, mucronate, lower ones spiny-toothed; racemes many-flowered, nodding. ♄. G. Native of Peru on mountains. Berries black, 1-seeded.

One-seeded Barberry. Fl. Aug. Sept. Shrub 4 feet.

17 B. GLAUCE'SCENS (St. Hil. fl. bras. 1. p. 46.) spines 3-parted; leaves obovate-oblong, obtuse, mucronulate, cuneated at the base and tapering into the petiole, quite entire, glaucescent; racemes many-flowered, pendulous; calyx 8-sepalled; style narrower than the ovary. ♄. S. Native of Brazil in the province of Cis Platine in woods. Stipulas awl-shaped, very acute. Flowers globose, about the size of those of *B. vulgàris*.

Glaucescent-leaved Barberry. Fl. Sept. Shrub 4 to 8 feet.

18 B. LATIFO'LIA (Ruiz. et Pav. fl. per. 3. p. 52. t. 282, *a*.) spines short, 3-parted, or simple; leaves obovate, quite entire, mucronate, under surface pale; peduncles 3-6-flowered, shorter than the leaves. ♄. H. Native of Peru in the Andes towards the village of Pillao in cold groves. Berries oval, dark, 3-4-seeded, terminated by the pedicellate stigma. Flowers unknown.

Broad-leaved Barberry. Fl. March, April. Shrub 9 feet.

19 B. FLEXUO'SA (Ruiz, et Pav. fl. per. 3. p. 52. t. 281. f. 2.) spines 3-parted; leaves obovate, glaucous, quite entire, mucronate at the apex; racemes aggregate, unequal, few-flowered. ♄. G. Native of Peru on rocks in the Andes; about Tarma and Cheuchin. Young berries ovate-oblong, drawn out into a neck at the apex and crowned by the orbicular stigma, adult ones oblong, black, 4-5-seeded.

Flexuous-branched Barberry. Fl. from Dec. to Ju. Sh. 4 to 8 ft.

20 B. CORIA'CEA (St. Hil. fl. bras. 1. p. 46.) spines small, 3-parted, sometimes wanting; leaves on short petioles, oblong, narrow, obtuse, mucronulate, gradually tapering to the base; racemes curved, pendulous. ♄. S. Native of Brazil in the southern parts of the province of St. Paul. Berries small, acid, eatable. Stipulas somewhat triangular.

Coriaceous-leaved Barberry. Shrub 4 to 8 feet.

21 B. RUSCIFO'LIA (Lam. ill. t. 253. p. 2.) spines 3-parted; leaves oblong, tapering at the base, mucronate, entire, or grossly and spiny-toothed; peduncles short, bearing 4-5 flowers at the apex. ♄. G. Native of South America about Buenos Ayres. Flowers a little larger than those of *B. vulgàris*.

Ruscus-leaved Barberry. Fl.? Clt. 1825. Shrub 4 to 8 ft.

22 B. PANICULA'TA (Juss. in D. C. syst. 2. p. 12.) spines short, trifid; leaves lanceolate, mucronate, entire, or spinulosely-toothed; peduncles angular, erect, racemosely-panicled. ♄. S. Native of Peru. Bracteas linear-subulate, one half shorter than the pedicels. Calyx with 3 bracteas at the base.

Panicled-flowered Barberry. Shrub 4 to 8 feet.

23 B. ILICIFO'LIA (Forst. in comm. goett. 9. p. 28.) spines 3-parted; leaves ovate, tapering at the base, coarsely and spinulosely-toothed; peduncles short, 4-flowered; pedicels elongated, somewhat corymbose; berries ovate, bottle-shaped. ♄. H. Native of Terra del Fuego in the fissures of rocks, at a place called Baye de Bougainville in the Straits of Magellan. In Terra Fuego the inhabitants make use of the wood for bows, for which purpose it is well adapted, on account of its great elasticity.

Holly-leaved Barberry. Fl. Jul. Aug. Clt. 1791. Sh. 2 to 3 ft.

24 B. ASIA'TICA (Roxb. in D. C. syst. 2. p. 13.) spines trifid, or simple; leaves oval, cuneated, or elliptical, mucronate, smooth, under surface glaucous, entire, or spinulosely-toothed; racemes short, many-flowered, corymbose, shorter than the leaves; pedicels elongated, 1-flowered; berries oval. ♄. G. Native of the East Indies and Nipaul. Deless. icon. sel. 2. t. 1. In the form of the leaves this species comes very near to *B. ilicifòlia*. Berries terminated by the thick short style; pollen grey.

Asiatic Barberry. Fl.? Clt. 1820. Shrub 4 to 8 feet.

25 B. PETIOLA'RIS (Wall. mss.) spines simple; leaves obovate roundish, or obovate-oblong, spiny-ciliated, on long petioles, membranous; racemes solitary, short, loose, erect, or rather pendulous; flowers large. ♄. H. Native of Nipaul?

Stalked-leaved Barberry. Shrub 6 to 10 feet.

26 B. RIGIDIFO'LIA (H. B. et Kth. nov. spec. amer. 5. p. 70. t. 431.) spines 3-parted; leaves oblong, terminated by a spiny mucrone, hardly furnished with one or two teeth, smooth; racemes few-flowered, scarcely longer than the leaves. ♄. G. Native of South America. Allied to *B. lùtea*. Flowers the size of those of *B. vulgàris*. Bracteas subulate, 3-times shorter than the pedicels.

Kigid-leaved Barberry. Shrub 4 to 8 feet.

27 B. QUINDIUE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 70. t. 432.) spines none; leaves oblong, spiny-toothed, mucronate, smooth; racemes erect, pubescent, many-flowered, longer than the leaves. ♄. S. Native of South America in the mountains about Quindiu. Flowers one half larger than those of *B. vulgàris*. Bracteas linear-subulate, smooth.

Quindiu Barberry. Shrub 4 to 8 feet.

28 B. SPINULO'SA (St. Hil. fl. bras. 1. p. 45.) branches rather flattened, smooth, or even; spines 3-parted; leaves few in a fascicle, on short stalks, oblong, tapering and cuneated at the base, remotely spiny-toothed, quite entire at the base. ♄. S. Native of Brazil in the province of St. Paul, near the town of Curitiba. Branches flexuous. Stipulas membranous, somewhat triangular.

Spinulose-leaved Barberry. Shrub 3 to 5 feet.

29 B. LAURI'NA (Billb. in flor. 1821. p. 330.) spines? leaves

ovate, mucronate, entire; racemes simple, pendulous. ♄. S. Native of Brazil.

Laurel-like Barberry. Shrub 4 to 8 feet.

§ 2. *Leaves simple. Pedicels* 1-*flowered.*

30 B. Wallichia'na (D. C. prod. 1. p. 107.) spines 3-parted; leaves elliptical-oblong, acuminated at both ends, very smooth, rigid, coriaceous, spinosely-serrated, green and shining on both surfaces; pedicels club-shaped, 10-15, aggregate, 1-flowered; berries oval. ♄. G. Native of Nipaul.

Wallich's Barberry. Fl. ? Clt. 1820. Shrub 4 to 8 feet.

31 B. tomento'sa (Ruiz, et Pav. fl. per. 3. p. 52. t. 282. *b*.) spines none; leaves oval, under surface densely tomentose, entire or with a few spiny-teeth; pedicels 1-3, 1-flowered, slender. ♄. G. Native of Chili about Conception. Flowers 6-petalled, about the size of those of *B. vulgàris*. Berries oval, 2-3-seeded, beaked with the pedicellate stigma.

Woolly-leaved Barberry. Fl. May, July. Shrub 8 feet.

32 B. lu'tea (Ruiz, et Pav. fl. per. 3. p. 51. t. 280.) spines none; leaves obovate, mucronate, and tricuspidate; branchlets rather pubescent; pedicels many, 1-flowered, somewhat shorter than the leaves. ♄. H. Native of Peru on wooded rocks in the Andes in cold situations. The wood is hard and made into utensils, it also yields a yellow colour which is used for dying cloth.

Yellow-dye Barberry. Fl. Nov. to June. Shrub 4 feet.

33 B. confe'rta (H. B. et Kth. nov. spec. amer. 5. p. 69. t. 430.) leaves smaller than in any of the other species, entire, terminated by a spine, and furnished with a small spine on each side, but many of them bear 2 or 3 small spines on each side. ♄. S. Native of South America between Caxamarca and the river Magdalena. B. lùtea, var. β, D. C. syst. 2. p. 14.

Crowded-leaved Barberry. Fl. Nov. to June. Shrub 4 feet.

34 B. ine'rmis (Pers. ench. 1. p. 387.) spines none; leaves elliptic, quite entire, smooth, scarcely mucronulate; pedicels solitary, 1-flowered, longer than the leaves. ♄. H. Native of the Straits of Magellan at Bougainville Bay. Ovaries ovate, crowned by the stigma.

Unarmed Barberry. Fl. Dec. Shrub 4 feet.

35 B. buxifo'lia (Lam. ill. t. 253. f. 3.) spines 3-parted; leaves ovate or ovate-lanceolate, smooth, quite entire; pedicels longer than the leaves, either solitary, 1-flowered, or in threes, rising from a short peduncle. ♄. H. Native of the Straits of Magellan at the bottom of the Boucaut Bay. A small twisted shrub. Berries blueish-purple, 4-seeded.

Var. β, *microphýlla* (Forst. in comm. goett. 9. p. 29.) peduncles 3, 1-flowered. Native of Terra del Fuego in the fissures of rocks.

Box-leaved Barberry. Shrub 2 to 3 feet.

36 B. empetrifo'lia (Lam. ill. t. 253. f. 4.) spines 3-parted; leaves linear, quite entire, with revolute margins; pedicels 1-2, 1-flowered. ♄. H. Native of the Straits of Magellan in subalpine woods, frequent. A small shrub. Pedicels rising from the branchlets between the leaves.

Empetrum-leaved Barberry. Fl. Dec. Shrub 1 to 2 feet.

37 B. cunea'ta (D. C. syst. 2. p. 16.) spines 3-parted, hardly longer than the leaves; leaves obovate-cuneate, spinosely-trifid, smooth; pedicels solitary, 1-flowered, nearly equal in length with the leaves. ♄. G. Native of South America about Port Desideratum. Allied to *B. heterophýlla*. Flowers about the size of those of *B. vulgàris*. Berries obovate, somewhat globose, of an intense bluish-purple colour, crowned by the sessile stigma.

Wedge-leaved Barberry. Shrub 4-6 feet.

38 B. heterophy'lla (Juss. in Poir. dict. 8. p. 622.) spines 3-parted; leaves ovate-lanceolate, glabrous, some of them entire, others furnished with 3 pungent teeth; pedicels solitary, 1-flowered, hardly longer than the leaves; filaments toothed. ♄. H. Native of the Straits of Magellan. Hook. exot. fl. t. 14. Allied to *B. ruscifòlia*, but abundantly distinct in the pedicels being 1-flowered. Berries roundish, 4-seeded, purplish-blue, about the size of a pea, and crowned by the sessile stigma.

Variable-leaved Barberry. Fl. May, June. Clt. 1820. Shrub 4 to 6 feet.

39 B. virga'ta (Ruiz. et Pav. fl. per. 51. t. 281. f. B.) spines small or none; leaves obovate, entire, or spinosely-toothed at the apex, smooth; pedicels solitary, 1-flowered, length of leaves. ♄. S. Native of Peru in woods. An erect, much branched, smooth shrub. Berries small, oblong-ovate. Seed brown. Allied to *B. lùtea*.

Twiggy Barberry. Fl. Dec. to Feb. Shrub 4 to 6 feet.

40 B. Sibi'rica (Pall. fl. ross. 2. p. 42. t. 67. itin. app. no. 108. t. P. f. 2. ed. gall. 3. p. 211. t. 13. f. 2.) spines 3-7-parted; leaves lanceolate-obovate, ciliately-serrated; peduncles 1-flowered, shorter than the leaves. ♄. H. Native of Siberia, Altaia, and Dauria, among rocks. Flowers very like those of *B. vulgàris*. The berries, according to Pallas, are obovate and red.

Siberian Barberry. Fl. June, July. Clt. 1790. Shrub 1 to 2 ft.

41 B. atrovi'rens (Wall. mss.) spines 3-parted, long, equal; leaves lanceolate, tapering to both ends, spiny-ciliated, acute, rusty on the under surface; pedicels aggregate, 1-flowered, rising from the heart of the fascicle of leaves. ♄. H. Native of Nipaul.

Dark-green-leaved Barberry. Shrub 10 feet.

Species not sufficiently known, but distinct, from the leaves being abruptly pinnate, and with their petioles ending in a spine at the apex.

42 B. tragacanthoi'des (D. C. syst. 2. p. 18.) spines 3-parted, small; leaves with 1-2 pair of leaflets, crowded in the axillæ; petioles spiny at the apex. ♄. H. Native of Russia along the banks of the river Cur near Tiflis. A species allied to *B. Crética* and *B. Sibírica*.

Tragacantha-like Barberry. Shrub 1 foot.

43 B. caraganæfo'lia (D. C. syst. 2. p. 18.) the primordial leaves bearing at the base two stipulary spines, with the top of their petioles ending in a spine; leaflets 2-pairs. ♄. G. Native of China in the province of Shantong. Leaflets 2-pairs, inserted at the top of petiole beneath the spinescent part.

Caragana-leaved Barberry. Shrub 1 to 2 feet.

Cult. The commoner sorts of this genus will do well in any kind of garden soil, but the rarer species will require to be grown in a mixture of loam and peat, mixed with a little sand; they may be either propagated by suckers or layers which should be put down in the autumn, when the leaves have fallen, and ripened cuttings planted at the same time will strike root, or they may be increased by seeds, which is the most general method, sown either in the autumn or spring. The stove species, or those sorts natives of warm climates, do not require so much heat as other stove plants, and the green-house kinds may be easily preserved in a frame.

II. MAHO'NIA (in honour of Bernard Mc Mahon of Philadelphia, a lover of botanical science.) Nutt. gen. amer. 1. no. 307. D. C. syst. 2. p. 18. prod. 1. p. 108. Adostèmon, Raf. amer. monthl. mag. 1819. p. 192.

Lin. syst. *Hexándria, Monogýnia.* Sepals 6, guarded on the outside by 3 scales. Petals 6, without glands on the inside. Stamens furnished with a tooth on each side at the top of the filament. Berries 3-9-seeded. Elegant shrubs, with impari-pinnate leaves, and sinuately-toothed leaflets. Flowers yellow. Species either inhabiting the north-western coast of America or the north of Asia, especially in Nipaul, and perhaps Japan. Some botanists think that the character that distinguishes this genus from *Bérberis* is not sufficiently constant to separate it, as *Bérberis heterophýlla* has toothed stamens, and those of *M. Napaulensis* are without teeth.

1 M. fascicula'ris (D. C. syst. 2. p. 19.) leaflets 3-6-pairs, with an odd one, the lower pair distant from the base of the petiole; leaflets ovate-lanceolate, rather distant, 1-nerved, spiny-toothed, with 4-5-teeth on each side; racemes erect, much crowded; filaments bidentate. ♄. F. Native of New Spain, and about Nootka Sound. Deless. icon. sel. 2. t. 3. Bérberis pinnàta, Lag. elenc. hort. mad. 1803. p. 6. Ker. bot. reg. t. 702. Hook. fl. bor. amer. 1. p. 28. H. B. et Kth. nov. spec. amer. 5. p. 71. t. 434. B. fasciculàta, Sims bot. mag. t. 2396. Berries oval, deep-blue.

Fascicular Mahonia. Fl. March, May. Clt. 1820. Shrub 6 to 8 feet.

2 M. aquifo'lium (Nutt. gen. amer. 1. p. 212.) leaflets 2-3-pairs, with an odd one, the lower pair distant from the petiole; leaflets ovate, approximate, cordate at the base, 1-nerved, spiny-toothed, with 9 or 6 on each side; racemes erectish, much crowded; filaments bidentate. ♄. H. Native of North America on the western coast, and along the river Columbia, among rocks in rich vegetable soil. Berberis aquifòlium, Pursh. fl. amer. sept. 1. p. 219. t. 4. Hook. fl. bor. amer. p. 29. Berries dark-purple, crowned by the 3-lobed stigma.

Var. α; leaflets sinuately-toothed, wavy, with few teeth. Native of Nootka Sound.

Var. β; leaflets obscurely-toothed, flat, glaucous beneath, with numerous teeth. Native at the junction of the Portage river with the Columbia.

Holly-leaved Mahonia. Fl. Ap. May. Clt. 1823. Shrub 3 to 6 feet.

3 M. re'pens; leaflets 2-3 pairs, with an odd one, roundish-ovate, opaque, spiny-toothed; racemes diffuse; root creeping, filaments bidentate. ♄. H. Native of North America on the Rocky Mountains. Bérberis aquifòlium, Lindl. bot. reg. 1176. A small branched shrub, with the leaves rather glaucous on both surfaces. Racemes terminal, numerous, fascicled, diffuse, rising from the scaly buds. The description of Pursh's *B. aquifolium* was taken partly from this, and partly from the true *M. aquifolium*.

Creeping-rooted Mahonia. Fl. Ap. May. Clt. 1822. Shrub 1 to 2 feet.

4 M. nervo'sa (Nutt. gen. amer. 1. p. 212.) leaflets 5-6 pairs, with an odd one, the lower pair distant from the petiole; leaflets ovate, acuminated, remotely spiny-toothed, somewhat 3-5-nerved, with 12 or 14 teeth on each side; racemes elongated; filaments bidentate. ♄. H. Native of North America on the western coast, along the river Columbia. Common in shady pine forests, on the coast of the Pacific. Bérberis nervòsa, Pursh. fl. amer. sept. 1. p. 219. t. 5. Hook. fl. bor. amer. 29. M. glumàcea, D. C. syst. 2. p. 21. A small shrub. Berries deep-blue.

Nerved-leaved Mahonia. Fl. Oct. Clt. 1826. Shrub 1 to 3 feet.

5 M. Napaulensis (D.C. syst. 2. p. 21.) leaflets 5-9 pairs, with an odd one, the lower pair smallest, approximating the base of the petiole; leaflets ovate-oblong, cuspidate, 5-nerved and rounded, or subcordate at the base; repand toothed, with 5 to 10 spiny-teeth on each side, tricuspidate at the apex; racemes few, elongated, slender; bracteoles oval-oblong, obtuse. ♄. F. Native of Nipaul about Narain-Hetty. Deless. icon. sel. 2. t. 4. Bérberis Mìccia, Hamilt. mss. D. Don, prod. fl. nep. p. 205. Filaments simple. (f. 31.)

FIG. 31.

Var. β, *Roxbúrghii* (D. C. l. c.) B. pinnàta, Roxb. ined. The leaflets have fewer and larger teeth. Pedicels a little longer than the bracteas. ♄. F. Growing along with the species. Racemes 12 or 14, from the same bud.

Nipaul Mahonia. Fl. Nov. Dec. Shrub 4 to 6 feet.

6 M. acanthifòlia; leaves with 6-10 pairs of sessile leaflets and an odd one, lower pair small, approximating the stem, the rest obliquely oblong-lanceolate, acuminated, spiny-toothed, gradually enlarging from the base to the top; racemes numerous, rising from the top of the branches in fascicles, long, erect, crowded with flowers. ♄. F. Native of Nipaul. Bérberis acanthifòlia, Wall. mss. Perhaps the same as the preceding.

Acanthus-leaved Mahonia. Shrub 6 feet.

Species not sufficiently known.

7 M. Japo'nica (Thunb. fl. jap. 77 ? icon. jap. t. 22.) ♄. G. Cultivated in the island of Nipon in Japan. Ilex Japónica, Thunb. fl. jap. 77. icon. jap. t. 22.

Japan Mahonia. Shrub.

Cult. This is a genus of beautiful and rare shrubs. They will grow well in a mixture of loam and peat, mixed with a little sand; they may be either propagated from suckers or layers put down in the autumn; and ripe cuttings planted at the same time will strike root the following year, under a hand-glass.

III. NANDI'NA (*Nandin* or *Nand-scokf* is the vernacular name of the shrub in Japan.) Thunb. nov. gen. 1. p. 14. Gært. fruct. 2. p. 69. t. 92. f. 3. Juss. gen. 429. D. C. syst. 2. p. 22. prod. 1. p. 109.

Lin. syst. *Hexándria, Monogýnia.* Sepals 6, guarded by numerous series of scales. Petals 6, glandless inside. Berries dry, globose, crowned by the style. Seeds 2, round, convex on one side and concave on the other. An elegant evergreen shrub, with decompound leaves, and with the petioles sheathing at the base; leaflets entire. Flowers terminal, panicled, white, with yellow anthers. Berries red, about the size of a pea.

1 N. dome'stica (Thunb. diss. nov. gen. 1. p. 14.) ♄. G. Native of Japan and China, where it is cultivated in the gardens. Lam. ill. t. 261. Herb. amat. 281. Banks, icon. Kœmpf. t. 13 and 14. Sims bot. mag. 1109. Called in its native country *Nandscokf*, *Nattan*, or *Nandin* Kœmpf.

Domestic Nandina. Fl. in China and Japan in May and July; in England in Jan.; at Paris in July and Aug. Clt. 1804. Shrub 5 feet.

Cult. This shrub will thrive well in a mixture of loam and peat; and ripened cuttings, with their leaves not shortened, will strike root freely if planted in a pot of sand, and placed under a hand-glass. (Sweet.)

IV. LEO'NTICE (an ancient name abridged from *Leontope-*

talon, which is derived from λεων, *leon*, a lion; πεταλον, *petalon*, a leaf; because the leaf of L. Leontopetalum is said to bear some resemblance to the impression of a lion's foot.) Lin. gen. no. 423. Lam. ill. t. 254. Schreb. gen. no. 571. Juss. gen. p. 287. Brown in Lin. trans. 12. p. 145. t. 7.

LIN. SYST. *Hexándria*, *Monogýnia*. Sepals 6 (f. 32. *a*.) without scales. Petals 6 (f. 32. *b*.) each bearing a scale on the inside at the base. Capsules bladdery, 2-4-seeded (f. 32. *c*.) Seeds globose, inserted in the bottom of the capsule. Herbs with tuberous roots and annual stems about a foot high, and variously cut leaves, somewhat resembling those of *Columbine*. Flowers in loose racemes, or panicles, furnished with ovate, leafy, entire bracteas, at the base of the pedicels. Calyx usually coloured.

SECT. I. LEONTOPE'TALUM (from λεων, *leon*, a lion, and πεταλον, *petalon*, a leaf; lion's leaf. See *L. Leontopétalum*.) D. C. syst. 2. p. 24. prod. 1. p. 109. Capsules greatly inflated when mature (f. 32. *c*.) never ruptured, inclosing the seeds. Upper leaves pinnate or ternate. Petioles simple, or divided at the top, not at the base.

1 L. CHRYSO'GONUM (Lin. spec. 447.) leaves pinnate; leaflets sessile, oval-oblong, 3-5-cleft at the apex; bracteas small, scarious. ♃. H. Native of Greece in corn-fields, also near Abydos and Aleppo.—Mor. hist. 2. p. 285. sect. 3. t. 15. f. 7.—Barrl. icon. 1113. &c. Chrysógonum Dioscórides, Rauw. itin. 1582. p. 119. icon. Flowers yellow; stamens and petals nearly equal in length. The specific name is derived from χρυσος, gold, and γονυ, a knee, on account of the bright yellow blossoms which usually rise from the forks or knees of the stem.

Golden-kneed Lion's Leaf. Fl. in its native country in March; in England in June. Clt. 1740. Pl. 1 foot.

2 L. LEONTOPE'TALUM (Lin. spec. 448.) leaves biternate; leaflets obovate, on very short petioles; bracteas leafy, much shorter than the pedicels. ♃. H. Native of Puglia, Etruria, and Crete, in ploughed land and corn fields; frequent in Greece and all the islands of the Archipelago, &c. Lam. ill. t. 254. f. 1.—Barrl. icon. t. 1030. Leontopétalon, Lob. icon. t. 685. f. 2. —Mor. hist. 2. p. 285. sect. 3. t. 15. f. 6. &c. Flowers yellow, striated with veins. Stamens shorter than the petals. Seeds 3-4, globose, brown. For the meaning of the specific name see section. It is given to this plant because the leaves are said to bear some resemblance to the impression made by a lion's foot, and from this cause it is called in French *Pied-de-Lion*.

True *Lion's Leaf*. Fl. in its native country in the winter or the beginning of spring; in England in April and May. Clt. 1597. Pl. 1 foot.

3 L. VESICA'RIA (Pall. act. petrop. 1779. p. 2. t. 9. f. 4.) leaves biternate; leaflets oblong, somewhat cuneate, blunt, submucronate; bracteas leafy, scarcely one-half shorter than the pedicels. ♃. H. Native of Siberia in muddy places at the salt lake in the Kirghisian steppe. L. incérta, Pall. itin. 3. app. no. 84. t. 5. f. 2. ed. gall. app. no. 321. t. 77. f. 3. Flowers yellow? Plant soft, succulent (f. 32. *c*.)

Bladdery-podded Lion's Leaf. Fl. in its native country in the beginning of spring; in England in April and May. Pl. $\frac{3}{4}$ foot.

SECT. II. CAULOPHY'LLUM (from καυλος, *kaulos*, a stem; φυλλον, *phyllon*, a leaf; because the plants contained in this section bear only one leaf on each stem, directly under the racemes of flowers, and appears to terminate the stem, as if it were only a petiole.) Mich. fl. bor. amer. 1. p. 204. t. 21. D. C. syst. 2. p. 26. prod. 1. p. 109. Capsules hardly inflated, sometimes baccate, ruptured when mature; the seeds are therefore exserted. Bearing only one leaf on each stem, which is situated under the raceme; petiole 3-parted from the base, bearing 3 or 5 leaflets on each part.

4 L. ALTA'ICA (Pall. act. petrop. 1779. p. 257. t. 8. f. 1, 2, and 3.) stem leaf solitary; petioles 3-parted, divided to the base, each part bearing 5-oblong, entire leaflets, which are palmately disposed. ♃. H. Native on the Altaian mountains, in sunny places, and about Zmeof. Lam. ill. 254. f. 2. Root the size of a nut. Flowers yellow. Stamens equal in length with the petals.

Altaian Lion's Leaf. Fl. April, May. Clt. 1822. Pl. 1 foot.

5 L. ODESSA'NA (Fisch. in litt.) stem leaf solitary, petioles divided into 3 parts to the base, each part bearing 5 oblong, entire, stalked leaflets, which are palmately disposed; stamens double the length of the petals. ♃. H. Native on chalky hills about Odessa. L. Altàica β, Odessàna, D. C. syst. 2. p. 26. prod. 1. p. 110. This plant differs from *L. Altàica* in the pedicels being a little longer, and the stamens being double the height of the petals, and with the segments of the leaves on rather longer stalks. Flowers yellow.

Odessa Lion's Leaf. Fl. April, May. Clt. 1828. Pl. 1 foot.

6 L. THALICTROI'DES (Lin. spec. 448.) stem leaf solitary; petiole divided to the base into 3 parts, each part bearing 3 ovate or obovate deeply-cut acuminated leaflets. ♃. H. Native of North America, in shady woods on mountains, from Virginia to New England; also near Philadelphia; but rare. Brown in Lin. trans. 12. p. 145. t. 7. Caulophýllum thalictroìdes, Mich. fl. bor. amer. 1. p. 205. t. 21. Pursh, fl. bor. amer. sept. 1. p. 218. Stems a foot high. Flowers yellow-green. Berries deep blue, globose, contracted below into a long stipitate base; these are called *Cohosh* by the Indians, and the plant is esteemed medicinal. (f. 32.)

FIG. 32.

Thalictrum-like Lion's Leaf. Fl. April, May. Clt. 1784. Pl. 1 foot.

Cult. A genus of pretty little plants, usually with beautiful yellow flowers. The species require to be kept in pots, in order that they may be sheltered by a frame during winter; they will thrive well in a mixture of sand, loam, and peat, and may be increased by separating the tubers of the root. *Leóntice Vesicària* will require to be watered now and then with salted water, or it will not live.

V. EPIME'DIUM (from επι, *epi*, upon, and Media; said to grow in Media, a name from Dioscorides, retained by Linnæus.) Lin. Gen. no. 148. Juss. gen. 287. D. C. syst. 2. p. 28. prod. 1. p. 110.

LIN. SYST. *Tetra-Hexándria Monogýnia*. Sepals 4-8, furnished with 2 bracteas on the outside, at the base. Petals 4-6, each furnished on the inside with a 2-coloured appendage. Capsules siliculæform, 2-valved, many-seeded. Stamens 4-6. Style 1. Seeds obliquely and transversely situated, unilateral. Herbs with creeping perennial trunks, and annual stems. Leaves stalked, compound; leaflets awnedly-serrated. Racemes terminal, simple, or compound.

1 E. ALPI'NUM (Lin. spec. 171.) radical leaves none; stem one biternate; leaflets cordate-lanceolate, acuminated, serrated, with the serratures awned; sepals 4-6; petals 4; stamens 4. ♃. H. Native of England in Cumberland and Yorkshire, in coppices and woods; France and other parts of the South of Europe, in the same kind of situation. Lam. ill. t. 83. Schkuhr handb. 1. p. 81. t. 24. Smith fl. græc. 2. t. 150. eng. bot. 438. Stem about 4 inches high. Flowers purplish.

Var. β, pubígerum (D. C. syst. 2. p. 28. prod. 1. p. 110.) petioles pilose; nodes very hairy. ♃. H. Native about Constantinople. Perhaps a proper species.

Alpine Barren-wort. Fl. March, May. England. Pl. ¼ foot.

2 E. pinna'tum (Fisch. in litt. D. C. syst. 2. p. 29.) radical leaves pinnate; scape leafless. ♃. H. Native of Persia, in the province of Gilan. Flowers erect. Fruit pendulous at top of pedicels.

Pinnate-leaved Barren-wort. Pl. ½ foot.

3 E. hexa'ndrum (Hook. fl. bor. amer. p. 30. t. 13.) radical leaves twice or thrice ternate; leaflets cordate, bluntly 5-lobed, somewhat pilose; flowers hexandrous; sepals 8; scape leafless. ♃. H. Native of North-west America; common in shady pine forests at Fort Vancouver on the Columbia, Puget Sound, and North California. Caulophýllum gràcile, Dougl. mss. Petals 6, oblong-obovate, cucullate at the apex, each furnished at the base on the inside with a spatulate concave yellow appendage.

Hexandrous Barren-wort. Pl. ½ to 1 foot.

Cult. The *E. alpìnum* succeeds well in any common garden soil, and is readily increased by dividing at the root. The *E. pinnàtum* and *E. hexándrum* have not yet been introduced; but if they should, it would be advisable to keep them in pots, in a mixture of peat, sand, and loam, until their hardiness is ascertained.

VI. A'CHLYS. (*achlys*, dimness; obscure plant.) D. C. syst. 2. p. 35. prod. 1. p. 112. Hook. fl. bor. amer. p. 30. t. 12.

Lin. syst. *Polyándria, Polygýnia.* Calyx wanting. Corolla wanting. Flowers naked, disposed in a dense spike. Stamens numerous. Anthers didymous, globose, almost unilocular, bilabiate. Stigma dilated, hence concave. Ovary ovate, smooth, 1-celled; containing only 1 erect ovula, fixed to the bottom of the cell. Herb with a creeping perennial woody trunk, with 2 or 3 leaves rising from the same root, which are ternate. Leaflets large, fan-shaped, sessile. Flowers in spikes; those at the base of the spikes are rather remote.

1 A triphy'lla (D. C. l. c. Hook. l. c.) ♃. H. Native of the North-west coast of America, in shady pine woods among moss; common near the shores of the Pacific, about the mouth of the Columbia river and at Fort Vancouver, Leóntice triphýlla, Smith, in Rees' Cycl. Leaflets with very unequal sides; upper side, or front, coarsely sinuate-toothed or lobed; lobes blunt, finely rayed with nerves. Scapes longer than the leaves, erect, slender.

Three-leaved Achlys. Pl. 1 to 2 feet.

Cult. This plant will succeed well in any common garden soil; and it may be increased by dividing at the root.

VII. DIPHYLLE'IA (from δις, *dis*, double; and φυλλον, *phyllon*, a leaf; in allusion to each stem of the plant only bearing two alternate leaves.) Mich. fl. bor. amer. 1. p. 203. t. 19. and 20. Pursh, fl. amer. sept. 1. p. 218. Nutt. gen. amer. p. 304. D. C. syst. 2. p. 29. prod. 1. p. 110.

Lin. syst. *Hexándria, Monogýnia.* Sepals 6, naked on the outside. Petals 6, naked on the inside. Stamens 6. Style scarcely any. Stigma capitate. Berries nearly globose, sessile, 1-celled, 2-3-seeded. Seeds ovate-oblong. A smooth perennial herb. with the habit of *Leóntice* or *Podophýllum*, with 2 large alternate lobed leaves on each stem.

1 D. cymòsa (Mich. l. c.) ♃. H. Native of North Carolina, Virginia, Georgia, on the borders of rivulets, on the tops of the highest mountains, and on the banks of Columbia river. Leaves 2, alternate, large, kidney-shaped, usually profoundly 2-lobed at the apex. Flowers white, cymose. Berries roundish, of a bluish-black colour.

Cymose-flowered Diphylleia. Fl. May, June. Clt. 1812. Pl. 1 foot.

Cult. This plant will grow freely in any light rich soil, in a shady, moist situation, and is easily increased by dividing at the root, in the spring.

Order VIII. PODOPHYLLA'CEÆ. (plant agreeing with *Podophýllum* in many important points.) D. C. syst. 2. p. 31. prod. 1. p. 111.

Calyx of 3 (f. 33. *a.*) or 4 sepals. Petals 6-9. (f. 33. *b. c.*) disposed in 2 or 3 series, each series containing the same number as there are sepals, the outer series alternating with them. Stamens equal in number with the petals, or double that number; filaments filiform; anthers terminal, opening lengthwise on the inside by a double chink. Ovary solitary, crowned by a thick peltate stigma, which is nearly sessile, (f. 33. *e.*) Carpels 1-celled baccate (f. 33. *e.*) indehiscent, or capsular opening round the circumference at the apex. Seeds numerous, ovate-globose, inverted, fixed to the lateral placenta. Albumen fleshy. Embryo straight, basilar. Herbs with rhyzomatose roots, stalked, peltate-nerved lobed leaves, and 1-flowered bractless peduncles. Flowers white. This order is closely allied, on the one hand, to the herbaceous species of *Berberídeæ*, but differs from them in the anthers not opening by an elastic valve, and they are terminal, not adnate. It differs from *Nymphiàceæ* in the parts of the flower being ternary, or quaternary, as well as in the torus being narrow, and in the albumen being fleshy, not mealy, and from *Papaveràceæ*, in the plants yielding a watery juice, not milky, and in the unilateral disposition of the seeds, as well as in the albumen being fleshy, not oily. It differs from *Ranunculàceæ Vèræ* in the anthers bursting inwardly; but perhaps the *Ranunculàceæ Spùriæ* ought to be associated with this order on account of the dehiscence of its anthers.—Plants inhabiting humid and shady places of North America, from whence the roots are easily imported in a living state, as well as the seeds. The roots are purgative. The herb is narcotic and poisonous. The berries are eatable, but sour.

Synopsis of the Genera.

I. Podophy'llum. Calyx 3-sepalled. Petals 6-9. Stamens 12-18. Berry rather fleshy, 1-celled, indehiscent.

II. Jeffersònia. Calyx 4-sepalled. Petals 8. Stamens 8. Capsules opening round the circumference at the apex.

I. PODOPHY'LLUM. (This name is abridged from *Anapodophyllum*, the name originally given to it by Catesby, derived from *anas*, a duck; πους ποδος, *pous podos*, a foot; and φυλλον, *phyllon*, a leaf; in allusion to the leaves bearing some resemblance to the form of a duck's foot.) Lin. gen. 646. Lam. ill. t. 449. Juss. gen. 235. Nutt. gen. 2. p. 365. D. C. syst. 2. p. 33. prod. 1. p. 111.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 3 sepals, (f. 33. *a.*). Petals 6-9, (f. 33. *b. c.*). Stamens 12-18. Berries somewhat fleshy, (f. 33. *e.*) 1-celled, indehiscent. Perennial herbs, with 2 opposite peltate deeply bipartite lobed leaves, bearing one white drooping flower on the top of each stem, between the two leaves.

1 P. PELTA'TUM (Lin. spec. 722.) stem erect, 2-leaved, 1-flowered; fruit ovate. 4. H. Native of North America, in shady, humid woods, from New England to Carolina, near Boston, and along the Delaware, near Philadelphia; near Montreal; Lake Huron, &c. Sims, bot. mag. 1819. Bigel. mat. med. 2. p. 34. t. 23.—Mentz. pug. t. 11.—Catesb. carol. p. 24. t. 24. Root horizontal, creeping. Leaves irregularly lobed. Flowers white, solitary, situated between the 2 leaves. Pedicel, after flowering, inflexed. Berry ovate, about the size of a sloe, yellowish, at first nauseous, but when ripe rather acid, but eatable: hence its vernacular name, *Wild Lemon*.—The root is a safe and active cathartic, combined with calomel: it contains a resinous matter, a bitter extract, and a little gummy substance. The whole herb is narcotic and poisonous, particularly the leaves. The fruit ripens in May, whence its name *May-Apple*, given to it by the settlers in North America. (f. 33.)

FIG. 33.

The dried root of the *May-Apple* is brittle, and easily reduced to powder. It has a peculiar and rather unpleasant taste, but without much acrimony. When chewed for some time it manifests a strong bitter taste. Both the tincture and decoction are intensely bitter. When water is added to the alcoholic solution, the mixture becomes very gradually turbid, and at length opaque. The powdered root answers all the purposes of jalap, rhubarb, and aloes, and is more safe and mild in its operation. In irritable stomachs it sometimes occasions nausea and vomiting, but this effect is often occasioned by other cathartic medicines. A dose of about 20 grains operates with efficacy. The root is said by some physicians to be a medicine particularly suited for dropsy. It has also had the character, in the southern states of North America, of curing intermittent fevers. It is said that the Shakers at Lebanon, New York, prepare an extract of the *Podophýllum*, which is much esteemed by medical practitioners as a mild cathartic.

Peltate-leaved Duck's-foot, or May-Apple. Fl. May. Clt. 1664. Pl. $\frac{3}{4}$ foot.

2 P. CALLICA'RPUM (Rafin. fl. lud. p. 14. no. 20.) stem forked; fruit oblong. 4. H. Native of Louisiana. Stem 2-leaved, 1-flowered, about 5 inches high. Leaves 6-lobed. Flowers nodding, sweet-scented; petals 6, white. Fruit about the size of a filbert, white or reddish.

Beautiful-fruited Duck's-foot, or May-Apple. Pl. $\frac{1}{2}$ foot.

Cult. These plants should be planted in a moist, shady situation, in a peat or vegetable soil; they are easily increased by dividing at the root.

II. JEFFERSO'NIA. (This genus is dedicated to Mr. Jefferson, the celebrated President of the United States.) Bart. act. soc. amer. 3. p. 334. Nutt. gen. amer. 368. D. C. syst. 2. p. 34. prod. 1. p. 111.

LYN. SYST. *Octándria*, *Monogýnia*. Calyx of 4 sepals. Petals 8. Stamens 8, with short filaments. Capsules opening by the whole circumference at the apex. Seeds numerous, furnished at the base with a lacerated arillus. A stemless herb, about 4 inches high, allied on the one hand to *Podophýllum*, and on the other to *Sanguinària*.

1 J. DIPHY'LLA (Pers. ench. p. 418.) 4. H. Native of Tennessee, in shady, somewhat humid places in valleys, and on the sides of hills and mountains; also in Virginia, abundantly about Harper's ferry, and Sweet-springs. Sims, bot. mag. 1513. Podophýllum diphýllum, Lin. spec. 723. Jeff. binàta, Bart. act. soc. amer. 3. p. 344. icon. Jeff. Bartònis, Mich. fl. bor. amer. 1. p. 237. Leaves profoundly cleft into 2 lobes. Peduncle 1-flowered. Flower white; anthers yellow. Calyx deciduous, coloured. Seeds shining.

Two-leaved Jeffersonia. Fl. April, May. Clt. 1792. Pl. $\frac{1}{4}$ foot.

Cult. This pretty little plant thrives best in peat soil, mixed with a little loam and sand, in a shady situation, and may either be increased by seeds or dividing at the root. It will require a little protection in severe weather.

ORDER IX. HYDROPELTI'DEÆ (plants agreeing in many important characters with *Hydropéltis*,) D. C. syst. 2. p. 36. Cabómbeæ, Rich. anal. fru.

Calyx of 3-4-coloured sepals, (f. 34. *a*.) Petals equal in number to the sepals, and alternating with them. Stamens 6-36, (f. 34. *b*.) disposed in a double or multiple series; filaments capillary; anthers ovate-triangular, or linear, terminal, (f. 34. *b*.) opening by a double chink on the inside. Ovaries 2-18, terminated by the style. Stigma obtuse. Carpels 2-18, baccate or capsular, indehiscent, each containing only 1-2 seeds from abortion; seeds globose, inverted or pendulous. Albumen rather farinaceous, not truly fleshy. Embryo small, basilar. Small aquatic herbs, floating on the surface of water. Leaves entire, peltate, or multifid. Peduncles axillary, 1-flowered. Flowers purple or yellow. This order differs from *Podophyllàceæ* in the ovaries being numerous, not solitary, as well as in the stigma being seated on a longer style, and in the seeds being definite: it also differs from *Nymphiàceæ* in the last respect. Nothing is known of their medicinal qualities. The seeds are difficult to preserve in a living state for any length of time.

Synopsis of the Genera.

1 CABÓMBA. Sepals and petals 3. Stamens 6. Ovaries 2. Seeds 1-2, globose, inverted.

2 HYDROPE'LTIS. Sepals and petals 3 or 4. Stamens 18-36. Ovaries 6-18. Seed ovate-globose, pendulous within the pericarp.

I. CABO'MBA (a name given by Aublet to this plant, but from what derived he does not mention) Aubl. guian. 1. p. 321. t. 124. Rich. ann. mus. 17. p. 230. t. 5. f. 23. D. C. syst. 2. p. 36. prod. 1. p. 112. Juss. gen. 46. Néctris, Schreb. gen. no. 610. Willd. spec. 2. p. 248. Nutt, gen. amer. no. 338.

LIN. SYST. *Hexándria*, *Digýnia*. Calyx of 3 sepals coloured on the inside. Petals 3. Stamens 6; anthers tetragonal. Ovaries 2, terminated by the style. Carpels baccate, 1-2-seeded; seeds globose, inverted. Herb emulating *Ranúnculus aquátilis*.

1 C. AQUA'TICA (Aubl. l. c.) 4. S. W. Native of Cayenne and Guiana, in ditches and slow running rivulets. Also in Georgia and Carolina, according to Mich. Néctris aquática, Willd. spec. 2. p. 248. N. peltàta, Pursh. fl. amer. sept. 1. p. 239. Herb floating in water, immersed leaves opposite, stalked, cut into 5 divisions even to the petiole, segments multifid; emersed leaves floating, alternate, on long petioles, peltate-nerved, orbicular, entire. Peduncles long, axillary, solitary, 1-flowered. Flowers small yellow. Néctris pinnàta, Pursh. fl. amer. sept. 1. p. 239. is perhaps only a variety of this plant.

Aquatic Cabomba. Fl. Jul. Aug. Clt. 1823. Pl. fl.

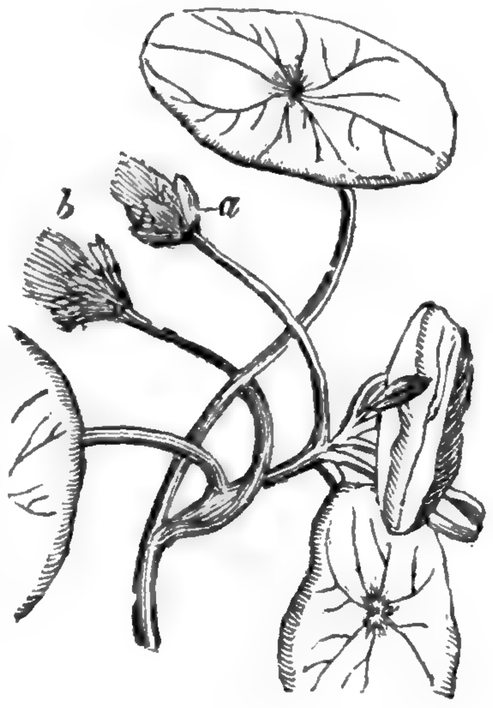
Cult. This plant will do well in a cistern about a foot deep, with 2 inches of loam in the bottom for the plant to root in, then filled up with water, and placed in the warm part of a stove. †

II. HYDROPEL'TIS (from ὑδωρ ὑδρος, *hydor hydros*, water, πελτη, *pelte*, a buckler; because the plant grows in water and has leaves in the form of a buckler) Mich. fl. bor. amer. 1. p. 324. t. 29. Sims, bot. mag. t. 1147. Rich. ann. mus. 17. p. 230. t. 5. f. 22. Brasènia, Pursh. fl. amer. sept. 2. p. 389. Nutt. gen. amer. no. 392.

Lin. Syst. *Polyándria Polygýnia.* Calyx of 3-4-sepals, coloured on the inside (f. 34. *a.*) Petals 3-4. Stamens 18-36. Ovaries 6-18, ending in filiform styles. Carpels capsular, 1-seeded. Seed ovate-globose, pendulous within the pericarp.—An aquatic herb with the aspect of *Hydrochàris*, covered with a clammy gelatinous substance. Roots fibrous, fixed in the mud.

1 H. purpu'rea (Mich. fl. bor. amer. 1. p. 324. t. 29.) ♃. H. W. Native in tranquil lakes and pools of water in Lower Carolina, also in Tennessee, New Jersey, and Upper Canada. Brasènia peltàta, Pursh. fl. amer. sept. 2. p. 389. Herb floating. Leaves alternate, on long petioles, oval, peltate in the centre, very smooth, and quite entire, floating on the surface of the water. Peduncles axillary, 1-flowered. Flowers dull purple, closing and lying down on the surface of the water at night, and expanding again in the morning. There is another species found in New Holland. (f. 34.).

FIG. 34.



Purple Hydropeltis. Fl. Jul. Aug. Clt. 1798. Pl. flt.

Cult. This pretty little plant must be grown in a pond or a cistern of water, and it may be increased by offsets. The plant being extremely difficult to preserve is seldom to be seen in the gardens of Britain.

Order X. NYMPHIA'CEÆ (plants agreeing with *Nymphæ'a* in many important characters.) D. C. prop. med. ed. 2. p. 119. syst. 2. p. 39. prod. 1. p. 113.

Calyx of 4-5-sepals (f. 36. *a. b.*), inserted in the receptacle (f. 36. *b.*), but not articulated with it. Petals and stamens disposed in one or numerous series, the latter inserted a little higher up than the former, alternate with the sepals. Filaments flattish, sometimes drawn out beyond the cells of the anthers; anthers adnate linear, opening inwardly by two chinks (f. 36. *e.*). Ovaries or carpels numerous, 8-24, sometimes half immersed in the large honeycombed torus (f. 35. *a.*), each bearing a style (f. 35. *e.*), sometimes inclosed within a large and pitcher-shaped torus (f. 36. *c.*), membranous 1-2 or many-seeded. The styles in those with the free carpels are distinct and crowned by simple stigmas (f. 35. *e.*), in those with the inclosed carpels they are peltately-rayed above the urceolus (f. 36. *d.*) as in *Papàver*, they are connate at the base, but free at the apex (f. 36. *d.*). Seeds in the free carpels 2 or solitary (f. 35. *b.*), in the inclosed carpels innumerable, these last are fixed laterally to the parietes of the carpels, inverted, ovate-globose, dotted, girded by a somewhat gelatinous follicle-formed aril, and with the cells filled with gelatinous pulp when mature. Albumen sometimes wanting in the seeds of the free carpels, but farinaceous in the seeds of the inclosed carpels. Embryo small, turbinately globose, situated on the outside of the albumen at the base of the seed, therefore inverted in the fruit; it appears undivided at first sight, because it is inclosed in a membranous covering (this is not the case in any other order) when this covering is torn asunder it exhibits two thick leafy cotyledons. The covering falls off of itself before germination. All aquatic floating plants yielding somewhat milky juice, and to gardeners possessed of great interest on account of the elegant form and various hues of their flowers. The trunk of the root lies in a horizontal position in the mud, emitting numerous fibres, these are eatable when dried and pounded, and are made into cakes by the inhabitants of vàrious countries. The leaves are peltate or cordate, usually floating on the surface of the water, involute before expansion. Peduncles rising from the trunk of the root, axillary, or supra-axillary, constantly naked and 1-flowered. Flowers imbricate in the bud, large, white, yellow, blue and red, usually sweet-scented, resembling those of *Magnòlia*, *double Pæonys* or *Poppies*, lying on the surface of the water or raised a little above it, when they begin to decay the peduncle becomes inflexed and sinks in the water, where the capsules soon decay and relieve the carpels, which soon after vegetate. The seeds of the *Lotos* are pounded by the Egyptians and mixed among flour. The *Cýamus* or *Pythagorean-bean* of antiquity is the produce of the *Nolúmbium*, a stately aquatic, which abounds in all the hotter countries of the East, where its roots are frequently used as an article of food. This very natural order, from the structure of its flower, is intermediate between *Ranunculàceæ*, and *Papaveràceæ*, therefore joins the first and second cohort of *Thalamiflòræ*. The tribe *Nelumbòneæ* agrees in a certain degree with *Pæònia Moután* in the torus being elevated into urceolus around the ovaries. The tribe *Nymphæ'ea* agrees with *Papàver* in the structure of its fruit. The order differs from *Ranunculàceæ* in the anthers being adnate inwardly, as well as in the seeds being always inverted. It is distinguished from *Papaveràceæ* in the fruit opening irregularly, as well as in the anthers being adnate, and the sepals permanent not deciduous. It also differs from *Hydropeltideæ* in the torus being elevated and surrounding the ovaries. The seeds retain their vegetative power a considerable time, those of the *Nelúmbium* will vegetate after having been kept 30 years. This order was formerly the cause of much difference among botanists as to its station in the natural classification, its structure being of so doubtful a character as to leave room for disputing whether it belonged to *Dicotyledòneæ* or *Monocotyledòneæ*, but this has been clearly settled by M. De Candolle. See the structure of the embryo.

Synopsis of the Genera.

Tribe I.

Nelumbo'neæ. (D. C. syst. 2. p. 43. prod. 1. p. 113.). Carpels many, distinct, 1-2-seeded, each bearing a style (f. 35. *e.*)

half immersed in deep pits, in an elevated obconical torus (f. 35. *a*.).

1 NELU'MBIUM. Character the same as the tribe.

TRIBE II.

NYMPHÆE'Æ (D. C. syst. 2. p. 43. prod. 1. p. 114.). Carpels many-seeded, inclosed within the torus, with the stigmas radiating upon the top of the berry-formed fruit (f. 36. *d*.).

2 EURY'ALE. Sepals petals and stamens adhering to the torus, a great way up, and therefore the fruit appears half inferior.

3 BARCLA'YA. Sepals 5 distinct, absolutely hypogynous. Corolla seated upon the top of the fruit, tubular above, corollaceous, bearing the stamens on the inside of the tube, with the throat 8-10-lobed.

4 NYMPHÆ'A. Sepals inserted at the base of the torus. Petals and stamens covering the torus, and adhering to it a great way up, and therefore the fruit appears as if it were half-inferior.

5 NU'PHAR. Sepals petals and stamens inserted at the base of the torus (f. 36. *b*.), and therefore the berry appears as if it were superior.

Tribe I.

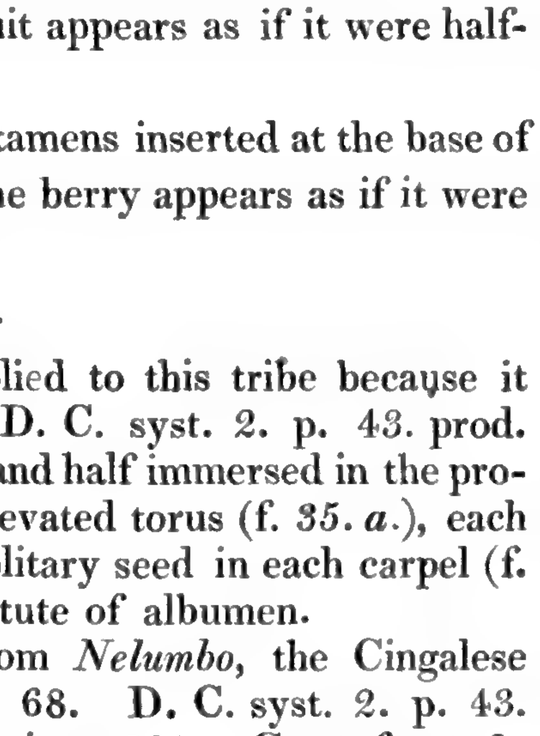
NELUMBO'NEÆ (a name applied to this tribe because it contains *Nelùmbium*, which see.) D. C. syst. 2. p. 43. prod. 1. p. 113. Carpels many, distinct, and half immersed in the profoundly honey-combed obconical, elevated torus (f. 35. *a*.), each bearing a style (f. 35. *e*.), with a solitary seed in each carpel (f. 35. *b*.), which is exarillate and destitute of albumen.

I. NELU'MBIUM (latinized from *Nelumbo*, the Cingalese name of *N. speciòsum*.) Juss. gen. 68. D. C. syst. 2. p. 43. prod. 1. p. 113.—Nelúmbo, Tour. inst. 261. Gært. fruct. 1. p. 73. t. 19.

LIN. SYST. *Polyándria, Polygýnia.* Character of the genus the same as that of the tribe. Herbs emulating the habit of *Nymphæ'a*. Flowers large, shewy, white, red or yellow. Both leaves and flowers rising above the surface of the water.

1 N. SPECIO'SUM (Willd. spec. 2. p. 1258. *Var.* α et β.) corolla polypetalous; anthers drawn out beyond the cells into a club-shaped appendage. 4. S. W. Native in slow running streams and tranquil waters in the warmer parts of Asia, but formerly common in Egypt (Herod. and Theop.), but now rare (Delile), in Persia (Pers.), in Malabar (Rheed.), in India (Burm.), in Ceylon (Herm.), in Java (herb Deless.), introduced into the Philippine and Molucca islands (Rumph.), Nipaul (herb. Lamb.), Cochinchina and China (Lour.), about Siam (Kæmpf.), Japan (Thunb.). Sims, bot. mag. t. 903. Lam. ill. t. 453. Nymphæ'a Nelúmbo. Var. α. Lin spec. 730. Delil. fl. ægyp. descrip. p. 164. t. 61. Nelúmbo nucífera, Gært. fruct. 1. p. 73. t. 19. f. 2. Mirb. ann. mus. 13. p. 465. t. 34. Nelúmbium Asiáticum, Rich. ann. mus. 17. p. 249. t. 9. f. 49 to 57. Cýamus mýsticus, Sal. ann. bot. 2. p. 75. Cýamus Nelúmbo, Smith, exot. bot. 1. p. 59. t. 31, 32.

FIG. 35.



Nelúmbo Indica, Pers. Flowers very beautiful, smelling of anise, commonly rose-coloured, seldom white (f. 35.).

Var. β, *Tamàra* (Rheed. mal. 11. p. 59. t. 30.) outer stamens sterile, dilated at the top, winged, obcordate; appendage rising from a notch at the apex. 4. S. W. Native of Malabar. *Tamàra* is the name of this plant in Malabar.

Trunk of the root horizontal, fleshy, white, sending out many fibres from the under surface. Petioles long, rising beyond the surface of the water, scabrous with acute tubercles. Leaves large, 1 or 2 feet in diameter, exactly peltate in the centre, orbicular entire, glabrous, under surface palest, margins somewhat waved. Peduncles longer than the petioles, erect, scabrous. Flowers large, emulating *Pæònia* and *Papàver*, white or red. Fruit resembling an instrument once used in play by the French, by the very antique name *Lotos*. (D. C.). It was known to the Greeks, and is said by Herodotus, Theophrastus, and others, to be a native of Egypt, but no modern traveller has observed it in that country. There can, however, be no doubt of its having actually existed there, either naturally or cultivated, since the terms in which it is described by those authors are too clear and decisive to be mistaken, and their accounts are confirmed by ancient Egyptian sculptures and mosaics, which are still preserved, and testify that from the earliest times it, as well as the proper *Lotos*, has obtained a religious reverence. It is remarkable that neither Herodotus nor Theophrastus, the most ancient writers by which it is described, have attributed any sacred character to it, but speak of it as only used as food by the Egyptians. Both root and seeds are esculent, sapid and wholesome. They are accounted cooling and strengthening, and to be of service in extreme thirst, diarrhœa, tenesmus, vomiting, and too great internal heat. In China it is called *Lien-wha*, and the seeds, and slices of the hairy root, with the kernels of apricots and walnuts, and alternate layers of ice were frequently presented to the British Ambassador and his suite at breakfasts given by some of the principal Mandarins. The roots are laid up by the Chinese in salt and vinegar for the winter. Sir George Staunton remarks that the leaf besides its common uses, has, from its structure, growing entirely round the stalk, the advantage of defending the flower and fruit arising from its centre from contact with the water, which might injure them. He also remarks that the stem never fails to ascend in the water from whatever depth, unless in a case of sudden inundation, until it attains the surface, when its leaf expands, rests upon it, and often rises above it. Many varieties of the plant are distinguished by the Chinese; one of them with pure-white flowers, and another having about an hundred petals white or rose-coloured. From the root of the *Nelumbo* Sir George Staunton says the Egyptians are supposed to have prepared their *Colocasia*, but as the plant is no longer to be found wild in that country, from which circumstance some naturalists infer that it never was indigenous there, but cultivated by the inhabitants with extreme care. The ancient Romans made repeated efforts to raise it among them from seeds brought out of Egypt. Dr. Patrick Browne is of opinion that the ancients confounded two plants under the name of *Lotos* or *Egyptian-bean*, and that under these titles they described the upper parts of the *Nelúmbium* and the roots of *Calàdium Colocàsia*, now commonly called *Coccos* in Jamaica. Thunberg says that it is considered as a sacred plant in Japan, and pleasing to their deities, and that the images of their idols were often drawn sitting on its large leaves. Loureiro relates that it abounds in muddy marshes in India and China, and is cultivated in large handsome pots in the gardens and houses of the Mandarins. The Chinese have always held this plant in such high value, that at length they regarded it as sacred. The seeds are somewhat of the size and form of an acorn, and of a taste more delicate than that of almonds. The ponds in India and

China are literally covered with the plant, and exhibit a very shewy appearance when it is in flower, and the flowess are no less fragrant than handsome. It is the *Pythagorean bean* of the ancients, and has been regarded from the most remote periods as an emblem of fertility. Perhaps many species are confused under *N. speciòsum*.

Shewy Nelumbium or Pythagorean Bean. Fl. in the summer. Clt. 1787. Pl. flt.

2 N. Ca'spicum (Fisch. in litt. D. C. l. c.) corolla polypetalous; anthers drawn out beyond the cells into a club-shaped appendage; inner petals blunt, scarcely smaller than the outer ones. ♃. S. W. Native at the mouth of the river Volga near Astracan at that part of the river called Tschulpan, growing among reeds, Nymphæas and Trapas. This plant hardly differs from the preceding, unless that the petals are all obtuse, with the inner scarcely smaller than the outer ones.

Caspian Nelumbium. Fl. summer. Clt. 1817. Pl. flt.

3 N. lu'teum (Willd. spec. 2. p. 1259.) corolla polypetalous; anthers drawn out beyond the cells into a linear appendage. ♃. F. W. Native of North America in lakes and ponds in Virginia, Carolina, Florida and Louisiana, also near Philadelphia in the ditches and ponds of Brobston's meadows. Turp. ann. mus. 7. p. 210. t. 11. f. 27. Nymphæ'a nelúmbo β, Lin. spec. 730. Cýamus flavicómus, Sal. ann. bot. 2. p. 75. Cýamus lùteus, Nutt. gen. amer. 2. p. 25.—Swert. floril. 2. t. 22. f. 4. Very like *N. speciòsum* in habit as well as character, but the flowers are smaller. Flowers yellow, resembling a double tulip. The seeds are very agreeable to eat, and eagerly sought after by children and Indians. By the latter it is supposed they were introduced to those ponds near Philadelphia, as there is no other instance known of their being found so far north. Walter mentions his *Nelumbo* to have white flowers, but this variety has not been seen by any other person.

Yellow Nelumbium. Fl. July. Clt. 1810. Pl. flt.

† *Species not sufficiently known.*

4 N. codophy'llum (Raf. fl. lud. p. 22. no. 64.) leaves tomentose underneath. ♃. F. W. Native of lakes in Louisiana. Napoleone, Rob. trav. louis. 1. p. 355. 2. p. 322. and 441. ex Rafinisque. Flowers yellow, larger than those of *N. lùteum*. Petals numerous, unequal. Seeds eatable. Leaves 2 feet in diameter, campanulate, entire, but look as if they were fringed on the margins. Scapes scabrous with acute tubercles.

Bell-leaved Nelumbium. Pl. flt.

5 N. pentape'talum (Willd. spec. 2. p. 1259.) flowers pentapetalous. ♃. F. W. Native of North and South Carolina. Cýamus pentapétalus, Pursh. fl. amer. sept. 2. p. 398. Nymphæ'a pentapétala, Walt. fl. carol. 155. Flowers large, white. Mr. Pursh saw a specimen of this doubtful plant in the possession of a gentleman in Carolina, which ascertains its existence, but he unfortunately took no notes at the time, being in expectation of seeing the living plant.

Five-petalled Nelumbium. Pl. flt.

6 N. Jamaice'nse (D. C. syst. 2. p. 47.) ♃. S. W. Native of Jamaica in ponds. Nymphæa with orbicular, rayed leaves, and obversely conical fruit, and large imbedded seeds. P. Browne, jam. 343. no. 2. N. speciòsum γ, Willd. spec. 2. p. 1259. Nymphæ'a Nelúmbo, Lunan. hort. jam. 2. p. 272. Flowers rose-coloured.

Jamaica Nelumbium. Fl.? Clt. 1823. Pl. flt.

Cult. The species of this beautiful aquatic genus should be grown in cisterns, tubs, or large pots in a rich loamy soil; they require a strong heat to flower in perfection. The cistern, pot, or tub should be kept full of water all the time the plants are growing, but may be allowed to get dry when the flowering season is over. The plants may be increased by dividing the roots, but are obtained more readily from seeds, which vegetate freely (Swt. cult.). None of the species have flowered in this country except the *N. speciòsum;* they all require to be kept in a very warm situation in a stove.

Tribe II.

NYMPHÆ'EA. (D. C. syst. 2. p. 48. D. C. prod. p. 114.) Carpels numerous, many-seeded, inclosed within the enlarged torus (f. 36. *c.*). Stigmas radiated on the top of the berry-formed fruit (f. 36. *d.*). Seeds arillate, fixed to the sides of the carpels. Albumen mealy.

II. EURY'ALE (*Euryale*, one of the Gorgons, alluding to the thorny menacing habit of the plant). Sal. ann. bot. 2. p. 73. D. C. syst. 2. p. 48. prod. 1. p. 114.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 4 sepals, inserted in the torus and adhering to it. Petals 16-28, in 4-7 series. Stamens numerous. Carpels 16-20. Fruit appearing half inferior from the sepals petals and stamens adhering half way up. An elegant aquatic, covered all over with prickles. Leaves peltate, large, orbicular. Flowers blueish-purple or violet, not so large as those of the commoner species of *Nymphæ'a.*

1 E. fe'rox (Sal. ann. bot. 2. p. 73.) ♃. S. W. Native of the East Indies in the lakes called Gumtoe and Gogra; also in China in the province of Kianang and Nipaul. Annesléa spinòsa, Andr. bot. rep. t. 618. Petioles and calyxes hispid, with stiff prickles. Leaves large, scutate, about a foot in diameter. Carpels the size of a pea, inclosed within the torus. Trunk of root esculent.

Fierce Euryale. Fl. Sept. Clt. 1809. Pl. flt.

Cult. This singular aquatic plant requires to be always kept in water in a hot-bed or stove; it will seed freely if some pollen be shaken on the stigmas when it is in bloom, which is the only method of increasing it.

III. BARCLA'YA (in honour of Robert Barclay, F. L. S. of Bury Hill, Surrey, eminently distinguished for his love of plants, and who has introduced numerous new plants to England, more particularly from Mexico and the Mauritius). Wall. in Linn. trans. vol. 15. p. 442. t. 18.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 5 distinct sepals inserted beneath the ovary. Receptacle widened into a globose ovary at the base, tubular and corollaceous at the apex, with the throat 8-10-lobed; lobes unequal, connivent, disposed in 2-3 series. Stamens numerous, nodding, fixed to the inside of the tube of the torus, and inclosed within the same; superior ones sterile and branched. Anthers naked. Styles numerous radiating and inserted in the bottom of the tube, connate at the base. Berry fleshy, globose, many-celled, many-seeded, surrounded at the base by the permanent calyx and crowned by the permanent corolla. Seeds globose, beset with fleshy bristles, albuminose, inverted. A floating aquatic with appearance of *Potamogèton.* Leaves thin, elongated, oblong, rather narrowest at the base, rather cordately-hastate and a little peltate at the base, feather-nerved, shining, rusty beneath and tomentose. Scape 1-flowered, about equal in length to the slender petioles. Flowers erect, smooth, of a greenish-colour, scentless. This genus differs from *Eurỳale* in the calyx being absolutely hypogynous.

1 B. longifo'lia (Wall. l. c.) ♃. W. S. Native of the East Indies in Pegu near Rangoon in stagnant water.

Long-leaved Barclaya. Fl. Aug. Pl. floating.

Cult. For the cultivation see *Euryale.*

IV. NYMPHÆ'A (*νυμφη, nymphe*, a water nymph, in refer-

ence to the habitation of the plants). Neck. elem. no. 1828. Tourn. Lin. & Juss. D. C. syst. 2. p. 49. prod. 1. p. 114.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 4 sepals, girding the base of the torus. Petals 16-28, adnate to the torus, elevated about the ovary and covering the same, and therefore at first sight appearing inserted in it. Stamens numerous, disposed in many series, inserted in a similar way above the petals. Shewy aquatic herbs. Trunk of root fleshy, horizontal, emitting fibres below. Leaves large, cordate or peltate, floating. Flowers large, white, rose-red, and blue, never yellow. The genus is called water-lily in English, from the plants growing in water, and the flowers having the appearance of a lily.

Sect. I. Cya'næa (from *κυανος, kyanos,* blue; because the flowers are blue or blueish). D. C. syst. 2. p. 49. prod. 1. p. 114. Anthers drawn out at top. Flowers blue or blueish. Leaves peltate, entire or bluntly sinuated.

1 N. scutifo'lia (D. C. syst. 2. p. 50.) leaves peltate, bluntly and sinuately toothed, not dotted, smooth on both surfaces, 2-lobed at the base; lobes incumbent; anthers appendiculated at the top; stigmas 20-rayed. ♃. S. W. Native of Cape of Good Hope in rivers. N. cærùlea, Andr. bot. rep. t. 197. Sims, bot. mag. t. 552. Castàlia scutifòlia, Sal. ann. bot. 2. p. 72. This plant differs from the following in the flowers being of a more intense blue, as well as in the sepals and petals being blunter. Leaves constantly sinuated.

Saucer-leaved Water Lily. Fl. June, Sept. Clt. 1792. Pl. flt.

2 N. cæru'lea (Savig. decad. ægypt. 3. p. 74.) leaves peltate, nearly entire, without dots, glabrous on both surfaces, 2-lobed at the base; lobes free; anther appendiculated at the apex; stigmas 16-rayed. ♃. S. W. Native of Lower Egypt in rice grounds and canals about Rosetta, Damietta, Kahira, &c. Savig. ann. mus. paris 1. p. 366. t. 25. Vent. malm. t. 6. Herb amat. t. 338. N. stellàta, var. Sims, bot. mag. 2058. Flowers very fragrant. Root pear-shaped, blackish. That this species was sacred amongst the ancient Egyptians is obvious from the representations of it on their old monuments and in hieroglyphics.

Blue Water Lily. Fl. June, Sept. Clt. 1812. Pl. flt.

3 N. Madagascarie'nsis (D. C. syst. 2. p. 50. prod. 1. p. 114.) leaves peltate, bluntly-sinuated, not dotted, glabrous on both surfaces, 2-lobed at base; lobes divaricate; anthers appendiculate at the apex; stigmas 8-10-rayed. ♃. S. W. Native of the island of Madagascar. Perhaps this is a variety of *N. stellàta.* Flowers blue.

Madagascar Water Lily. Pl. flt.

4 N. stella'ta (Willd. spec. 2. p. 1153.) leaves peltate, entire, not dotted, glabrous on both surfaces, 2-lobed at the base; lobes divaricate; anthers appendiculate at the apex; stigmas 8-12-rayed. ♃. S. W. Native of Malabar in tranquil rivulets and lakes, also in Coromandel, Tranquebar, and Java. Andr. bot. rep. t. 330. Citambel, Rheed. mal. 11. p. 53. t. 27. Castàlia stellàta, Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa 1. p. 643. Castàlia stellàris, Sal. ann. bot. 2. p. 72. N. Malabàrica var. cærùlea, Lam. dict. 2. p. 457. Flowers blue or blueish.

Starry Water Lily. Fl. June, Sept. Clt. 1803. Pl. flt.

5 N. pulche'lla (D. C. syst. 2. p. 51.) leaves peltate, nearly entire, not dotted, glabrous on both surfaces, 2-lobed at the base; lobes blunt, somewhat diverging; anthers appendiculated at the apex; stigmas 12-rayed. ♃. S. W. Native of Guayaquil. Flowers white, one half smaller than those of *N. álba.* Petals 8, oblong, acuminated, shorter than the calyx.

Neat Water Lily. Fl. June, Sept. Pl. flt.

6 N. cya'nea (Roxb. hort. beng. p. 41.) ♃. S. W. Native of the East Indies. N. Cahlàra, Donn, cant. ed. 7. Leaves peltate. Flowers blue. A species scarcely known.

Blue Indian Water Lily. Fl. June, Sept. Clt. 1809. Pl. flt.

Sect. II. Lòtos (the name *Lotos* is applied to this section because the plants it contains agree in character with the Egyptian *Lotos. N. Lotus.*) D. C. syst. 2. p. 52. prod. 1. p. 115. Anthers not drawn out at the top into an appendage. Flowers white, rose-coloured, or red. Leaves peltate, rarely entire, usually deeply toothed, and usually pubescent on the under surface, not glabrous as the last section.

7 N. edu'lis (D. C. syst. 2. p. 52.) leaves peltate, broad-oval, quite entire, under surface pubescent. ♃. S. W. Native of the East Indies in fens. Castàlia edùlis, Sal. ann. bot. 2. p. 73. N. Cotèka, Roxb. mss. with a figure in Banks' Libr. N. esculénta, Roxb. hort. beng. p. 41. Roots esculent. Flowers small, white, or red?

Eatable-rooted Water Lily. Fl. in Botanic Garden Calcutta throughout the year, in England from June to Sept. Clt.? Pl. flt.

8 N. ru'bra (Roxb. ined. Sims bot. mag. t. 1280.) leaves peltate, sharply toothed, under surface pubescent, and not spotted. ♃. S. W. Native of the East Indies. Andr. bot. rep. 503. Castàlia magnífica, Sal. parad. t. 14. Flowers deep red. Petiole inserted very near the margin of the leaf. The seeds and roots are said to be eatable, and the flowers are said to be held in superstitious veneration in Hindostan, which may arise from its affinity with the *Nelumbo,* or sacred bean.

Red-flowered Water Lily. Fl. Ju. Aug. Clt. 1803. Pl. flt.

9 N. ròsea (Sweet, hort. brit. p. 15.) leaves peltate, sharply toothed, under surface pubescent, upper surface dark-green. ♃. S. W. Native of the East Indies. N. rubra var. β, ròsea, Sims, bot. mag. t. 1364. D. C. syst. 2. p. 52. prod. 1. p. 115. Flowers rose-coloured, not deep-red, as in the preceding species. Petiole inserted very near the margin of the leaf.

Rose-coloured-flowered Water Lily. Fl. July, Aug. Clt. 1803. Pl. flt.

10 N. pube'scens (Willd. spec. 2. p. 1154.) leaves peltate, sharply toothed, orbicularly-reniform, under surface velvety-pubescent and spotted; lobes roundish. ♃. S. W. Native of the East Indies, Malabar, Moluccas, Tranquebar, Ceylon, Java, and about Bombay, and also on the western coast of Africa at Waree and Acra, &c. in tranquil water. N. Lòtus, Burm. ined. Beauv. fl. d'ow. et de ben. 2. p. 50. t. 88. Jones asiat. reser. 3. p. 285. Castàlia sàcra, Sal. parad. no. 14. Castàlia pubéscens, Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 643. This plant is called the *Lotos* throughout India, and is one of the sacred plants of the Hindus. Flowers white; petals rather unequal, expanded throughout the day and closing at night, breathing a vinous pungent odour.

Pubescent-leaved Water Lily. Fl. in its native country in the dry season; in England from June to Sep. Clt. 1803. Pl. flt.

11 N. lòtus (Lin. spec. 729. exclusive of the synonyms of Browne and Sloane,) leaves peltate, sharply serrated, under surface pilose at the nerves, and pubescent between them. ♃. S. W. Native of Egypt, in slow running streams, especially in the Nile near Rosetta and Damietta, and in rice fields during the time they are under water, &c. Del. fl. ægyp. descr. p. 159. t. 60. f. 1. Hill. veg. syst. 16. p. 39. t. 39. Castàlia mýstica, Sal. ann. bot. 2. p. 73. Root tuberous, eatable. Flowers large, white; sepals red at the margins. This is the *Lotos,* which was celebrated by the ancient Egyptians, sacred to Isis, and was sometimes engraven on their very ancient coins. This is not to be confounded with the *Lotos* of the Lotophagi, which is *Zizyphus Lòtus* (see Desf. in mem. acad. par. 1788. p. 443.) nor with the *Lòtos* of Homer and Dioscoridis, which is evidently a species of *Lòtus* or *Trifòlium,* nor with the *Lòtos* of Hippocrates, which is *Céltis austràlis,* nor with the *Italian Lotos,* which is *Diospỳrus Lòtus.* The seeds dried and ground were made into a kind of bread by the ancient Egyptians,

as well as the roots. The ancients record the sinking of the flower under water at night. It is conceived that this flower became sacred to superstitious veneration in Egypt in consequence of its resemblance to the true East Indian *Lotos* or *Nelumbo;* the latter, from its mode of vegetation, was adopted in the most remote ages to serve as an emblem of fertility. It seems therefore a sort of substitute or type, and strengthens the theory of the mythology of Egypt having migrated thither from India. The *Nelumbo* was brought to Egypt, but has never perpetuated itself there to any great extent.

Egyptian *Lotos*. Fl. June, Sep. Clt. 1802. Pl. flt.

12 N. THERMA'LIS (D. C. syst. 2. p. 54.) leaves peltate, sharply-toothed, glabrous on both surfaces; auricles approximate. ♃. S. W. Native of Croatia in the hot river called Pecze, in water 19-28 degrees of Reaum. Therm. not far from Varasdin. N. Lòtus, Wald. et Kit. hung. 1. p. 13. t. 15.? Sims, bot. mag. t. 792. Castàlia mýstica, Sal. parad. no. 14. Flowers white, having a somewhat vinous odour.

Hot-water Water Lily. Fl. in its native country from the end of April; in England from June to Sept. Clt. 1802. Pl. flt.

13 N. A'MPLA (D. C. syst. 2. p. 54.) leaves peltate, sharply-toothed, quite glabrous on both surfaces, with the nerves on the under surface very prominent. ♃. S. W. Native of Jamaica, St. Domingo, Gulph of Mexico about Vera Cruz, Guiana, &c. in tranquil water. Castàlia ámpla, Sal. ann. bot. 2. p. 73. par. no. 14. N. Lòtus, Aubl. guian. 1. p. 533. Flowers white.

Var. β, *Rudgeàna* (Meyer. prim. esseq. p. 198.) This plant is distinguished from *N. Lòtus* by the leaves being minutely tubercled on the upper surface.

Ample-leaved Water Lily. Fl. June, Sept. Clt.? Pl. flt.

14 N. VERSI'COLOR (Roxb. hort. beng. p. 41.) leaves peltate, with the margin and between the recesses sinuately-toothed, full of pustules, glabrous on both surfaces. ♃. S. W. Native of Bengal in tranquil water. Sims, bot. mag. 1189. Flowers white, changing to red, and several of the outer petals are green, and furrowed on the back with green lines. This plant is multiplied by the tubers, which hang by a thread from the main root, which are about the size of a nut, and fall off from the mother plant with the fading of the leaves.

Party-coloured Water Lily. Fl. in England from July to Sept. in Bengal throughout the year. Clt. 1807. Pl. flt.

Sect. III. Casta'lia (*Castalia*, a fountain in Asia in the suburbs of Daphne.) D. C. syst. 2. p. 55. prod. 1. p. 115. Anthers not drawn out at the apex. Flowers white. Leaves cordate, not peltate, glabrous, quite entire.

15 N. RENIFO'RMIS (Walt. fl. carol. 155.) leaves kidney-shaped, stigmas 16-rayed. ♃. G. W. Native of Carolina. Nelúmbium renifórme, Willd. spec. 2. p. 1260. Cýamus renifórmis, Pursh. fl. amer. sept. 2. p. 398.—Deless. icon. sel. 2. t. 5. Flowers white, a little larger than those of *N. álba;* anthers yellow, as in the rest of this section.

Kidney-shaped-leaved Water Lily. Fl. July. Clt. 1823. Pl. flt.

16 N. A'LBA (Lin. spec. 729.) leaves cordate, quite entire; stigmas 16-rayed; rays ascending. ♃. H. W. Native throughout Europe in ditches, lakes, and rivers; plentiful in Britain. Smith engl. bot. 160. Fl. dan. 602. Schkuhr. handb. 2. t. 142, &c. Castàlia speciòsa, Sal. ann. bot. 2. p. 72. Seeds horizontal or deflexed; obovate, red. According to Linnæus, the flowers of this plant raise themselves out of the water, and expand about 7 o'clock in the morning, and close again, reposing upon the surface of the water, about 4 o'clock in the evening. The roots have a bitter astringent taste; they are used in Ireland, in the highlands of Scotland, and in the island of Jura, &c. to dye a dark brown or chesnut colour. Swine are said to eat it; kine and horses to refuse it. The flower, herb, and roots were formerly used in medicine, but are now become obsolete. It was reputed by the ancients as an antiphrodisiac, and as a remedy in dysentery, and some other morbid discharges; to the latter purpose its astringency might in some instances make it well suited.

Var. β, *mìnor* (Besl. hort. eyst. vern. ord. VII. t. 3. f. 1. Weim. phyt. 3. p. 456. t. 761. f. c.) ♃. H. W. Native of Alsace near Argentina; in Baden near Linkenheim, and Moscow near Gorenki. Every part of this plant is smaller than in the species.

Common *White* Water Lily. Fl. June, July. Britain. Pl. flt.

17 N. ODORA'TA (Ait. hort. kew. ed. 1. vol. 2. p. 227. ed. 2. vol. 3. p. 292.) leaves cordate, quite entire, with the nerves and veins on the under surface very prominent; stigmas 16-20-rayed; rays erect, inflexed at the top. ♃. H. W. Native of North America from Canada to Carolina; about Philadelphia at Glocester Point and in New Jersey; abundant about Quebec; in deep ditches and slow running rivers. Sims, bot. mag. t. 819. Andr. bot. rep. t. 297. Bigel. amer. med. bot. t. 55. N. álba, Walt. fl. carol. 155. This plant is very like *N. álba*, and has by many authors been confounded with it, but it is truly distinct. Flowers white, tinged with red, sweet-scented, expanding in the morning, but closing after meridian. The roots of this plant are amongst the strongest astringents of North America. When fresh, if chewed in the mouth, they are extremely stiptic and bitter. Their decoction instantly strikes a jet black colour with sulphate of iron, and yields a dense white precipitate to a solution of gelatin. Tannin and gallic acid are to be considered its most characteristic ingredients. The roots of this plant are kept by most of the apothecaries in North America, and are much used by the common people in the composition of poultices. They are no doubt often injudiciously applied to suppurate tumors, since their astringency must be rather a discutient than a promotive of suppuration. They are occasionally used by physicians in cases where astringent applications are requisite, and answer a purpose somewhat analogous to that of lead poultices and alum curds. The whole of the genus possess the same qualities.

Sweet-scented Water Lily. Fl. June, July. Clt. 1786. Pl. flt.

18 N. MI'NOR (D. C. syst. 2. p. 58.) leaves cordate, quite entire, with the nerves and veins very prominent on the under surface; peduncles and petioles rather purplish and rather pilose; stigmas 16-20-rayed. ♃. H. W. Native of North America about New York and in Canada. N. odorata β minor, Sims, bot. mag. t. 1652. β, ròsea, Pursh, fl. bor. amer. 2. p. 368. Flowers white, smaller than those of *N. odoràta*, rose-coloured on the outside.

Smaller-flowered Water Lily. Fl. July. Clt. 1812. Pl. flt.

19 N. NI'TIDA (Sims, bot. mag. t. 1359.) leaves cordate, quite entire; nerves not prominent on the under surface; petioles smooth; petals blunt; stigmas 12-20-rayed. ♃. H. W. Native of Siberia in lakes and in the river Lena, and in Dauria in still water. N. odoràta, Willd. hort. berl. t. 39. Like *N. odoràta* and *N. álba*. Root perpendicular. Flowers white, scentless, a little smaller than those of the above named species. Stamens yellow.

Shining-leaved Water Lily. Fl. June, July. Clt. 1809. Pl. flt.

20 N. PYGMÆ'A (Ait. hort. kew. ed. 2. vol. 3. p. 293.) leaves cordate, quite entire; nerves not prominent; petioles smooth; petals acute; stigmas 8-rayed. ♃. H. W. Native of China and eastern Siberia. Sims, bot. mag. 1525. Castàlia pygmæ'a, Sal. parad. t. 68. Flowers white, smelling like those of *Polánthus tuberòsus*. A small plant. Torus greenish-yellow.

Pygmy Water Lily. Fl. June, Sep. Clt. 1805. Pl. flt.

21 N. BLA'NDA (Meyer prim. fl. esseq. p. 201.) leaves cordate, quite entire, with the nerves on the under surface channelled; petals 16, acuminated. ♃. S. W. Native of Essequibo, in stagnant and slow running water. N. glandulífera, Rodsch. obs.

p. 76. Like *N. odoràta*, but is easily distinguished from it by the nerves of the leaves being channelled. Flowers white.

Bland Water Lily. Fl. July, Sep. Clt. 1820. Pl. flt.

22 N. ACUTI'LOBA (D. C. prod. 1. p. 116.) leaves ovate, somewhat toothed; lobes very acute; petals 16, acute; stigmas 16-rayed. ♃. S. W. Native of China.—Braam. icon. chin. t. 18.

Acute-lobed-leaved Water Lily. Pl. flt.

Cult. The stove species, or those from warm climates, may be grown in large pots, or pans of water placed in a warm part of the stove, with several inches of rich loamy soil in the bottom. They thrive well in a water-tight frame, placed on a hot-bed in the summer season, where we have seen them flower freely. The hardy species should be planted in ponds, cisterns, or canals, where they will make a fine appearance. They are all either increased by seeds, dividing the roots, or separating the tubes. Mr. Kent, formerly of Clapton, who cultivated exotic aquatics to great perfection, found that the bulbous-rooted *Nymphæ'as*, if checked in their growth for want of water, from cold or excessive heat, were apt to form bulbs at their roots, and cease growing for that season. Hence the necessity of a regular and powerful moist heat to make them flower freely.

V. NU'PHAR (from *naufar*, or *nyloufar*, the Arabic name of *Nymphæ'a*.) Sibth. and Smith, prod. fl. græc. 1. p. 361. D. C. syst. 2. p. 59. prod. 1. p. 116.

LIN. SYST. *Polyándria, Polygýnia.* Calyx of 5-6 petal-like sepals (f. 36. *a. b.*). Petals 10-18, much smaller than the sepals with their backs, melliferous. Stamens indefinite, which are, as well as the sepals and petals, inserted at the base of the torus (f. 36. *b.*), and therefore the berry appears as if it were superior. Stigmas 10-18, radiated (f. 36. *d.*). Carpels 10-18, inclosed within the torus. Elegant aquatic herbs. Rhizoma or trunk of root thick, horizontal. Petioles and peduncles smooth, rising a little above the water. Flowers yellow.

1 N. LU'TEA (Smith, prod. fl. græc. 1. p. 361.) calyx of 5-sepals; stigmas entire, 16-20-rayed, profoundly umbilicated; leaves oval-cordate; lobes approximate; petioles triquetrous, with acute angles. ♃. H. W. Native throughout the whole of Europe and Siberia, in ditches, lakes, and slow running rivers; also of North America between lat. 54° and 64°. Nymphæ'a lùtea, Lin. spec. 729. Fl. dan. t. 603. Smith, engl. bot. t. 159. Schrank. fl. mon. 1. t. 20 Schkuhr. handb. 2. t. 142. Nymphosánthus vulgàris, Rich. ann. mus. 17. p. 230. t. 9. f. 51 and 52. Sepals 5, very blunt. Petals much smaller, truncate, with their backs melliferous. Flowers smelling like brandy. Linnæus says that swine are fond of both the leaves and roots; that goats are not fond of them; and that kine, sheep, and horses refuse them, and also that crickets are driven out of houses by the smoke in burning the roots; they and cock-roaches are destroyed by the roots rubbed or bruised with milk.

Common *yellow* Water Lily. Fl. June, July. Britain. Pl. flt.

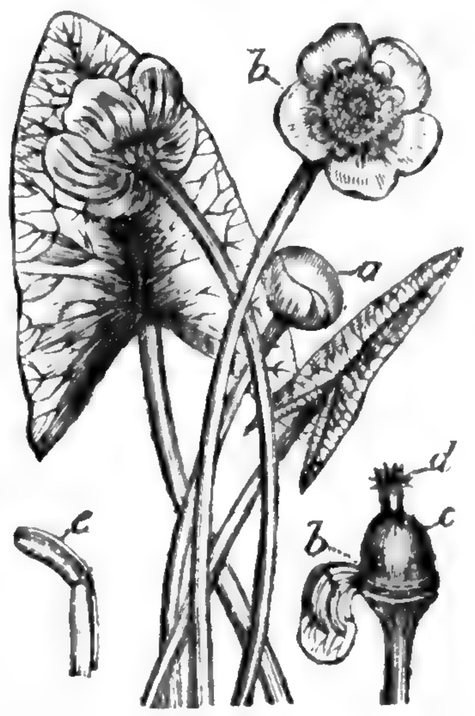
2 N. PU'MILA (Smith, engl. bot. t. 2292.) calyx of 5-sepals; stigmas lobed 10-rayed; leaves oblong-cordate, dotted, somewhat pubescent; lobes approximate; petioles semi-cylindrical at the base, but triquetrous at the top. ♃. H. W. Native of Germany, Lapland, and Norway, in slow running rivers, and mountain lakes; also in the mountain lakes of Scotland, especially in a lake at the foot of Ben Cruachan, Loch Lomond, and several other lakes. Nymphæ'a pùmila, Hoffm. fl. germ. 1800. p. 241. N. lùtea *β* mínima, Willd. spec. pl. 2. p. 1151. Nùphar mínima, Smith engl. bot. t. 2292. Plant one-half smaller than *Nup. lùtea.*

Dwarf yellow Water Lily. Fl. June, July. Scotland. Pl. flt.

3 N. KALMIA'NA (Ait. hort. kew. ed. 2. vol. 3. p. 295.) calyx 5-sepalled; stigmas toothed, 8-10-rayed; leaves cordate, somewhat emersed; lobes somewhat approximate; petioles nearly cylindrical. ♃. H. W. Native of North America throughout Canada and Carolina, and in Newfoundland, in ponds and ditches, but rare; about Philadelphia, near the Schuylkill. Nymphæ'a Kalmiàna, Sims, bot. mag. t. 1243. Nymphæ'a lùtea, Walt. carol. 154? Nymphæ'a lùtea *β*, Kalmiàna, Mich. fl. bor. amer. 1. p. 311. Nymphæ'a microphýlla, Pers. ench. 2. p. 63.

Kalm's yellow Water Lily. Fl. July, Aug. Clt. 1807. Pl. flt.

FIG. 36.



4 N. SERI'CEA (Langd. ex Spreng. syst. 2. p. 606.) calyx 5-sepalled? stigmas toothed; leaves cordate-oblong; lobes distant at the base; peduncles and petioles have a scaly-silky appearance. ♃. H. W. Native of the Danube.

Silky yellow Water Lily. Fl. June, July. Pl. flt.

5 N. JAPO'NICA (D. C. syst. 2. p. 69.) calyx of 5-sepals; stigma 15-16-rayed; leaves oblong-sagittate, cordate; auricles acute, rather distant; petioles nearly cylindrical ♃. G. W. Native of Japan in ponds. Nymphæ'a lùtea, Thunb. fl. jap. 223. exclusive of the synonyms, Deless. icon. sel. 2. t. 6. A plant between *N. lùtea* and *N. sagittæfòlia.* (f. 36.)

Japan yellow Water Lily. Fl. June, July. Pl. flt.

6 N. SAGITTÆFÒLIA (Pursh. fl. amer. sept. 2. p. 370.) calyx of 6 sepals; petals none; anthers nearly sessile; leaves sagittately-cordate, oblong, obtuse. ♃. H. W. Native of Carolina, Georgia, and Savannah, in slow running water. Nymphæ'a sagittæfòlia, Walt. fl. car. 154. Nymphæ'a longifòlia, Mich. fl. bor. amer. 1. p. 312. Nùphar longifòlia, Smith, in Rees's cycl. no. 5. Flowers small.

Arrow-leaved yellow Water Lily. Fl. July, Aug. Clt. 1820. Pl. flt.

7 N. A'DVENA (Ait. hort. kew. ed. 2. vol. 3. p. 295.) calyx of 6 sepals; petals many, small, shorter, never exceeding the stamens; pericarp furrowed; leaves erect, cordate; lobes divaricate. ♃. H. W. Native of North America from Canada to Carolina, in lakes, ponds, and ditches, even in salt-water; very plentiful about Philadelphia, and throughout Canada. Nymphæ'a ádvena, Ait. hort. kew. ed. 1. vol. 2. p. 226. Nymphæ'a arifòlia, Sal. ann. bot. 2. p. 71. Leaves and flowers rising considerably above the surface of the water.

Stranger yellow Water Lily. Fl. Jul. Aug. Clt. 1772. Pl. flt.

Cult. As the species of this genus are all hardy except one, the *N. Japónica*, which has not as yet been introduced into Europe, they may be planted in ponds, cisterns, canals, or lakes, where they will make a beautiful appearance, a rich loamy soil suits them best, and they are propagated either by dividing the roots or by seeds, which may be thrown into the water, wherever they are intended to remain.

COHORT II. Fruit solitary or connate. Placentas parietal, intervalvular. Calyx of 2-5 sepals. Petals 4-5, rarely more. Stamens numerous, but usually 5 or 6.

ORDER XI. SARRACE'NIEÆ (containing only the genus Sarracènia). De La Pylaie, in ann. de la soc. Lin. par. 6. p. 388. Hook, fl. bor. amer. p. 33.

Calyx of 5 permanent sepals (f. 37. *a.*) which are concave at the base and furnished with a 3-leaved involucrum just under it. Corolla of 5 petals which are contracted at the base, and unquiculate (f. 37. *b.*). Stamens numerous, hypogynous (f. 37. *c.*) closely packed together; filaments shortish; anthers fixed by

their back, oblong, 2-celled (f. 37. *c.*) opening upwards from the base, hardly to the apex. Ovary 1, large, globose, with 5 longitudinal furrows (f. 37. *f.*). Style columnar, crowned by a broad, convex, leafy, 5-angled stigma (f. 37. *d.*). Capsule globose, crowned by the permanent style and stigma, 5-lobed, 5-celled, 5-valved, many-seeded (f. 37. *f.*), valves separating from the apex. Placentas 5, one in each cell closely covered with seeds, progressing from the central axis. Seeds small, minutely tubercled (f. 37. *g.*). Embryo cylindrical, cleft at one extremity into 2 cotyledons, placed at the base of a copious waxy-granular albumen, with the radicle pointing towards the hilum. The seeds are keeled on their under side, inserted by their narrowest point upon a large club-shaped, stipitate receptacle, which stands out from the central column or axis into the middle of each cell. The valves of the capsule open from above between the cells, whose dissepiments are attached to the centre of each valve, and separate from the central axis of the column. Well known singular plants, inhabitants of the swamps of North America, remarkable for the singular form of their leaves, which are tubular and hold water, and some species have lids or covers, which it is alleged shrink and close over the mouth, so as to prevent the exhalation of the water. In dry weather birds resort to them for drink. Scapes always 1-flowered. Flowers large, nodding, greenish-yellow or dark purple. This order differs chiefly from *Papaveràceæ* and *Nymphiàceæ* in having a broad, peltate, leafy stigma, but it is still nearer to the former than the latter in the capsules being furnished with intervalvular placentas.

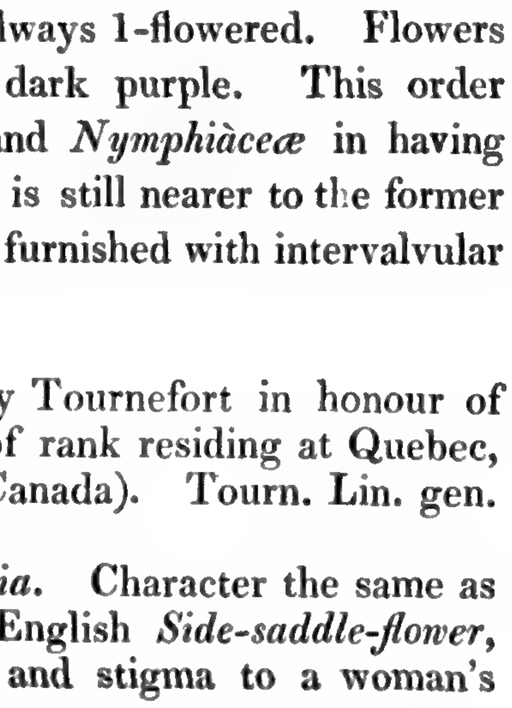
I. SARRACENIA (so named by Tournefort in honour of Dr. Sarrazin, a French physician of rank residing at Quebec, who sent this genus to him from Canada). Tourn. Lin. gen. no. 885.

Lin. syst. *Polyándria, Monogýnia.* Character the same as the order. The genus is called in English *Side-saddle-flower*, from the resemblance of the style and stigma to a woman's pillion.

1 S. purpu'rea (Lin. spec. 728.) leaves short, constricted at top, with the tube inflated and gibbous, and the lid or wing or helmet-like appendage, erect, broad-cordate, and sometimes emarginate. ♃. F. M. Native of North America in swampy places about Quebec, Lake Huron, and probably common throughout Canada, and as far north as Bear Lake and as far south as Carolina. Sims, bot. mag. 849. Mill. fig. 2. 241.—Cat. car. 2. t. 70. Flowers dark purple. Seeds reddish.

Purple-flowered Side-saddle-flower. Fl. Ju. Jul. Clt. 1646. Pl. 1 foot.

FIG. 37.



2 S. ru'bra (Walt. fl. car. 152.) leaves short, coloured upwards with netted veins; tube ending gradually in a somewhat arched, long, pointed appendage (f. 37. *i.*) ♃. F. M. Native of North America in the swamps of Georgia and Florida. Hook. exot. fl. 13. S. psittacìna, Mich. fl. bor. amer. 1. p. 311. Pursh, fl. amer. sept. 2. p. 368.—Pluk amalth. t. 152. f. 3.? Flowers on very long peduncles, purple. Leaves small, very handsomely marked with purple veins (f. 37.).

Red-flowered Side-saddle-flower. Fl. Ju. Jul. Clt. 1786. Pl. 1 ft.

3 S. fla'va (Mich. fl. bor. amer. 1. p. 310.) leaves straight, very long, funnel-shaped, with a spreading throat; appendage erect, constricted at the base, with the sides in the lower part bent backwards, and ending in an awl-shaped mucrone. ♃. F. M. Native of North America in open swamps from Virginia to Florida. Sims, bot. mag. 780. Andr. bot. rep. 381.—Catesb. car. 2. t. 69.—Pluk. amalth. t. 376. f. 5. Flowers yellow. This is the tallest growing species; the leaves are often 2 feet long.

Yellow-flowered Side-saddle-flower. Fl. June, July. Clt. 1752. Pl. 2 feet.

4 S. variola'ris (Mich. fl. bor. amer. 1. p. 310.) leaves elongated, their tube spotted on the back, ending in a short arched appendage. ♃. F. M. Native of North America in open swamps on a sandy soil from North Carolina to Florida. Sims, bot. mag. 1710. S. adúnca, Smith exot. bot. 1. t. 53. S. mìnor, Walt. car. 153. Flowers yellow. The transparent spots on the back of the leaf distinguish this species readily from the preceding, with which it has often been confounded.

Chequered Side-saddle-flower. Fl. Ju. Jul. Clt. 1803. Pl. 1 ft.

Cult. These singular and handsome plants are very desirable objects in the collections of the admirers of nature. They are all inhabitants of the swamps of North America, but will not stand in the open air in Britain. They should be kept in pots filled with turfy peat at the bottom, and the upper part with *Spágnum* or *water-moss* in which the plants must be set and then placed in pans of water; they succeed best in frames in a shady situation or in a stove. They also succeed very well if set in *Spágnum* in a frame without pots, but they always will require to be kept rather moist and well shaded. In this last way the sashes require to be almost always kept shut. There is no way known by which they can be increased in this country but by dividing the plants at the root. Most of the plants in the gardens have been imported from North America.

Order XII. PAPAVERA'CEÆ (plants agreeing with *Papàver* in many important characters.) Juss. gen. 236. excluding Fumariàceæ. D. C. syst. 2. p. 67. prod. 1. p. 117. Rhæàdeæ, Lin. ord. nat. ed. Gisel. 383.

Calyx of 2 deciduous sepals, inclosing the young flower (f. 38. *a.*), or calyptrate (f. 41. *f.*). Petals usually 4 (f. 38. *b.* f. 39. *a.* f. 41. *a.*), free, rarely wanting, usually regular; irregularly plaited before evolution. Stamens indefinite (f. 39. *b.* f. 40. *c.*), seldom definite, disposed in one or many series; filaments filiform; anthers 2-celled, inserted by their base, opening by 2-furrows. Ovary 1 (f. 38. *d.*) free, oblong, constantly of 2 or many carpels, clasped by a membranous production of the *Thalamus* (f. 38. *e.*). Style short or wanting. Stigmas-2-4 (f. 41. *c.*) 6, or numerous (f. 38. *c.*), usually stellately disposed on the top of the ovary (f. 38. *c.*). Capsules the same as the ovaries (f. 38. *d.* f. 39. *c.* f. 41. *d.*), with 2 (f. 39. *c.* f. 41. *e.*) or numerous, intervalvular, placentas, bearing seeds on both sides (f. 38. *e.*), adhering to the sides of the valves; but in the 2-valved silique-formed capsules, the seeds are born on the margins (f. 39. *c.* f. 41. *e.*), sometimes opening at the base, sometimes at the top, each cell or carpel usually ending in a permanent style or stigma. Seeds numerous (f. 38. *e.* f. 39. *c.*), rarely solitary from abortion, inserted in the intervalvular placentas, unless in silique-formed capsules; nearly globose, destitute of aril except *Boccònia.* Embryo small, placed in the base of a fleshy oily albumen; cotyledous ovate-

oblong, flat on one side, and convex on the other.—Annual, perennial, or suffruticose herbs, yielding white, yellow, copper-coloured or blood-like juice. Roots fibrous. Leaves alternate, simple, sessile or stalked, usually dilated at the base, and half-stem-clasping, feather-nerved, generally pinnate-lobed, never truly entire, often glaucous. Peduncles axillary and terminal, 1-flowered, naked, inflexed before the expansion of the flower, usually solitary, distant, sometimes approximating in a panicle. Flowers very fugacious, usually large, white, yellow, red, or purple, but never truly blue. This order is intermediate between *Nymphiàceæ* and *Ranunculàceæ*, but differs from both in having intervalvular placentas. *Sanguinària* comes near to *Podophyllàceæ*. *Chelidònium* and *Hypécoum* to *Fumariàceæ* and *Crucíferæ*, but from all these orders they are easily distinguished by the above characters.

The plants of this order are better known for their medicinal qualities than for their beauty. *Sanguinària* is a neat little plant, well known for its crimson juice, and the emetic, purgative and anthelmintic powers of its roots. The peculiar narcotic power of the poppy is well known, a property which pervades the whole order, although in a less intense degree in all than in *Papàver somníferum*, from which, exclusively, the drug opium is obtained. The Mexicans use the expressed seed of *Argemòne Mexicàna* for polishing furniture. The seeds of the plants of this order are easily introduced in a living state from any part of the world, as they retain their vegetative power a considerable time.

Synopsis of the Genera.

1 PAPA'VER. Petals 4 (f. 38. *b.*). Stamens indefinite. Style wanting. Stigmas 4-20, radiating, sessile, connected, crowning the top of the ovarium (f. 38. *c.*). Capsules obovate (f. 38. *d.*).

2 ARGEMO'NE. Petals 4-6. Stamens indefinite. Style almost wanting. Stigmas 4-5, radiating, concave, free. Capsule obovate, prickly, 4-5-valved.

3 MECONO'PSIS. Petals 4. Stamens indefinite. Style short. Stigmas 5-6, radiating, convex, free. Capsule obovate, smooth, 5-6-valved.

4 STYLO'PHORUM. Petals 4. Stamens indefinite. Style long. Stigma 4-lobed. Capsules obovate, echinated, 4-valved.

5 HUNNEMA'NIA. Petals 4 (f. 39. *a.*). Stamens indefinite. Stigma peltate, 4-furrowed, slightly 4-lobed. Capsules silique-formed, rather compressed, 10-ribbed, 1-celled, 2-valved (f. 39. *c.*).

6 SANGUINA'RIA. Petals 8-12. Stamens 24. Stigmas 2. Capsule oblong, 2-valved.

7 BOCCO'NIA. Petals wanting. Stamens 8-24. Stigmas 2. Capsules elliptical, 1-seeded. Seed inwrapped in soft pulp.

8 MACLE'AYA. Petals wanting. Stamens 8-24 (f. 40. *c. b.*). Capsules many-seeded. Seeds inwrapped in soft pulp.

9 ESCHSCHO'LZIA. Petals 4 (f. 41. *a.*). Stamens indefinite. Stigmas 4, 2 short and 2 long (f. 41. *c.*). Capsules elongated, silique-formed (f. 41. *d.*), 2-valved (f. 41. *e.*), 1-celled. Calyx calyptrate (f. 41. *f.*). Receptacle expanded (f. 41. *b.*).

10 RÖME'RIA. Petals 4. Stamens indefinite. Stigma 1. Capsules elongated, 3-4-valved, 1-celled.

11 GLAU'CIUM. Petals 4. Stamens indefinite. Stigma bilamellate. Capsules elongated, 2-valved, and 2-celled from the cellular dissepiment. Seed without a glandular crest.

12 CHELIDÒNIUM. Petals 4. Stamens indefinite. Capsules elongated, 2-valved, 1-celled. Stigma 2-lobed. Seeds furnished with a glandular crest.

13 HYPE'COUM. Petals 4, inner ones usually 3-lobed. Stamens 4. Stigmas 2. Capsules elongated, 2-valved, knotted or jointed transversely.

I. PAPA'VER (from *papa*, pap, or thick milk; or *pappo*, to eat of pap. The juice of the poppy was formerly used in children's food to make them sleep, and in some parts of Holland they still use the seeds to produce the same effect. From *papa* the Latins changed the name of it to *Papaver*, the Anglo-Saxons to *Papig*, the English to *Poppy*, and the French to *Pavot.*) Tourn. inst. 237. t. 119. Lin. gen. no. 648. Schreb. gen. 881. Gært. fruct. 1. p. 289. t. 60. Juss. gen. 236. Lam. ill. t. 51.

LIN. SYST. *Polyándria, Polygýnia.* Sepals 2, convex, deciduous (f. 38. *a.*). Petals 4 (f. 38. *b.*). Stamens indefinite. Style none. Stigmas 4-20, radiating, sessile, crowning the disk at the top of the ovary (f. 38. *c.*). Capsules obovate (f. 38. *d.*), 1-celled, constantly with 4 to 20, carpels inclosed in a membranous production of the thalamus (f. 38. *e.*), opening by short valves under the crown or the stigmas. Placentas drawn out on the inside into incomplete dissepiments, one in the centre of each valve. Seeds reniform. Perennial or annual herbs, usually pilose, and a white juice flows from them in every part when cut. Leaves pinnately lobed or cut; lobes generally cut, and their teeth are usually terminated by a hair. Peduncles axillary, solitary, 1-flowered, naked, inflexed before the expansion of the flower. Flowers erect, white, red, yellow or variegated.

§ 1. *Capsules hispid. Scapes radical.*

1 P. NUDICAU'LE (Lin. spec. 725.) capsules hispid, obovate-oblong; sepals beset with bristles; peduncles radical, very long; leaves pinnately-lobed; lobes toothed or cut, acute. ♃. H. Native of Eastern Siberia, in the province of Argunskoi; in the Altaian Alps, and in Dauria at the rivers Jngoda and Schilka; also in barren grounds of North America, from lat. 64° to lat. 69°. every where upon the shores throughout the whole breadth of the continent and in the islands. Sims, bot. mag. t. 1633.—Dill. hort. elth. 302. t. 224. f. 291. Petals yellow, rarely white. Stigmas 6-12.

Var. β, glabràtum (D. C. syst. 2. p. 70. prod. 1. p. 118.) ♃. H. Native of Eastern Siberia. Leaves and scapes nearly smooth.

Var. γ, radicàtum (D. C. l. c.) ♃. H. P. nudicaûle, Oed. fl. dan. t. 41. P. radicàtum, Rottb. ex Horn. in litt. Native of Norway, rare; Greenland, and Unalaschka. A small very hairy plant, with a distinct habit, but without character.

Naked-stemmed Poppy. Fl. June, Aug. Clt. 1730. Pl. ½ ft.

2 P. RUBRO-AURANTI'ACUM (Fisch. in litt. bot. mag. t. 2344.) capsules hispid, obovate-oblong; sepals bristly; peduncles radical, very long, covered with appressed hairs; leaves pinnately lobed; lobes cut, lobules terminated by a bristle. ♃. H. Native of Dauria. P. nudicaûle δ, rubro-aurantìacum, D. C. l. c.

Red-orange-flowered Poppy. Fl. June, Aug. Clt. 1822. Pl. ½ ft.

3 P. MICROCA'RPUM (D. C. syst. 2. p. 71.) capsules hispid,

obovate-globose; sepals pilose; peduncles radical; leaves pinnately-lobed; lobes cut or toothed, acutish. ♃. H. Native of Kamschatka. A species between *P. nudicaúle* and *P. Pyrenàicum*, but distinguished from them in the capsules being small obovate-globose. Flowers small, of a copper-colour. Stigmas 4.

Small-capsuled Poppy. Fl. Ju. Aug. Clt. 1822. Pl. ¼ to ½ ft.

4 P. PYRENA'ICUM (Willd. enum. 563.) capsules hispid, obovate; sepals bristly; peduncles radical; leaves pilose, pinnately-lobed; lobes cut or toothed, bluntish. ♃. H. Native of the south of Europe, on calcareous mountains, among rocks and stones in sunny places, Pyrenees, Mount Baldo, Italy, Cevennes. Stigmas usually 4.

Var. a, lùteum (D. C. syst. 2. p. 71.) ♃. H. Argemòne Pyrenàica, Lin. spec. 728. P. aurantìacum, Lois. not. 84. P. suavèolens, Lapeyr. suppl. 72.—Barrl. icon. t. 764. P. alpìnum, Gouan. hort. 253. Vill. daup. and All. ped. Lapeyr, pyr. abr. 296. Flowers yellow or citron-coloured, sweet-scented.

Var. β, puniceum (D. C. syst. 2. p. 72.) ♃. H. P. Pyrenàicum, Willd. enum. 563. P. alpìnum β, Lapeyr. abr. 296. Native of the Pyrenees at a place called Port-de-Plan. Flowers scarlet, with a yellow spot at the base of each petal.

Pyrenean Poppy. Fl. June, Aug. Clt.? Pl. ¼ to ½ foot.

5 P. ALPI'NUM (Lin. spec. 725.) capsules hispid, obovate-oblong; sepals rather pilose; peduncles radical; leaves smoothish, bipinnate, with fine acutish lobules. ♃. H. Native of the higher Alps in sunny places, among rocks and stones in Austria. Carinthia, Carniola and Switzerland, &c. Jacq. fl. austr. t. 83. Sweet, fl. gard. t. 247. P. Bursèri, Crantz. austr. 2. p. 132. t. 6. f. 4. Petals white, nearly orbicular, each furnished with a greenish-brown claw. Stigmas 5-6.

Alpine Poppy. Fl. Ju. to Aug. Clt. 1759. Pl. ¼ to ½ foot.

§ 2. *Capsules hispid. Stem leafy.*

6 P. HY'BRIDUM (Lin. spec. 725.) capsules hispid, obovate-globose, torose; sepals pilose; stem leafy, many-flowered; leaves pinnate; lobes multifid, linear. ⊙. H. Native throughout Europe, a pest in cultivated fields. Smith, engl. bot. t. 43. P. hispidum, Lam. fl. fr. 3. p. 147. Flowers small, scarlet, each petal with a dark claw. Stigmas 5-8.

Hybrid Corn Poppy. Fl. June, July. Britain. Pl. 1 foot.

7 P. ARGEMO'NE (Lin. spec. 725.) capsules hispid, club-shaped, elongated; sepals smoothish; stem leafy, many-flowered; leaves bipinnate; lobes linear. ⊙. H. Native throughout Europe in sandy places and cultivated fields. Smith, engl. bot. t. 643. Oed. fl. dan. t. 867. Curt. fl. lond. 5. t. 38. Schkuhr. handb. 2. p. 69. t. 140. P. clavígerum, Lam. fl. fr. 3. p. 175. Petals pale scarlet, with a black spot at the base of each. Stigmas 4-6.

Var. β, uniflòra; stem 1-flowered. P. marítima, With. brit. 486.

Argemone-like Corn Poppy. Fl. May, July. Britain. Pl. 1 f.

§ 3. *Capsules smooth* (f. 38. *d.*), *or at the top alone a little pilose.*

8 P. DU'BIUM (Lin. spec. 726.) capsules smooth, obovate; sepals pilose; stem many-flowered, hispid with spreading bristles; bristles on the peduncles appressed; leaves pinnate-parted; lobes deeply-toothed. ⊙. H. Native of sandy and cultivated fields throughout the whole of Europe. Smith, engl. bot. t. 644. Schkuhr. handb. 2. p. 69. t. 140. Oed. fl. dan. 902. Schrank. fl. mon. 3. t. 229. P. parviflòrum, Lam. fl. fr. 3. p. 173. Flowers small, deep-scarlet. Stigmas 4-6.

Var. β. flore-albo (Balb. fl. taur. 85. P. dùbium, Jacq. fl. austr. 1. p. 17. t. 25.) Native of Tauria and Austria. Flowers white, with the claws of the same colour or darker. A species between *P. Argemòne* and *P. Rhœ'as*. Flowers varying from intense scarlet to a pale red and even white, furnished with a blackish or self-coloured claw.

Doubtful Corn Poppy. Fl. Ju. Jul. Britain. Pl. 1 to 2 ft.

9 P. OBTUSIFO'LIUM (Desf. atl. 1. p. 407.) capsules smooth, obovate; sepals pilose; stem few-flowered, somewhat hispid with spreading bristles; leaves bipinnate-parted; lobules ovate. ⊙. H. Native of the North of Africa near Belida. Like *P. dùbium*, but the capsules are one half shorter. Flowers rose-coloured, about the size of those of *P. Argemòne*. Stigmas 8-10.

Blunt-leaved Corn Poppy. Fl. Ju. Jul. Clt. 1828. Pl. 1 ft.

10 P. RHŒ'AS (Lin. spec. 726.) capsules smooth, obovate; sepals pilose; stem many-flowered, scabrous with spreading bristles; leaves pinnate-parted; lobes elongated, deeply-toothed, acute. ⊙. H. Native throughout Europe, North of Africa, and Asia; very common and a great pest in corn fields, imported with wheat. Smith, eng. bot. t. 645. Curt. fl. lond. 3. t. 32. Woodv. med. bot. 512. t. 186. Flowers varying from scarlet to flesh-coloured and white, with or without a spot at the base, and scarlet with white margins, and white with scarlet margins, double, and semi-double. Being a very common weed it has many provincial names in English, besides its more classical ones of *Corn Poppy, Red* and *Scarlet Poppy, Corn Rose, Cop Rose, Cup Rose, Canker* or *Canker Rose, Red-weed, Head-wark*, &c. The petals of this plant give a fine red colour when infused, and are supposed to possess slightly anodyne qualities. The young plants are admitted among esculents in Occitania, and the juice of the capsules as a succedaneum for opium. An extract from them has been successfully employed as a sedative; and some foreign practitioners even prefer this extract to opium. The flowers and tops are enumerated among the narcotics. Ροιας signifies a wild poppy.

Rhœas or Common Corn Poppy. Fl. June, July. Britain. Pl. 1 foot.

11 P. TRI'LOBUM (Spreng. fl. hal. suppl. D. C. prod. 1. p. 119.) capsules smooth, roundish; sepals pilose; stem many-flowered, smooth; leaves cuneated at the base, 3-lobed at the top. ⊙. H. Native of Halle in corn-fields. Like *P. Rhœ'as*, but will be found to be sufficiently distinct by comparing the characters. Flowers small, red. Stigmas 6-7.

Three-lobed-leaved Corn Poppy. Fl. Ju. Jul. Clt. 1827. Pl. 1 ft.

12 P. LÆVIGA'TUM (Bieb. suppl. p. 364.) capsules smooth, obovate; sepals smooth; stem 1 or few-flowered, nearly smooth; leaves profoundly pinnatifid; lobes entire, linear, acute. ⊙. H. Native on hills about Odessa, and of Caucasus. P. glabéllum, Steven, ined. Flowers small, red, size of those of *P. dùbium*. Stigmas 6-7.

Smooth Corn Poppy. Fl. June, Jul. Clt. 1823. Pl. 1 foot.

13 P. ROU'BIÆI (Vig. diss. 39. no. 4. t. 1. f. 1. good) capsules smooth, roundish; sepals pilose; stem many-flowered, pilose; leaves bipinnate-parted, villous; lobes linear, terminated by a hair. ⊙. H. Native of sandy places near Montpelier. Like *P. Rhœ'as*, but distinct from the leaves being bipinnate-parted, and a truly distinct habit. Plant scarcely ½ foot high. Flowers like those of *P. Rhœ'as*, but of a paler red. Stigmas 7-8.

Roubieu's Corn Poppy. Fl. Ju. Jul. Clt. 1823. Pl. ½ ft.

14 P. ARENA'RIUM (Bieb. suppl. p. 364.) capsules oblong, smooth, or with very few bristles; sepals hispid; leaves bipinnatifid; segments linear; stem many-flowered, covered with spreading bristles, those on the peduncles appressed, all caducous. ⊙. H. Native of Caucasus in sandy fields at the river Terek. Corolla red, with a dark bottom.

Sand Corn Poppy. Fl. June, July. Clt. 1828. Pl. 1 foot.

15 P. FLORIBU'NDUM (Desf. choix. cor. 62. t. 46.) capsules smooth, oblong; sepals pilose; stem many-flowered, hispid; leaves rather pilose, lower ones pinnate-parted, upper ones pin-

natifid; lobes cut, lobules each terminated by a bristle. ⊙. H. Native of Armenia. Ker. bot. reg. t. 134. P. virgàtum, Smith, in Rees' cycl. no. 9. Plant glaucous and hispid with spreading, stiff, bristle-like, yellowish hairs, branching. A splendid branching species, with numerous red flowers. Stigmas 5-6.

Abundant-flowered Poppy. Fl. Ju. Jul. Clt. 1815. Pl. 1 ft.

16 P. HO'RRIDUM (D. C. syst. 2. p. 79.) capsules smooth, elliptic; sepals hispid; stem few-flowered, hispid with stiff bristles; leaves somewhat stem-clasping, glaucous, sinuately pinnatifid; lobules bristly at the top of the nerves. ⊙. H. Native of New Holland. Deless. icon. sel. 2. t. 6. Sweet, fl. gard. t. 173. Like *P. setígerum*. Flower of a brick-colour. The whole plant is covered with bristles except the capsules. Stigma 8-rayed.

FIG. 38.

Horrid or New Holland Poppy. Fl. Ju. Jul. Clt. 1825. Pl. 1 ft.

17 P. GARIEPI'NUM (Burch, cat. geogr. pl. afri. austr. no. 1633.) capsules smooth, obovate-oblong; sepals bristly; stem many-flowered, rough, with innumerable bristles; leaves sessile, hispid, sinuately-pinnatifid; lobes distant, ovate. ⊙. H. Native of South Africa at the river Gariep or Orange-river. Like *P. hórridum*. Petals of a scarlet-orange colour. Stigmas 8-rayed.

River *Gariep* Poppy. Fl. Jul. Aug. Pl. 3-4 feet.

18 P. ORIENTA'LE (Lin. spec. 727.) capsules smooth, somewhat globose; sepals pilose; stem 1-flowered, scabrous, and leafy; leaves pinnate-parted, hispid; lobes oblong, serrated. 2. H. Native of Armenia about Erzerum. Curt. bot. mag. t. 57. P. grandiflòrum, Mœnch. meth. 247. P. spectábile, Sal. prod. 377. This beautiful plant is very frequent in gardens, where it is a great ornament. Flowers large, one on each stem, of an intense scarlet or blood-colour, usually furnished with a dark-purple mark at the bottom of each petal. A double flowering variety is sometimes seen in the gardens. Calyx generally of 3 sepals as in *Argemòne*, not as in the rest of *Papàver*, of 2 sepals. Stigmas usually 12, violet. The green heads of this plant are eaten by the Turks, although they possess an unpleasant, acrid, and somewhat stinging taste. This may probably be the species that yields the Turkey opium?

Oriental Poppy. Fl. May, June. Clt. 1714. Pl. 2-3 feet.

19 P. BRACTEA'TUM (Lindl. coll. t. 23.) flowers furnished with bracteas, 4-5 petalled; capsules smooth, obovate; sepals pilose; stem simple, 1-flowered, scabrous and leafy; leaves and bracteas pinnate-parted, hispid; lobes oblong, serrated. 2. H. Native of Caucasus near Mount Beschtau, and on the sides of mountains. Very like *P. orientàle*, but truly distinct, from the hairs of the calyx and peduncles being appressed, not spreading, also from its flowering a little earlier. Ker. bot. reg. t. 658. P. pulchérrimum, Fisch. in litt. Sepals usually 3, as in *P. orientàle*. This is the most splendid of all the poppies, and is one of the greatest ornaments of borders when in flower. Flowers large, scarlet, one on the top of each stem, usually with a dark mark at the bottom of each petal; stigmas 12-16, violet.

Bracteate-flowered Poppy. Fl. May, June. Clt. 1817. Pl. 3 to 5 feet.

20 P. PILO'SUM (Smith, fl. græc. t. 492.) capsules smooth, obovate; sepals pilose; stem many-flowered, hairy, with spreading pili; leaves stem-clasping, cut, pilose on both surfaces. 2. H. Native of Bithynia on Mount Olympus. Plant about the size of *P. somníferum*, but pale green, not glaucous, also the flowers are about the same size, of a pale lurid-scarlet, or of an intense orange colour, with a white mark at the bottom of each petal. Stigmas 6-8.

Pilose Poppy. Fl. July. Pl. 2 to 3 feet.

21 P. SETI'GERUM (D. C. fl. fr. 5. p. 585.) capsules smooth, obovate; sepals rather setose; stem smooth, few-flowered; leaves stem-clasping, glaucous, inciso-repand, each tooth terminated by a bristle. ⊙. H. Native of the Stœchades Islands. Deless. icon. sel. 2. t. 7. Sweet, fl. gard. t. 172. Perhaps this is only the wild plant of *P. somníferum, var. nigrum*, which it very much resembles. Flowers of a violet colour or whitish. Stigmas 6-8-rayed.

Bristle-bearing Poppy. Fl. May, Aug. Clt. 1824. Pl. 1 to 2 ft.

22 P. SOMNI'FERUM (Lin. spec. 736.) capsules obovate or globose, and are as well as the calyx smooth; stem smooth, glaucous; leaves stem-clasping, repand-toothed; teeth bluntish. ⊙. H. Native of the Morea, Egypt, Asia, Europe from Portugal to Petersburgh, in fields, Japan, Mauritius, &c. &c. Lam. ill. t. 451. Smith, fl. græc. t. 491.

Var. α, nìgrum (D. C. syst. 2. p. 82. prod. 1. p. 120.) capsules globose opening by holes under the stigmas; seeds black; peduncles many. Bull. herb. t. 57. Petals usually purple, sometimes white, and therefore it is perhaps referable to the oleiferous plant called *Œilette*. The seed of this variety is commonly called Maw-seed.

Var. β, álbum (D. C. l. c.) capsules ovate-globose, not opening by holes under the stigmas; peduncles solitary; seeds and petals white. Woodv. med. bot. t. 185. Smith, engl. bot. 2145.

A very variable plant about 3 or 4 feet high, very common in fields and gardens. The flowers are either single, semi-double or double, in variety β, white or red, with petals sometimes fringed, in variety α, purple, rose, or lilac, variegated and edged with the same colours, never blue nor yellow, nor mixed with these colours, generally with a black or purple mark at the bottom of each petal. Petals either entire, toothed, or fringed. Seeds black in the plants with purple flowers, white in those with white flowers, but the plant which grows spontaneous about Petersburgh has white flowers and black seeds. From the white-seeded variety, and probably from both, opium is obtained from the heads by incision and sometimes by expression. There is also an esculent oil obtained from the seeds of both varieties by expression. According to Linnæus a capsule of *Papàver somníferum* contained 32,000 seeds.

Papàver Somníferum is originally a native of the warmer parts of Asia, but is sometimes found apparently wild in Britain. It is often cultivated in gardens for the variety and beauty of its blossoms as well as for its seeds. Many attempts have been made in this country to obtain opium from its capsules, and Mr. Ball obtained a premium from the Society of Arts for specimens of British opium, in no respect inferior to the best eastern opium. Mr. Young, a respectable surgeon in Edinburgh, has also obtained it of excellent quality and in considerable quantity. But we apprehend the climate, besides the destruction by insects, is an insuperable obstacle to its becoming a profitable branch of horticulture in Britain. It was very early cultivated in Greece, perhaps at first solely for the sake of its seed, which was used as food. It is extensively cultivated in most of the states of Europe in the present age, not only on account of the opium, for which it is reared in Turkey, Persia, and India, but also on account of the capsules and of the bland oil obtained from the seeds. All the parts of the poppy abound in a narcotic milky juice, which is partially extracted, together with a considerable quantity of mucilage by decoction. The liquor is strongly pressed out, suffered to settle, clarified with white of eggs and evaporated to a due consistence, yields about one-fifth or one-sixth of the weight of the heads of extract, which possesses the virtues of opium in a very inferior degree, and does not come to this country unless

when used to adulterate the genuine opium. The heads are gathered as they ripen, and as this happens at different times, there are annually three or four gatherings. They are brought to market in bags, each containing about 3000 heads and sold to the druggists. The London market is chiefly supplied from Mitcham in Surrey. The heads or capsules possess anodyne properties; they are chiefly employed boiled in water, as fomentations to inflamed and ulcerated surfaces, and the syrup prepared from them with inspissated decoction, is used as an anodyne for children, and to allay the tickling cough in chronic catarrh and phthisis. A strong decoction of the dried heads, mixed with as much sugar as is sufficient to reduce it to the consistence of a syrup, becomes fit for keeping in a liquid form, and is the only officinal preparation of the poppy. It is, however, a very unequal preparation, as the real quantity of opium it contains is very uncertain; as a medicine it is by no means equal to syrup, to which a certain quantity of solution of opium is added. The seeds of the poppy are simply emulsive, and contain none of the narcotic principle. They yield a considerable quantity of oil by expression.

The milky juice of the poppy in its more perfect state, which is the case in warm climates only, is extracted by incisions made in the capsules and inspissated; and in this state forms the opium of commerce. The mode of obtaining it seems to have been nearly the same in the time of Dioscorides, as is at this day adopted. The plants, during their growth, are carefully watered and manured, the watering being more profuse as the period of flowering approaches, and until the capsules are half grown, when it is discontinued, and the collection of the opium commences. At sunset longitudinal incisions are made upon each half-ripe capsule, passing below upwards and not penetrating to the internal cavity. The night dews favour the exudation of the juice, which is collected in the morning by women and children, who scrape it from off the wounds with a small iron scoop, and deposit the whole in an earthen pot, where it is worked by wooden spatules in the sunshine, until it attains a considerable degree of thickness. It is then formed by the hand into cakes which are laid in earthen basins to be further exsiccated, when it is covered over with poppy or tobacco leaves. Such is the mode followed in India, and according to Kæmpfer's account, nearly the same is practised in Persia; and when the juice is drawn in a similar manner in this country, and inspissated, it has all the characters of pure opium.

Two kinds of opium are found in commerce, distinguished by the names of Turkey and East Indian opium. The Turkey opium is a solid compact perfectly transparent substance, of moderate specific gravity, possessing a considerable degree of tenacity, yet somewhat brittle, if half cut through; the section dense and a little shining; of a dark brown colour, becoming softer by the heat of the fingers, with difficulty reduced to powder, unless in the cold, after having been long dried in small pieces. Powder of a light brown, and readily plastic when baked together; when moistened marking on paper a light brown interrupted streak, scarcely colouring the saliva when chewed, at least only tinging it of a greenish colour, and rendering it frothy, exciting at first a nauseous bitter taste, which soon becomes acrid with some degree of warmth, and having a peculiar disagreeable smell. The best kind of opium is in flat pieces; and besides the large leaves in which they are enveloped, they are covered with the reddish capsules of a species of *Rumex* used in packing it. The round masses which have none of the capsules adhering to them are evidently inferior in quality. Opium is bad if it is soft or friable, mixed with any impurities, have an intensely dark or blackish colour, a weak smell, a sweetish taste, or draws upon paper a brown continuous streak. The East Indian opium has much less consistence, being sometimes not thicker than tar, and always ductile. Its colour is much darker; its taste more nauseous and less bitter, and its smell rather empyreumatic. When imported it is considerably cheaper than Turkey opium, and is supposed to be only half the strength. One-eighth of the weight is allowed for the enormous quantity of leaves with which it is enveloped. In the East Indies when opium is not good enough to bring a certain price, it is destroyed under the inspection of public officers. No opium of this kind is now brought to Europe. Mr. Ker relates that at Bahar it is frequently adulterated with cow-dung, the extract of the poppy procured by boiling and various other substances. In Malava it is mixed with oil of *Sésamum*, which is often one half of the mass; ashes and dried leaves of the plant are also used. It is also adulterated with the aqueous extract of the capsules; the extracts of *Glaúcium lùteum*, *Lactùca viròsa* and *Glycyrrhìza glàbra*, and sometimes with gum arabic, tragacanth, aloes, and many other articles.

The action of opium on the living system has been the subject of the keenest controversy. Some have asserted that it is a direct sedative, and that it produces no stimulant effects whatever; while others have asserted as strongly that it is a powerful and highly diffusible stimulus, and that the sedative effects which it undeniably produces are merely the consequences of previous excitement. The truth appears to be that opium is capable of producing a certain degree of excitement, while the sedative effects which always succeed are incomparably greater than could be produced by the previous excitement. The stimulant effects are most apparent from small doses. These increase the energy of the mind, the frequency of the pulse, and the heat of the body, excite thirst, render the mouth dry and parched, and diminish all the secretions and excretions, except the cuticular discharge, which they increase. These effects are succeeded by languor and lassitude. In larger doses the stimulant effects are not so apparent, but the excitability is remarkably diminished, and confusion, vertigo, and sleep are produced. In excessive doses it proves a violent narcotic poison, exciting headach, vertigo, delirium, and convulsions, accompanied with a very slow pulse, stertorous breathing, and a remarkable degree of insensibility or stupor, terminated by apoplectic death. The effects of an overdose are best counteracted by the exhibition of repeated doses of diffusible stimuli, and chiefly by not permitting the person to yield to his desire of sleeping. A solution of an alkaline carbonate should also be injected to decompose the opium and render the morphia insoluble. The exhibition of a powerful emetic, and for this purpose sulphate of zinc or sulphate of copper dissolved in water should be immediately swallowed, and the vomiting kept up for a considerable time and urged by irritation of the fauces. Large draughts of vinegar and water or other acidulated fluids should afterwards be frequently taken, and the powers of the habit supported by brandy, coffee, and cordials. Currie recommends the affusion of warm water at 106 degrees for the removing the drowsiness. By habit the effects of opium on the body are remarkably diminished. There have been instances of four grains proving fatal to adults, while others have been known to consume as many drachms daily. The habitual use of opium produces the same effects with habitual dram-drinking; tremors, paralysis, stupidity, and general emaciation; and like it can scarcely ever be relinquished. In disease, opium is chiefly employed to mitigate pain, diminish morbid sensibility, procure sleep, allay inordinate actions, and to check diarrhœa and other excessive discharges. It is contra-indicated in gastric affections, plethora, a highly inflammatory state of the body, and determination of the blood to particular viscera.

The Turks call opium *afioni*, and in the *teriakihana* or opium shops of Constantinople they take it in graduated doses from 10 grains to 100 grains in a day. It is mixed with rich syrup and the inspissated juices of fruit to render it more palatable and

less intoxicating, and is taken with a spoon or made up into lozenges, stamped with the words *Mash Allah*, literally meaning "The work of God." The Tartar couriers, who travel great distances, and with astonishing rapidity, take nothing else to support them during their journeys (Dall. const. p. 78.). There is, however, some reason to suppose that the *Mash Allah* or *Maslash* of the Turks contains other narcotics, as those of *hemp* *Lòlium temuléntum*, as well as *opium*.

The use of opium for the purpose of exhilarating the spirits, has long been known in Turkey, Syria, and China, and of late years it has been unfortunately adopted by many, particularly females, in this country. Russel says that in Syria, when combined with spices and other aromatics, he has known it taken to the amount of three drachms in 24 hours. Its habitual use cannot be too much reprobated. It impairs the digestive organs, consequently the vigour of the whole body, and destroys also gradually the mental energies. The effects of opium on those addicted to its use, says Russel, are at first obstinate costiveness, succeeded by diarrhœa and flatulence, with the loss of appetite and a sottish appearance. The memories of those who take it soon fail, they become prematurely old, and then sink into the grave objects of scorn and pity. Mustapha Shatoor, an opium-eater in Smyrna, took daily 3 drachms of crude opium. The visible effects at the time were the sparkling of his eyes and great exhilaration of spirits. He found the desire of increasing his dose growing upon him. He seemed twenty years older than he really was; his complexion was very sallow, his legs small, his gums eaten away, and his teeth laid bare to the sockets. He could not rise without swallowing half a drachm of opium. (Phil. trans. xix. p. 289.)

M. Sertuerner infused four ounces of powdered opium in repeated portions of cold distilled water, and filtered the solution through cloth. It was evaporated in a glass vessel, with a gentle heat, to 8 ounces; which, after standing 8 days, deposited 6 grains of sulphate of potass. The remaining fluid was diluted with distilled water, and yielded a flocculent precipitate on the addition of caustic ammonia, which, after being washed successively with sulphuric ether, caustic ammonia, and alcohol, yielded 3 drachms of a fine brownish-white powder, to which M. Sertuerner gave the name of Morphium, now Morphia, and which may be further purified by solution in boiling alcohol. It seemed to be perfectly free from ammonia yet it possessed all the characteristics of genuine alkali, colouring rhubarb brown and fernambuc violet, and forming neutral salts with acids. It has a peculiar bitter astringent taste, and its solution leaves a red stain on the skin. Its crystals are very obtuse, single or double pyramids, with a square or long rectangular base, or prisms with trapezoid base. It dissolves in 82 parts of boiling water, from which it crystallizes on cooling; in 36 of boiling and 42 of cold alcohol, and in 8 of sulphuric ether. The fluid from which the Morphia was precipitated, after being heated to 120° Fah. to expel the ammonia, was filtered, and a solution of muriate of barytes or of acetate of lead, added as long as there was any precipitate. The white precipitate, when washed and dried, weighed 7 drachms, and consisted of the barytes mixed with a new acid, to which M. Sertuerner gave the name of *Meconic*, and which he separated by sulphuric acid. This mode of obtaining it has not, however, succeeded with others, but M. Choulant, by mixing the meconate of barytes with an equal weight of vitreous boracic acid, and subliming, obtained the meconic acid in the form of shining scales of a fine white salt. Its taste is at first sour and cooling, but afterwards unpleasantly bitter. It reddens vegetative blues, and combines with alkalies and earths, and gives a cherry red colour to solutions of iron; its crystals are quadrangular tables, and it is soluble in twice its weight in water and also in alcohol and ether. When purified by repeated solutions, it crystallized in rectangular prisms, with rhomboidal bases. It was solid, white, had no taste or smell, was insoluble in cold water and soluble in 400 parts of boiling water, did not affect vegetable blues, was soluble in 24 parts of boiling alcohol, and 110 cold, as well as in hot ether and oil of almonds and olives below the boiling temperature, &c. When burnt it gives out a thick smoke and ammoniacal odour. It was supposed by Sertuerner to be meconate of Morphia, but Robiquet considered it as a peculiar principle which he has called *Narcotin*, and has shewn that it may be obtained almost pure by acting upon the soft watery extract of opium by ether, which dissolves scarcely any thing but the *Narcotin*. M. Robiquet has altered and improved upon Sertuerner's process for obtaining Morphia by boiling the watery solution of opium with pure magnesia, and then extracting the Morphia from the precipitate of alcohol. So far as it has been analyzed, the essential constituents of opium seem to be 1. morphia, 2. narcotin, 3. meconic acid, 4. an unnamed acid, 5. a substance like caoutchouc, 6. one like febrin, 7. a resin, 8. gum.

Opium is not fusible, but is softened even by the heat of the fingers. It is highly inflammable. It is partially soluble both in alcohol and in water. The solutions of opium are transparent, and have a brown and vinous colour. The watery solution is not decomposed by alcohol. The narcotic virtues of opium are imparted by distillation to alcohol and to water; and they are diminished, or entirely dissipated, by long boiling, roasting, or great age. The part of opium which is not soluble either in water or alcohol is chiefly caoutchouc. By evaporating a watery solution of opium to the consistence of syrup Desrosnes obtained a precipitate which was increased by diluting the extract with a little cold water. He dissolved this in hot alcohol, from which it again separated on cooling.

M.M. Orfila and Magendie have each made experiments to ascertain the effects of the various principles contained in opium, but these physiologists do not agree in their results. Pure crystallized morphia has little or no effect, on account of its little solubility in the juices of the stomach; but all its solutions in acids, oil, and alcohol, excite the same narcotic effects as the opium itself, and in a smaller dose. Magendie considers the narcotin as the exciting principle of opium; but this is denied by Orfila, who asserts that it produces nausea, vomiting, debility, accelerated circulation, and death, without the vertigo or affection of the senses, palsy of the extremities, plaintive cries or convulsions, which arise from morphia.

Opium has been used with good effects in numerous diseases, particularly in intermittent fevers; typhoid fevers, accompanied with watchfulness and diarrhœa. When combined with calomel, it has lately been much employed in inflammations from local causes, such as wounds, fractures, burns, absorption of morbid poisons, as in swelled testicles, and even in active inflammation, accompanied with watchfulness, pain, and spasm, after blood-letting. In small pox, when the convulsions before eruption are frequent, or when the accompanying fever is of a typhoid type, opium is liberally used: it is likewise given from the fifth day onwards, and is found to allay the pain of suppuration, to promote the ptyalism, and to be otherwise useful. In dysentery, after the use of gentle laxatives, or along with them, opium, independently of any effect it may have on the fever, is of consequence in allaying the tormina and tenesmus, and in obviating that laxity of bowels, which so often frequently remain after that disease. In diarrhœa the disease itself generally carries off any offending acrimony; and then or after purgatives opium is used with great effect even in the most symptomatic cases it seldom fails to alleviate. In cholera and pyrosis it is the best remedy. It is given to allay the pain, and favour the descent of calculi, and to give relief to jaundice and dysuria, proceeding from spasm. In colic it is

employed with laxatives, and often prevents ileus and inflammation, by relieving the spasm. Even in ileus it is sometimes used to allay the vomiting, the spasms, and the pain. It is of acknowledged use in different species of tetanus; affords relief to the various spasmodic symptoms of dyspepsia, hysteria, hypochondriasis, asthma, rabies canina, &c. and has been found useful in some kinds of epilepsy. In syphilis it is useful in combating symptoms, and in counteracting the effects resulting from the improper use of mercury. It is found useful in certain cases of threatened abortion and lingering delivery, in convulsions during parturition, and in after pains and excessive flooding. The administration of opium to the unaccustomed is sometimes very difficult. The requisite quantity is wonderfully different in different persons, and in different states of the same person. A quarter of a grain will in one adult produce effects which ten times the quantity will not do in another; and a dose that might prove fatal in cholera or colic, would not be perceptible in many cases of tetanus or mania. When given in too small a dose it is apt to produce disturbed sleep, and other disagreeable consequences; but sometimes a small dose has the desired effect, while a larger one gives rise to vertigo and delirium; and with some constitutions it does not agree in any dose or form. Its stimulant effects are most certainly produced by the repetition of small doses, its anodyne by the giving of a full dose at once. In some it seems not to have its proper effect till after a considerable time. The operation of a moderate dose is supposed to last in general about eight hours from the time of taking it. Externally opium is used to diminish pain, and remove spasmodic affections. It is found particularly serviceable in chronic ophthalmia, when accompanied with morbidly increased sensibility. Opium is exhibited in various ways, or in combination with aromatics, astringents, camphor, soap, emetics, bitters, distilled waters, mucilage, syrups, acids, carbonate of ammonia, ether, acetate of lead, potass, and unctuous substances, &c.; but made up in substance in the form of a pill, lozenge or electuary are its most efficient forms.

Sleep-bearing, or Common, or Opium Poppy. Fl. July, Aug. Pl. 3-4-feet.

23 P. Cauca'sicum (Bieb. fl. taur. 2. p. 5.) capsules ovate-oblong, smooth; stem much branched, and is, as well as the peduncles, beset with deciduous bristles; leaves glaucous, pinnatifid; lobes ovate-oblong, each terminated by a bristle. ⊙. H. Native of gravelly places towards Caucasus, about the falls of the Terek, and about the bottom of mount Kasbeck; at the falls of Chodjal; also in Iberia about Tiflis. Sims, bot. mag. 1672. A glaucous branching plant. Petals very fugaceous, colour of those of *Glaúcium corniculàtum*, and about the size of those of *P. Rhœ'as*. Capsules small, crowned by a 5-8-angled stigma.

Caucasian Poppy. Fl. June, Aug. Clt. 1813. Pl. 1 foot.

24 P. Armeni'acum (Lam. dict. 1. p. 247.) capsules elliptical-oblong, and are, as well as the calyx, smooth; stem much branched, smoothish; leaves pinnate; lobes linear, each terminated by a bristle. ⊙. H. Native of Armenia. Argemòne Armeniàca, Lin. spec. 727. Very like *P. Caucásicum*. Flowers red; stigma pyramidal. The Argémone Armenìaca of Sab. hort. rom. 4. t. 66. has the calyx 3-valved, and hispid capsules; and therefore differs from this plant.

Armenian Poppy. Fl. June, July. Clt. 1815. Pl. 1 f.?

25 P. fu'gax (Poir. dict. 5. p. 118.) capsules ovate, and are, as well as the calyx, smooth; stem much branched, twiggy, and is, as well as the peduncles, nearly smooth; leaves pinnatifid; lobes lanceolate, each terminated by a bristle. ⊙. H. Native of Persia, on mount Elwend. Petals fugacious, of a pale carmine colour. Capsule crowned by a 4-5-angled pyramidal stigma.

Fugacious-petalled Poppy. Fl. Jun. July. Clt. 1827. Pl. 1 ft.

26 P. turbina'tum (D. C. syst. 2. p. 84.) capsules turbinate, and are, as well as the calyx, smooth; stem few-flowered; peduncles with a few spreading bristles; leaves pinnatifid; lobes ovate, entire, not terminated at top by a bristle. ⊙. H. Native of the East, between Bagdad and Kermancha. Petals almost like those of *P. dùbium*, and of the same colour. Stigmas 6-7-rayed. Herb glaucous.

Turbinate-capsuled Poppy. Fl. June, July. Pl. 1 foot.

† *A species not sufficiently known.*

27 P.? integrifòlium (Vig. diss. 38.) ♃ ? ⊙ ? Native of Spain. Bocc. mus. p. 77. t. 65. f. 1. Barr. obs. p. 47. t. 1191. Perhaps this is a variety of *P. Rhœ'as*; but, according to the observations of Bertoloni, it is nothing more than a bad figure of *Seriòla Æthnénsis* before flowering.

Cult. Shewy plants with flowers of various hues. The perennial species may be increased by dividing the plants at the roots, but the common and best way is by seeds. The annual kinds may be sown in the open border, about the middle or end of March, where they are intended to remain, as they do not bear transplanting. They all thrive best in a light rich soil. The *P. nudicaúle* and varieties, *microcárpum*, *rubro-aurantiàcum*, *pyrenàicum* and varieties, and *P. alpìnum*, are beautiful little plants, and should be kept as alpines, in pots; or otherwise they are very apt to damp off in the winter, especially in the neighbourhood of London.

II. ARGEMO'NE (from *argema*, cataract of the eye, which is derived from *αργος*, *argos*, white. The name *αργεμωνη* was given by the Greeks to a plant, which was supposed to cure cataract of the eye.) Tour. inst. 239. t. 121. Lin. gen. no. 649. Gært. fruct. 1. p. 287. t. 60. Lam. ill. t. 452. Juss. gen. 236. D. C. syst. 2. p. 85. prod. 1. p. 120.

Lin. syst. *Polyándria*, *Monogýnia*. Sepals 2 or 3, concave, mucronate. Petals 4-6. Stamens indefinite. Style scarcely any. Stigmas 4-6, radiating, pitted, free. Capsules obovate, 1-celled; valves 4-6, opening at the top; placentas linear. Seeds spherical, scrobiculate. Annual glaucous herbs, abounding in a yellow juice, and covered with stiff prickles. Leaves sessile, repand-sinuated; usually spotted or painted with white; recesses spiny-toothed. Peduncles axillary, always erect. Flowers from yellow to white.

1 A. Mexica'na (Lin. spec. 727.) leaves profoundly repand-sinuated, spiny, blotched with white; flowers solitary; calyx smooth; capsules prickly, 3-4-valved; petals 4-6; stigmas 4-5. ⊙. H. Native of Mexico, Louisiana, and from Florida to Canada, West Indies, Brazils, Africa, St. Helena, Ascension, East Indies, Sandwich Islands, &c. Curt. bot. mag. t. 243. Sab. hort. rom. 4. t. 65. Mill. fig. 1. t. 50. A. spinòsa, Mœnch. meth. 227. A. versícolor, Sal. prod. 376. Ecthrus triviàlis, Lour. cochin. 1. p. 421. This plant is called by the Spaniards in Mexico *Figo del inferno*, or *Devil's fig*. In the West Indies it is called *Yellow thistle*. An oil is expressed from the seeds of this plant, which is used in Mexico for shining wood. The yellow juice with which the plant abounds, when reduced to a consistence, is not distinguishable from gamboge. In very small doses it is probably of equal efficacy, given in dropsies, jaundice, and cutaneous eruptions. It is esteemed very detersive, and generally used in diseases of the eyes; but the infusion is looked upon as a sudorific and resolutive. The seeds are said to be a much stronger narcotic than opium.

Mexican Poppy. Fl. July, Aug. Clt. 1592.

2 A. albiflòra (Horn. hort. hafn. 469. Sims, bot. mag. t. 2342.) leaves sessile, feather-nerved; petals usually only 3. ⊙. H. Native of Georgia and Louisiana. Flowers white. A. Mexicana β, albiflòra, D. C. syst. 2. p. 86. prod. 1. p. 120.

White-flowered Mexican Poppy. Fl. July, Aug. Clt. 1820. Pl. 1 foot.

3 A. ochroleu'ca (Sweet, brit. fl. gard. t. 242.) leaves profoundly sinuated or pinnatifid, glaucescent; nerves with prickly bristles; flowers solitary; stamens few; capsules oblong, deeply 5-6-furrowed, covered with somewhat reflexed prickles; stigmas 5-6, distinct, spreading, purple. ⊙. H. Native of Mexico. Leaves blotched with white. Flowers pale-yellow; calyx of 3-sepals; petals 6, crenated. Stem prickly.

Cream-flowered Mexican Poppy. Fl. Aug. Sept. Clt. 1827. Pl. 2-4 feet.

4 A. grandiflòra (Sweet brit. fl. gard. t. 226.) leaves sinuated, smooth, spiny-toothed; nerves unarmed; flowers panicled, polyandrous; calyx smooth; capsules bluntly quadrangular, almost unarmed. ♃. H. or ⊙. H. Native of Mexico. Flowers large, white. Stigmas 4, with as many pale-blue pits. Anthers yellow. Plants raised from seed, not flowering till October; but when the roots have existed through the winter, they will flower early in the summer.

Great-flowered Mexican Poppy. Fl. July, Oct. Clt. 1827. Pl. 2-3 feet.

Cult. Argemòne is a genus of beautiful hardy annuals, and should be sown in the open flower-border about the end of March or beginning of April; or the rarer kinds may be sown on a hotbed, and afterwards planted out into the borders.

III. MECONO'PSIS (from *μηκων, mekon*, a poppy; and *οψις, opsis*, resemblance; appearance of plants.) Vig. diss. p. 20 and 48. f. 3. D. C. fl. fr. suppl. p. 586. syst. 2. p. 86. prod. 1. p. 120.

Lin. syst. *Polyándria, Monogynia.* Sepals 2, pilose. Petals 4. Stamens indefinite. Style short. Stigmas 5-6, radiated, convex, free. Capsules obovate, 1-celled; valves 5-6, opening at the top; placentas thin, narrow, hardly drawn out on the inside into narrow membranes. A perennial herb, abounding in a yellow juice. Leaves pinnate, glaucous underneath. Peduncles long, inflexed, before the expansion of the flower; hence the flower-bud is drooping. Flowers yellow, erect. A genus between *Papàver* and *Argemòne*.

1 M. Ca'mbrica (Vig. diss. p. 48. f. 3.) capsules smooth; leaves numerous on the lower part of the stem, pinnate, stalked; lobes toothed, somewhat decurrent. ♃. H. Native of many parts of Europe, especially in the Pyrenees, Russia, France, &c. in shady humid places; and Britain particularly North Wales, about Llanbarris; about Kendal, Westmoreland; in shady lanes near Kirkby Lonsdale. P. Cámbricum, Lin. spec. 727. Engl. bot. t. 66.—Dill. elth. 300. t. 223. f. 290. P. lùteum, Lam. fl. fr. 3. p. 173. P. flàvum, Mœnch. meth. 247. Argemòne Cámbrica, Desp. in dict. sci. nat. 2. p. 481. Flowers about the size of those of *P. Rhœ'as*. Petals very fugaceous, of a sulphur-yellow colour.

Welsh Poppy. Fl. May, August. England and Wales. Pl. 1 foot.

Cult. The Welsh Poppy is rather an ornamental plant. It grows best in a rich light soil, in a shady situation. It may be either increased by dividing the plants at the root or by seeds.

IV. STYLO'PHORUM (from *στυλος, stylos*, a column or style; *φορεω, phoreo*, to bear; having long styles.) Nutt. gen. 2. p. 8. Mecanópsis, sect. Stylóphorum, D. C. syst. 2. p. 87.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2, pilose, deciduous. Petals 4. Style long, columnar. Stigma 4-lobed or entire. Capsule oblong or globose, 4-valved, echinated, opening at the top. Placentas narrow. Perennial herbs, yielding a yellow juice, with undivided or pinnate leaves. Peduncles inflexed before the expansion of the flower, and sometimes ever after. Flowers yellow or crimson.

1 M. petiola'tum (Nutt. gen. amer. 2. p. 8.) capsules echinated; leaves pinnate, stalked, smooth, 2-3 on each stem; leaflets 5. ♃. H. Native of North America, in woods on the banks of the river Ohio. Meconópsis petiolàta, D. C. syst. 2. p. 87. S. Ohiénse, Spreng. syst. 2. p. 570. Leaves pinnate; lobes 5, oblong, toothed; teeth blunt. Flowers deep yellow, about the size of those of *Glaúcium flàvum*. Stigma 4-furrowed. Capsule bristly. Seeds crested at the hilum.

Stalked-leaved Stylophorum. Fl. May, June. Pl. 1 foot.

2 S. diphy'llum (Nutt. gen. 2. p. 7.) capsules? leaves 2, pinnatifid, sessile, rather pilose. ♃. H. Native of North America, along the sides of rivulets, and in shady woods of Kentucky and Tennessee, and on the banks of the river Missouri. Chelidònium diphýllum, Mich. fl. bor. amer. 1. p. 309. Meconópsis diphýlla, D. C. syst. 2. p. 88. Plant smaller than the *S. petiolàtum*, and less glaucous, and furnished with shining hairs. Leaves 2 on each stem, lobately-pinnatifid; lobes roundish or blunt. Peduncles usually proliferous. Flowers yellow. Capsule bristly.

Two-leaved Stylophorum. Fl. March, May. Pl. 1 foot.

3 S. paniculà'tum; plant very bristly; stem branched; cauline leaves undivided, oblong, sessile; flowers panicled; capsules spherical, beset with imbricate bristles. ♃. F. Native of Nipaul in Gosaingsthan, where it is called *Espoo swa* by the natives. Meconópsis Napaulénsis, D. C. prod. 1. p. 121. S. Napalénsis, Spreng. syst. 2. p. 570. Papàver paniculàtum, D. Don, prod. fl. nep. p. 197. Flowers crimson or yellow, about the size of those of *Papàver Rhœ'as*. Calyx beset with starry down. Style erect, cylindrical, half an inch long. Stigma capitate, entire. Herb very poisonous.

Panicled-flowered Stylophorum. Pl. 3 to 4 feet.

4 S. simplicifòlium; plant beset with bristles; leaves undivided, lanceolate, obtuse, quite entire, stalked; scape 1-flowered; flower nodding; capsules oblong, very bristly. ♃. H. Native of Nipaul in Gosaingsthan in the alpine region of the Himalaya, where it is called *Ohaee* and *Themei-Sowang* by the natives. Papàver simplicifòlium, D. Don, prod. fl. nep. 197. Flowers crimson, with a dark purple claw at the base of each petal. Anthers spirally twisted. Style cylindrical, thick, one-half the length of the ovary. Stigma capitate, tetragonal.

Simple-leaved Stylophorum. Pl. 1½ foot.

Cult. A beautiful genus of plants. The species require to be planted in a shady situation, in a light rich soil. They may be either increased by dividing the plants at the roots or by seeds. They will all require to be protected during winter by a frame.†

V. HUNNEMA'NIA (John Hunneman, a very zealous botanist, who has introduced more plants into Britain than any other individual.) Sweet. brit. fl. gard. 3. t. 276.

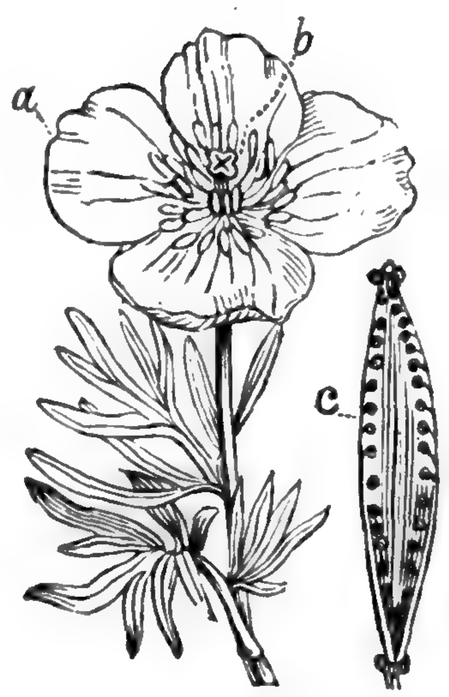
Lin. syst. *Polyándria, Monogýnia.* Sepals 2, concave, deciduous. Petals 4 (f. 39. *a.*). Stamens numerous; anthers linear (f. 39. *b.*). Ovary oblong; style short, permanent; stigma peltate, 4-furrowed, obsoletely 4-lobed. Capsule silique-formed, rather compressed, 10-ribbed, 1-celled, 2-valved; valves bearing many seeds at the edges (f. 39. *c.*). Seeds rather globose, tubercled on the outside. Albumen cartilaginous.—An erect somewhat suffruticose plant, with decompound glaucous leaves and solitary terminal yellow flowers, like those of *Eschscholtzia Califórnica*.

1 H. fumariæfòlia (Sweet. l. c.) leaves decompound and triternate, glaucous; leaflets linear, bluntish. ♂. or ♄. F. Native of Mexico. (f. 39.)

Fumitory-leaved Hunnemania. Fl. July, Oct. Clt. 1827. Pl. 2 to 3 feet.

Cult. This beautiful plant will require to be sheltered through the winter by a frame. In the summer it will grow very well in the open border, or against a wall. It may be either increased by seeds or cuttings; the former method is by far the best.

FIG. 39.



VI. SANGUINA'RIA (from *sanguis*, blood; because all parts of the plant, especially the roots, yield a red juice when cut or broke.) Dill. hort. elth. 252. Lin. gen. no. 645. Lam. ill. t. 449. Juss. gen. p. 236. D. C. syst. 2. p. 88. prod. 1. p. 121.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2, ovate, caducous. Petals 8-12. Stamens 24. Stigma bisulcate. Capsules oblong, 2-valved, ventricose, acute at both ends; valves deciduous; placentas 2, permanent. A small perennial American herb, abounding in a blood-coloured juice, with one leaf and one scape rising from each bud. Flowers white.

1 S. Canade'nsis (Lin. spec. 734.) ♃. H. Native of North America in dry woods in a fertile soil, from Canada to Florida, and on the banks of the river Delaware. Curt. bot. mag. t. 162. Bigel. med. bot. 1. p. 75. t. 7. Trunk of root horizontal, subterraneous, yielding a red juice when cut. Leaf radical, kidney-shaped, lobed like the leaf of the fig. Scape 4 inches high, 1-flowered. Flowers double or single, large or small. The whole plant dyes yellow, and is called by the indigenous Americans *Puccoon*, and not inaptly by the farriers *Turmeric*.

The medical properties of *Sanguinària* are those of an acrid narcotic. When taken in a large dose it irritates the fauces, leaving an impression in the throat for a considerable time after it is swallowed. It occasions heart-burn, nausea, faintness, vertigo, and diminished vision. At length it vomits, but in this operation it is less certain than other emetics in common use. The above effects are produced by a dose of from eight to twenty grains of the fresh powdered root. When given in smaller doses, such as produce only nausea, it has been found useful in several complaints. In still smaller doses, or such as do not excite nausea, it has acquired some reputation as a tonic-stimulant. Professor Smith of Hanover, New Hampshire, found the powder to operate violently as an emetic, and produced great prostration of strength during its operation. Snuffed up the nose it proved sternutatory, and left a sensation of heat for some time. Applied to fungous flesh, it proved escharotic, and several polypi of the soft kind were cured by it in his hands. He found it of great use in the incipient stages of pulmonary consumption, given in as large doses as the stomach would bear, and repeated in cases of great irritation, he combined it with opium. Some other complaints were benefitted by it, such as acute rheumatism and jaundice. Professor Ives of New Haven, North America, considers the *Blood-root* an important remedy in many diseases, particularly of the lungs and liver. He observed, that in typhoid pneumonia, in plethoric constitutions, when respiration is very difficult, of greater benefit than any other remedy; in such cases the dose must be large, and repeated until it excites vomiting or relieves the symptoms. He infuses from a scruple to half a drachm of the powdered root in half a gill of hot water, and gives one or two tea-spoonfuls every half hour in urgent cases. This treatment has often removed the symptoms in half an hour. Dr. Ives thinks highly of its use in influenza and pthisis, and particularly in hooping cough. In large doses to produce vomiting, he says, it often removes the croup. Dr. Macbride of Charlestown says, the *Blood-root* is useful in hydrothorax, given in doses of sixty drops three times a day, and increased until nausea followed each dose. He prefers the pill or powder in a dose of two to five grains, and vinous infusion to the spirituous tincture. The tincture may be made by digesting an ounce of the powdered root in eight ounces of diluted alcohol. This preparation possesses all the bitterness, but less of the nauseating qualities, than the infusion. In the dose of a small tea-spoonful it is used by many practitioners as a stimulating tonic, capable of increasing the appetite and promoting digestion.

Canadian Blood-root or Puccoon. Fl. March, May. Clt. 1680. Pl. ¼ to ½ foot.

Cult. This being a dwarf plant should be planted near the front of the flower border; it will thrive well in a light sandy loam or peat soil, and it is easily increased by dividing the roots or by seeds.

VII. BOCCO'NIA (in honour of Paolo Bocconi, M. D. a Sicilian botanist, author of the *Museum des Plantes*, and *Histoire Naturelle de l'ile de Corse*, &c. died 1704.) Plum. gen. 35. t. 25. Lin. gen. no. 591. Juss. gen. 236. Gært. fruct. 1. p. 204. t. 44. f. 1. D. C. syst. 2. p. 89. prod. 1. p. 121.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2, ovate, deciduous. Petals none. Stamens 8-24. Stigmas 2, spreading. Capsules two-valved, elliptical, 1-seeded. Seed 1, erect, fixed to the bottom of the capsule, inwrapped in soft pulp at the base; hilum filiform; albumen fleshy. Embryo very minute, erect. American shrubs from 2 to 10 feet high, abounding in a yellow juice. Leaves stalked, glaucous, form of those of the oak. Flowers in terminal panicles, with the branches and branchlets furnished each with one bractea. This genus does not well agree with the rest of *Papaveràceæ*, from its 1-seeded capsules, as well as in the flower being destitute of petals.

1 B. frute'scens (Lin. spec. 634.) leaves oval-oblong, cuneated at the base, pinnatifid. ♄. S. Native of Mexico, Cuba, St. Domingo, Jamaica, Guadaloupe, on the mountains. Lam. ill. t. 394. Lodd. bot. cab. t. 83. B. quercifòlia, Mœnch. suppl. 122. B. glaúca, Sal. prod. 377. The juice of this shrub is acrid, and is used in the West Indies to take off warts.

Var. β, cérnua (Moc. et Sesse icon. fl. mex. ined.) perennial; scapes 1-flowered.

Var. γ, subtomentòsa (Lher. in herb. Dombey.) leaves on the under surface, especially at the nerves, somewhat tomentose; lobes much crenated. ♄. S. Native of Peru. This variety is called by the Peruvians *Palo de Tinto* or *Palo Amarillo*.

The sepals of all the varieties are more or less brown.

Frutescent Tree Celandine. Fl. Jan. April, in its native country. Britain, Oct. to Jan. Clt. 1739. Shrub 3 to 10 feet.

2 B. integrifo'lia (H. B. et Kth. nov. pl. gen. 1. p. 119. t. 35.) leaves oblong, tapering towards each end, entire, or scarcely crenated. ♄. S. Native of Peru on the Andes towards Casca. Leaves flat. Panicles crowded. Flowers greenish.

Var. β, Mexicàna (D. C. syst. 2. p. 91.) margins of leaves somewhat revolute; panicles loose. ♄. S. Native of New Spain. Flowers green or brownish.

Entire-leaved Tree Celandine. Fl.? Clt. 1822. Shrub 9 ft.

Cult. Shrubs with fine foliage but with insignificant bloom. They grow well in a rich light soil. Ripened cuttings root readily, under a hand-glass in a pot of sand, plunged in a moderate heat, or they may be increased by seed, which usually ripen in plenty.

VIII. MACLE'AYA (Alexander Mac Leay, F.R.S. F.L.S. colonial secretary New South Wales, a profound entymologist) R. Br. in Clapp. and Denham's trav. append. p. 18.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2, caducous (f. 40. *a.*). Petals none. Stamens 24-28 (f. 40. *b.*). Stigmas 2 (f. 40. *c.*) spreading. Capsule elliptical, with many-seeded placentas. Seeds fixed to parietal placentas. Albumen fleshy. Embryo very minute, erect. A perennial herbaceous plant, 4 or 5 feet high, with roundish cordate, obsoletely-lobed leaves, glaucous on the under surface. Flowers disposed in large panicles, brownish.

FIG. 40.

1 M. corda'ta (R. Br. l. c.) ♃. H. Native of China. Boccònia cordàta, Willd. spec. 2. p. p. 841. Jacq. fragm. 63. t. 93. f. 1. Sims, bot. mag. t. 1905 (f. 40.).

Cordate-leaved Macleaya. Fl. Ju. Jul. Clt. 1795. Pl. 3-5 ft.

Cult. This is a very ornamental, stately, herbaceous plant, when grown in a rich soil; it is easily increased by dividing the roots in spring.

IX. ESCHSCHO'LZIA (in honour of Fred. Eschscholz, M.D. a celebrated naturalist, who accompanied Kotzebue round the world.) Cham. in horæ, phys. berol. p. 74. t. 15. Hook. fl. bor. amer. p. 34.

Lin. syst. *Polyándria, Tetragýnia.* Calyx mitre-shaped, deciduous (f. 41. *f.*), never separating into 2 sepals. Petals 4 (f. 41. *a.*), with their claws inserted into the throat of the receptacle. Receptacle dilated, with an expanded, fringed, or entire border (f. 41. *b.*). Stamens indefinite. Styles 4, 2 long and 2 short (f. 41. *c.*). Capsules silique-formed (f. 41. *d.*), 2-valved. Seeds fixed to the margins of the valves (f. 41. *e.*). A perennial herb with tuberous roots. Leaves glaucous, tripinnatifid, the segments linear. Flowers large, yellow, not unlike those of *Glaúcium lùteum.*

FIG. 41.

1 E. Califo'rnica (Cham. l. c.) ♃. H. Native of the north-west coast of America on the dry sandy banks of streams. Lindl. bot. reg. 1168. Hook. bot. mag. 2887. Stigmas 4, 2 longer than the others. Seeds globose, almost black. This plant is a beautiful ornament to our gardens. It was first discovered by Mr. Menzies more than 40 years ago, and plants were raised about that time in Kew Gardens (f. 41.).

Californian Poppy. Fl. May, Nov. Clt. 1790? Pl. 1 foot.

Cult. A very ornamental plant of easy culture. It will thrive in any kind of soil, and is easily increased by seeds. It is well adapted for borders.

X. RÖME'RIA (in honour of John James Römer, M.D., Professor of Botany at Landshut, died 1820, author of several botanical works). Medik. in ust. ann. 1792. vol. 3. p. 15. D. C. syst. 2. p. 92. prod. 1. p. 122. but not of Mœnch nor Thunb.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2, pilose. Petals 4. Stamens indefinite. Stigma bilamellate, or 3-lobed. Capsules elongated, 1-celled, 2, 3, or 4-valved; valves opening from the top to the base. Seed kidney-shaped, scrobiculate, destitute of a glandular crest. Annual herbs, yielding yellow juice. Leaves pinnate-parted; lobes narrow, multifid; lobules linear, terminated by a hair-like point. Flowers violet.

1 R. hy'brida (D. C. syst. 2. p. 92.) siliques 3-4-valved, erect, beset with stiff bristles at the top. ⊙. H. Native of the south of Europe and the north of Africa in cultivated fields and vineyards, especially in the region of the Mediterranean. In England rare in corn fields between Swaffham and Burwell, Cambridgeshire, and other parts of that county, and about 4 miles from Aylsham towards Cromer. Glaúcium hýbridum, Dum. cours. bot. cult. ed. 2. vol. 4. p. 472. Chelidònium hýbridum, Lin. spec. 724. Smith, engl. bot. 201. Chel. violàceum, Lam. fl. fr. 3. p. 169. R. violàcea, Medik. in ust. ann. p. 15. Glaúcium triválve, Mœnch. meth. 249. Glaúcium violàceum, Juss. gen. 236. Smith, fl. græc. t. 490. Flowers violet, bluish, or purple.

Var. β, eriocárpa (D. C. syst. 2. p. 93.) siliques beset with stiff hairs from the base to the top. Chelidònium dodecándrum, Forsk. fl. ægyp. p. 100. ⊙. H. Native of Egypt.

Var. γ, velutìna (D. C. syst. 2. p. 93.) stems clothed with soft villi. Chelid. hýbridum, Bieb. fl. taur. 2. p. 3. Native of Tauria.

Hybrid Römeria. Fl. May. June. Brit. Pl. ¾ foot.

2 R. refra'cta (D. C. syst. 2. p. 93.) siliques 3-4-valved, glabrous; pedicels a little recurved. ⊙. H. Native of Tauria about Derbent. Deless. icon. sel. 2. t. 8. Glaúcium refráctum, Stev. in litt. Very like *R. hýbrida*, but differing in the leaves being bipinnatifid, and by the segments being more blunt. Capsules drooping, or refracted from the recurved pedicels. Flowers violet.

Refracted-capsuled Römeria. Fl. May, Jul. Clt. 1823. Pl. ¾ ft.

3 R. biva'lvis (D. C. syst. 2. p. 93.) siliques 2-valved, setose, somewhat incurved. ⊙. H. Native of Syria. Leaves pinnately-multifid; lobes linear, pinnate-parted. Petals violet.

Two-valved-Capsuled Römeria. Fl. Ju. Jul. Pl. ¾ foot.

Cult. This is a beautiful genus of annuals; they only require to be sown in the open border, where they are intended to remain, early in the spring.

XI. GLAU'CIUM (Γλαυκος, *Glaucos*, in mythology, the name of a fisherman who leaped into the sea and became a sea-god; also sea-green or glaucous, in allusion to the colour of the plants and their habitation by the sea-side.) Tourn. inst. 254. t. 130. Gært. fruct. 2. p. 165. t. 115. Juss. gen. 236. D. C. syst. 2. p. 94. prod. 1. p. 122.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2. Petals 4. Stamens indefinite. Capsules elongated, 2-valved; valves opening from the top to the bottom, 2-celled, with a cellular dissepiment. Stigma bilammellate. Seeds ovate, reniform, destitute of a glandular crest. Evergreen, glaucous, biennial or annual herbs, abounding in a copper-coloured acrid juice, which is said to be poisonous and to occasion madness. Roots perpendicular. Radical leaves stalked; stem ones sessile, stem-clasping; more or less cut; lobes broad, blunt. Peduncles axillary, or terminal, 1-flowered. Flowers yellow or crimson. The English name of the genus, *Horn-Poppy*, is given to it on account of the long horn-like pods.

1 G. fla'vum (Crantz. fl. austr. 2. p. 114.) stem glabrous; stem-leaves repand; capsules scabrous with tubercles. ♂. H. Native of south and middle Europe on the sea-shore in the sand or mud; plentiful in Britain; also on the sea-shore of Carolina and Virginia. Chelid. Glaúcium, Lin. spec. 724. Fl. dan. 585.

Schkuhr. handb. 2. p. 70. t. 140. Smith, engl. bot. t. 8. G. lùteum, Scop. carn. 1. p. 369. Hook, fl. lond. t. 56. G. glaúcum, Mœnch. meth. 249. G. littoràle, Sal. prod. 377.

Yellow Horn-Poppy. Fl. Jul. Aug. England. Pl. 2 feet.

2 G. fu'lvum (Smith, exot. bot. 1. p. 11. t. 7.) stem glabrous; stem-leaves rotundo-sinuated; capsules scabrous; flowers nearly sessile. ♂. or ♃.? H. Native of the south of Europe in gravelly and sandy places by the sea-side. Chelid. fúlvum, Poir. suppl. 5. p. 606. Chelid. glàbrum, Mill. dict. no. 5. Chelid. corniculàtum, var. β, Lam. dict. 1. p. 714. Petals brick-coloured, cuneated at the base, and yellow; often somewhat bifid at the top, very blunt.

Fulvous Horn-Poppy. Fl. Aug. Sept. Clt. 1802. Pl. 2 ft.

3 G. cornicula'tum (Curt. fl. lond. 6. t. 32.) stem pilose; stem leaves pinnatifid; capsules setose. ☉. H. Native of Europe, particularly towards the south, in sandy fields; in England on the sea-coast or sandy fields, very rare and perhaps a doubtful native. Portland island (Lobel).

Var. α, *phœníceum* (D. C. syst. 2. 96.) ☉. H. Chelid. corniculàtum, Lin. spec. 724. Mill. fig. 1. t. 143. Glaúcium phœníceum, Smith, engl. bot. t. 1433. Fl. græc. t. 489. Chelid. phœníceum, Lam. fl. fr. 3. p. 169. Chelid. aurantìacum, Sal. prod. 1. p. 377. Flowers crimson. An elegant plant.

Var. β, *flaviflòrum* (D. C. syst. 2. p. 97.) Glaúcium corniculàtum, flore flavo, Stev. in litt. ☉. H. Native of Tauria by way sides. Not distinct from the var. α, except the yellow flowers.

Horned Poppy. Fl. Ju. Jul. Britain. Pl. ¾ foot.

4 G. ru'brum (Smith, fl. græc. t. 488.) stem pilose; stem leaves pinnatifid; capsules rather pilose. ♂. H. Native between Smyrna and Bursa, and also in Rhodes Island by way sides. Petals of a reddish-copper colour. Capsules beset with very soft hairs, at last smooth, never rough with bristles.

Red Horn-Poppy. Fl. June, July. Clt. 1828. Pl. 1 foot.

5 G. tri'color (Berh. ex Spreng. syst. app. p. 203.) leaves lyrately-pinnatifid, rather pilose; pods hairy; petals contiguous, with a broad dark spot at the base of each. ☉. H. Native of Thuringia and Podolia. Like *G. corniculàtum, var. phœníceum.* Flowers scarlet with a black spot at the base of each petal.

Three-coloured-flowered Horn Poppy. Fl. June, Aug. Clt. 1829. Pl. ¾ foot.

6 G. Pe'rsicum (D. C. syst. 2. p. 97.) leaves glaucous, velvety, radical ones pinnate, lower segments smallest, terminal one kidney-shaped. ♂. or ♃. H. Native of Persia about Tehraun.

Persian Horn-Poppy. Fl. Ju. Jul. Clt. 1829. Pl. ½ to 1 ft.

Cult. The species of Horn Poppy will thrive well in any common garden soil; they are easily raised from seeds which ripen in great abundance; these may be sown where the plants are intended to reinain. Some of the species are very pretty, particularly *G. corniculàtum, rùbrum, fúlvum, trícolor*, and *Pérsicum.*

XII. CHELIDO'NIUM (from χελιδων, *chelidon*, a swallow; it is said the plant flowers at the time of the arrival of swallows and dries up at their departure) C. Bauh. pin. 144. Gært. fruct. 2. p. 164. t. 115. f. 5. Juss. gen. 236. D. C. syst. 2. p. 98. prod. 1. p. 122.

Lin. syst. *Polyándria, Monogýnia.* Sepals 2, smooth. Petals 4. Stamens indefinite. Capsules elongated, 1-celled, 2-valved; valves opening from the base to the top; stigma 2-lobed. Seeds furnished with a glandular crest. Evergreen perennial herbs, abounding in an acrid saffron-coloured juice. Leaves stalked, pinnate; segments toothed or lobed. Peduncles axillary, bearing many 1-flowered umbellate pedicels, which are furnished each at the base with two little bracteas. Flowers small, yellow. The English name of the genus *Celandine* is a corruption of *Chelidònium.*

1 Ch. ma'jus (Mill. dict. no. 1. Oed. fl. dan. t. 676.) peduncles umbellate; leaves pinnate; segments roundish, dentately-lobed; petals elliptical, entire. ♃. H. Native throughout the whole of Europe, except Lapland, in shady places along the sides of walls in hedges and thickets, also in New England and Pennsylvania, but certainly introduced there. In England in waste grounds and thickets, especially on chalky soil. Ch. màjus, var. α, Lin. spec. 723. Smith, engl. bot. t. 1531. Mill. fig. 1. t. 92. f. 1. Schrank, fl. mon. 2. t. 120. A very common plant, from 1-2 feet high, with either double or single flowers. An infusion of the root does good in jaundice, gout, and calculi, it is also used to give a colour to cotton. The juice, taken inwardly, is good against dropsy, applied externally will remove warts, tetters, ring-worms, itch, and clean foul ulcers, diluted with milk it consumes white opaque spots on the eyes. A decoction of the plant kills the vermin which are sometimes engendered in putrid ulcers in horses.

Great or Common Celandine. Fl. April, Oct. Brit. Pl. 2 ft.

2 Ch. lacinia'tum (Mill. dict. no. 2.) peduncles umbellate; leaves pinnate; segments cut into many linear, acute, laciniated lobes; petals serrated or cut. ♃. H. Native of Germany in hedges. In England about Wimbledon in Surrey; also on the Altaian mountains along the borders of rivulets. Ch. május, var. β, Lin. spec. 724. Ch. quercifòlium, Will. fl. lorr. 2. p. 613.—Mill. fig. t. 92. f. 2. This plant possesses the same qualities as the last.

Var. β, *fumariæfòlium* (D. C. syst. 2. p. 99.) lobes of leaves cleft into more deep, more irregular, and much more linear lobules.—Mor. hist. 2. p. 258.

Jagged-leaved Celandine. Fl. April, Oct. Brit. Pl. 2 feet.

3 Ch. grandiflo'rum (D. C. prod. 1. p. 123.) peduncles umbellate; leaves pinnate; segments roundish, dentately-lobed; petals roundish, crenated. ♃. H. Native of Dauria about Nerchinsky-savod.

Great-flowered Celandine. Fl. April, Oct. Clt. 1818. Pl. 2 ft.

† *Species not sufficiently known.*

4 Ch. Sine'nse (D. C. syst. 2. p. 100.) ♃. ♄. H. Native of divers provinces in China, but commonly cultivated. Ch. majus, Lour. coch. 1. p. 402. From the description of Loureiro it differs from *Ch. màjus* by the stems being suffruticose, and the peduncles many-flowered, not umbellate. Flower yellow. Root long, yellow in the inside, and is, according to Loureiro, extremely bitter, and greatly esteemed among the natives of Cochin-china for a variety of uses in medicine.

Chinese Celandine. Fl.? Pl. 2 feet.

5 Ch. Japo'nicum (Thunb. fl. jap. 221.). Native of Japan. Leaves stalked, pinnate. Flowers yellow, axillary, solitary, stalked. Fruit unknown, therefore it is a very doubtful species.

Japan Celandine. Fl.? Pl. 2 feet.

Cult. The species of this genus thrive well in any common garden soil, and they are easily increased by seeds, or dividing the plants at the root. They grow most freely in damp shady situations.

XIII. HYPE'COUM (from ὑπηχεω, *hypecheo*, to rattle; noise of the seeds in the pods when shaken.) Tourn. inst. 230. t. 115. Lin. gen. 171. Gært. fruct. 2. p. 164. t. 115. Juss. gen. 236. Lam. ill. t. 88. D. C. syst. 2. p. 101. prod. 1. p. 123.

Lin. syst. *Tetrándria, Digýnia.* Sepals 2, lanceolate. Petals 4, inner ones usually 3-lobed. Stamens 4. Stigmas 2, somewhat stipitate. Capsules silique-formed, 2-valved, transversely knotted or articulated, with 2 lateral placentas. Seeds solitary

in each articulation, alternately fixed on both sides of the placentas. Embryo filiform, arched. Albumen fleshy.—Small annual herbs, yielding a yellow juice, which is affirmed to have the same effect as opium. Radical leaves, smooth, glaucous, stalked, pinnate; segments pinnately-multifid. Stem, or floral leaf, sessile, situated under the branches or pedicels. Flowers small, terminal, umbellate, yellow.

1 H. procu'mbens (Lin. spec. 181.) capsules articulated, compressed, arched; petals 3-lobed, external ones smooth on the back. ⊙. H. Native of Europe, from Spain to Astracan, in sandy places. Lam. ill. no. 1720. t. 88. Schkuhr. handb. 1. p. 90. t. 27. Smith, fl. græc. 155. H. nodòsum. Lam. fl. fr. 2. p. 640. H. arcuàtum, Mœnch. meth. 217. The 2 outer petals largest. Central segment of the inner petals toothed.

Procumbent Hypecoum. Fl. Jun. Jul. Clt. 1596. Pl. $\frac{1}{4}$ foot.

2. H. littora'le (Wulf. in Jacq. coll. 2. p. 205. icon. rar. 2. t. 309.) capsules articulated, compressed, arched; petals all entire, linear-spatulate, outer ones pubescent on the back. ⊙. H. Native of Carinthia, along the sandy shores of the Adriatic sea; also in Mauritania, along the Mediterranean. Very like *H. procúmbens*.

Sea-shore Hypecoum. Fl. Jun. Jul. Pl. $\frac{1}{4}$ foot.

3 H. imbe'rbe (Smith fl. græc. 2. p. 47. t. 156.) capsules articulated, compressed, arched; sepals dentately-fringed; petals 3-lobed, all beardless. ⊙. H. Native of the island of Cyprus. Inner petals half trifid, not 3-parted; lateral lobes oblong, devaricating.

Beardless-petalled Hypecoum. Fl. Jun. July. Pl. $\frac{1}{4}$ foot.

4 H. pa'tens (Willd. hort. berl. t. 5.) capsules articulated, cylindrical, curved; petals glabrous, outer ones nearly entire, unguiculate, heart-shaped; inner ones 3-parted. ⊙. H. Native of sandy deserts near Alexandria; plentiful in the peninsula of Ras-Otten, and the island of Crete. Mnemosílla Ægyptìaca, Forsk. ægyp. 122. The two exterior petals are large and unguiculate, with a very broad acute limb, appearing as if it were furnished with a lobule on both sides; and hence it is nearly halbert-shaped.

Spreading Hypecoum. Fl. April, May. Pl. $\frac{1}{4}$ foot.

5 H. pe'ndulum (Lin. spec. 181.) capsules knotted, cylindrical, pendulous; petals glabrous, the 2 outer ones ovate-oblong, pendulous, the 2 inner ones 3-parted. ⊙. H. Native of Europe, from Spain to the Caspian Sea, in sandy fields. Mill. fig. t. 250. f. 1. Petals smooth, pale-yellow, large, oval-oblong, entire, tapering a little towards the base.

Pendulous-capsuled Hypecoum. Fl. May, July. Clt. 1640. Pl. $\frac{1}{4}$ foot.

6 H. ere'ctum (Lin. spec. 181.) capsules not articulated, erect, compressed; petals glabrous, outer ones wedge-shaped, somewhat 3-lobed, inner ones trifid; lateral lobes somewhat 2-lobed, middle one small. ⊙. H. Native of Dauria, at the rivers Lelenga, Angara, Kourba, &c.; and beyond the Baikal, even unto the mountains of China. Amm. ruth. 58. t. 9. This species has the largest flowers of any in the genus. Sepals small, lanceolate, pointed.

Erect-capsuled Hypecoum. Fl. June, July. Clt. 1759. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

Cult. The species of this genus only require to be sown in the flower border where they are intended to remain.

Order XIII. FUMARIA'CEÆ. (plants agreeing with *Fumària* in many important characters.) D. C. syst. 2. p. 105. Fumarièæ, D. C. theor. ed. 2. p. 244.

Calyx of two small deciduous membranous sepals, (f. 24. *o.*). Petals 4, (f. 42. *h. b.*) irregular, usually connected at the base, sometimes all free, sometimes only with the lower one free, (f. 42. *l.*), and the rest connected, the 2 exterior ones alternating with the sepals, sometimes both are equally drawn out at the base into a hollow spur, or gibbosity, (f. 24. *o.*) sometimes with the lower one flat, and the upper one with a spur, (f. 42. *h. k.*) or gibbosity at the base. Stamens 6, connected together into 2 bundles, (f. 42. *j.* 44. *e.*) very rarely all free; these bundles appear as if they were 3-anthered filaments, (f. 42. *j.* 44. *e.*) or the filament bearing an 8-celled anther, the lateral anthers being 1-celled, the intermediate ones 2-celled. Ovary 1, (f. 42. *c.*) constantly of 2-connected carpels (f. 42. *e.*). Style filiform (f. 42. *i.*). Stigma bilamellate, (f. 42. *d.*). Capsules dry, of various forms, sometimes silique-formed (f. 42. *e.* f. 44. *b.*) with opposite valves, and 2 nerve-formed permanent placentas at the sutures, many-seeded, sometimes 2-valved 2-seeded, with the valves connected and indehiscent, sometimes valveless and 1-seeded, (f. 42. *m. n.*) from abortion; sometimes baccate, many-seeded, (f. 43. *g. p.*) Seeds fixed to the lateral placentas, (f. 42. *g.* f. 44. *b.*), horizontal, ovate-globose, shining, black, furnished at the base with aril or a caruncle. Albumen fleshy. Embryo in the seeds of indehiscent fruit small and straight, those in the dehiscent capsules longer and a little arched. Cotyledons oblong, flat. Herbs yielding a watery juice. Roots annual or perennial, fibrous or tuberous. Stems annual, herbaceous, usually angular. Leaves usually decompound, from the petiole being branched, smooth. Racemes terminal, or opposite the leaves. Bracteas membranous, one under each pedicel, as well as furnished with sepal-like bracteoles on each pedicel. Flowers purple, white, or yellow, emulating those of *Polygala*. The herbs are bitter and scentless; they are reckoned slightly diaphoretic and aperient. The juice was prescribed by old practitioners against obstructions of the viscera and liver, but is more especially used for curing various cutaneous eruptions. This order differs from *Papaveràceæ*, to which it is very closely allied, in abounding in watery juice, instead of a milky juice, and in the petals being irregular, usually connected, as well as in the stamens being diadelphous. It differs from *Cruciferæ* in the calyx being of 2 sepals, as well as in the structure of the petals and seeds, and disposition of the stamens. The plants contained in *Fumariàceæ* are all natives of the temperate zones.

Synopsis of the Genera.

I. Diely'tra. Petals 4, the 2 outer equally spurred or gibbous at the base, (f. 42. *o.*). Silique 2-valved, many-seeded, (f. 42. *i. o. p.*).

II. Dactylica'pnos. Petals 4, deciduous, (f. 43. *a.*); the 2 exterior ones sessile, gibbous at the base; the 2 inner ones on long claws, (f. 43. *c.*). Berries cylindrical-oblong, (f. 43. *g.*) many-seeded, (f. 43. *p.*).

III. Adlu'mia. Petals 4, connected together into a monopetalous, spongy, permanent corolla, which is not gibbous at the base, (f. 42. *a.*) Silique 2-valved, many-seeded, (f. 42. *e.*) (f. 42. *a. b. c. d. e.*).

IV. Cystica'pnos. Petals 4, one of which is gibbous at the base. Capsule bladdery, many-seeded, (f. 42. *f. g.*).

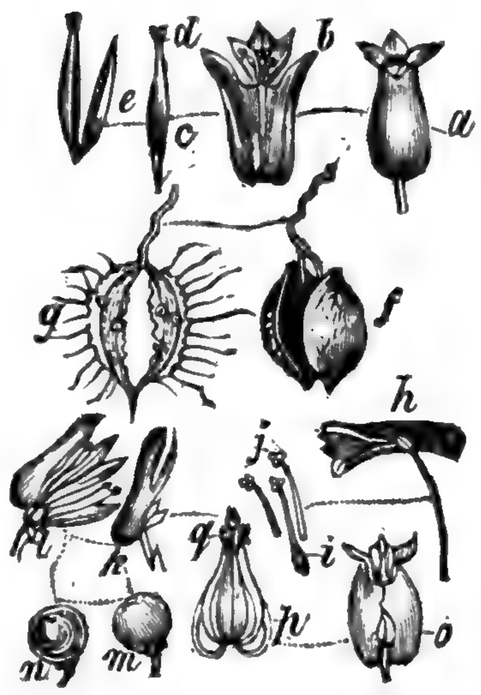
V. Cory'dalis. Petals 4, one of which is spurred at the base. (f. 44.) Silique 2-valved, compressed, many-seeded, (f. 44. *b.*).

VI. Sarcoca'pnos. Petals 4, one of which has a spur at the base, (f. 42. *h.*) Capsule 2-valved, indehiscent, 2-seeded, (f. 42. *h. i. j.*).

VII. Fuma'ria. One of the petals gibbous or spurred at the base, (f. 42. *k.*) Capsule indehiscent, 1-seeded, (f. 42. *m. n.*).

VIII. Discoca'pnos. One of the petals with an obtuse spur at the base. Capsule indehiscent, 1-seeded, flat, girded by a wing in the centre.

FIG. 42.



I. DIELY'TRA (from δις, *dis*, double; and ελυτρον, *elytron*, a sheath; alluding to the two sheath-like spurs at the base of the flower.) Börckh. in Röm. arch. 2. p. 46. D. C. syst. 2. p. 107. prod. 1. p. 125.

Lin. syst. *Diadélphia, Hexándria.* Petals 4, the 2 exterior ones equally spurred or gibbous at the base (f. 42. *o.*). Stamens 6, altogether free (f. 42. *p.*), or approximating into two bundles, or joined at the top (f. 42. *g.*), and free at the base, (f. 42. *p.*). Capsules 2-valved, many-seeded. Perennial herbs with tuberous, horizontal, or fibrous roots. Leaves stalked, multifid, usually all radical, seldom cauline. Flowers racemose, white or purple.

1 D. cucullà'ria (D. C. syst. 2. p. 108.) spurs 2, straight, acute; scape naked; raceme simple. ♃. H. Native of North America, in rich mould among rocks on the sides of hills, from Canada to Virginia; also in the Alleghany mountains, and common on the subalpine regions of the Blue mountains, in open woody places. Fumària cucullària, Lin. spec. 983. Sims, bot. mag. t. 1127. Corýdalis cucullària, Pers. ench. 2. p. 269. Cucullària bulbòsa, Raf. in Desv. journ. bot. 1809. 2. p. 159. Root tuberous, of a very bitter taste. Flowers unilateral, white, but yellow at the tip. This plant is aptly called in America *Dutchman's Breeches*, alluding to the two horns at the base of the flower.

Var. β; divaricàta (D. C. syst. l. c.) spurs divaricate. Fumària cucullària, Mill. dict. no. 9. Perhaps a proper species. This is the *D. cucullària* of Hook, fl. bor. amer. 35.

Hooded-spurred Dielytra. Fl. May, July. Clt. 1731. Pl. ¾ foot.

2 D. bracteo'sa (D. C. syst. 2. p. 109.) spurs 2, straight, acute; stem leafy; bracteas cut. ♃. H. Native of North America? Corýdalis bracteòsa, Spreng. syst. 3. p. 162. Very like *D. cucullària*, but differing in its smaller stature, and the lobes of the leaves being fewer, broader, and a little shorter, as well as in the bracteas being cut. Root tuberous. Flowers white, tipped with yellow.

Bracteate Dielytra. Fl. May, July. Cult. 1823. Pl. ½ foot.

3 D. formòsa (D. C. syst. 2. p. 109.) spurs 2, short, somewhat incurved, blunt; scape naked; racemes rather compound; stigma 2-angled. ♃. H. Native of North America, on the cliffs of shady rocks, on the tops of the mountains in Virginia, Carolina, and Canada; also at Nootka Sound. Fumària formòsa, Andr. bot. rep. 393. Sims, bot. mag. 1335. Corýdalis formòsa, Pursh fl. amer. sept. 2. p. 462. Coryd. biaurìta, Horn. hort. hafn. 2. p. 668? Roots horizontal. Flowers bright-red.

Beautiful Dielytra. Fl. May, Jul. Cult. 1796. Pl. ½ foot.

4 D. exi'mia (D. C. syst. 2. p. 109.) spurs 2, somewhat incurved, blunt, short; scape naked; racemes compound; stigma 4-angled. ♃. H. Native of North America, at Nootka Sound. Fumària exímia, Ker. in bot. reg. 1. t. 50. Corýdalis exímia, Spreng. syst. 3. p. 162. An elegant plant, very like *D. formòsa*, but larger in all its parts, of a paler green colour. Root horizontal. Flowers rose-coloured.

Choice Dielytra. Fl. May, July. Clt. 1812. Pl. ½ foot.

5 D. specta'bilis (D. C. syst. 2. p. 110.) spurs 2, very blunt, ventricose, short; stem leafy; segments of leaves obovate-cuneate, cut. ♃. H. Native of Siberia, on the frontiers of China, and in the north of China. Fumària spectábilis, Lin. amœn. 7. p. 457. t. 7. spec. 953. Capnórchis spectábilis, Börck. in Röm. arch. 1. p. 2. p. 46. Corýdalis spectàbilis, Pers. ench. 2. p. 269. A plant with large showy purple flowers, each nearly an inch long.

Remarkable Dielytra. Fl. May, July. Clt. 1816. Pl. ½ ft.

6 D. tenuifòlia (D. C. syst. 2. p. 110.) spurs 2, very short and very blunt; scape naked, 1-3-flowered; pedicels shorter than the calyx; leaves multifid; lobules linear. ♃. H. Native of Kamtschatka. Deless. icon. sel. 2. t. 9. f. B. Corýdalis tenuifòlia, Pursh. fl. amer. sept. 2. p. 462. Root tuberous. Flowers large in proportion to the plant, pale red, tipped with a more intense colour.

Fine-leaved Dielytra. Fl.? May, July. Clt. 1824. Pl. ¼ foot.

7 D. Canade'nsis (D. C. prod. 1. p. 126.) spurs 2, short, blunt; scape naked, simple, few-flowered; pedicels short; leaves multifid; lobes linear; stigma stretched out, 4-lobed. ♃. H. Native of Canada, about Montreal. Corýdalis Canadénsis, Gold in edin. phil. journ. 1822. p. 330. D. exímia, B. Hook, fl. bor. amer. 35. Leaves glaucous. Herb 6-8 inches long. Flowers white. Root horizontal.

Canadian Dielytra. Fl. May, July. Clt. 1822. Pl. ½ foot.

8 D. lachenaliæflòra (D. C. syst. 2. p. 111.) spurs 2, very short and very blunt; scape naked, 2-4-flowered; pedicels longer than the calyx; leaves multifid; lobes linear, very acute. ♃. H. Native of Siberia, beyond the Baikal, and about Ochotskoi, as well as in the islands of the extreme north-west coast of America, and at Behring's Straits. Corýdalis Lachenaliæflòra, Fisch. in litt. Rud. in mem. sci. petersb. 1. t. 19. Fumària tenuifòlia, Led. mem. acad. petersb. 5. p. 515. no. 37. Fumària cucullària, Pall. Flowers fine red, very like those of *D. tenuifòlia*, but smaller. Roots horizontal.

Lachenalia-flowered Dielytra. Fl. May, Jul. Clt. 1824. Pl. ½ ft.

9 D. sca'ndens (D. Don, prod. fl. nep. p. 198.) spurs 2, very blunt; racemes simple, corymbose, opposite the leaves; leaves bipinnate; leaflets oval-oblong, mucronulated, smooth, glaucous beneath, lower ones 2-3-parted; petioles of the primary leaves profoundly 2-parted, the rest cirrhiferous branches. ⊙. H. Native of Nipaul. Stem climbing. Perhaps this is *Dactylicápnos thalictrifòlia*.

Climbing Dielytra. Pl. cl.

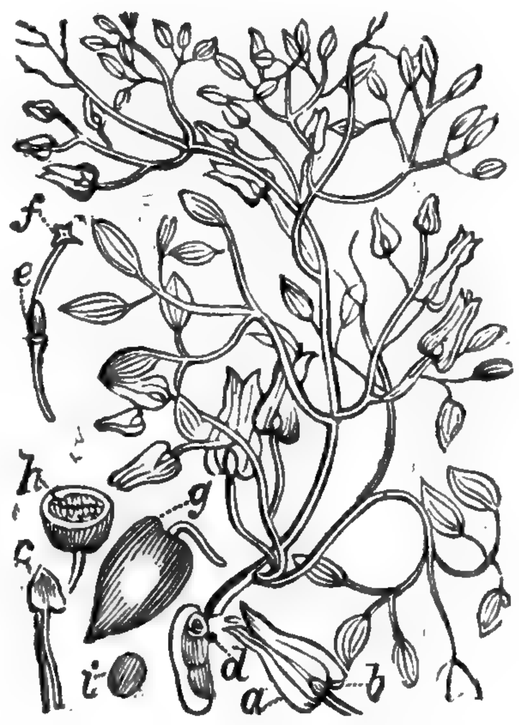
Cult. A pretty genus of perennial herbaceous plants. They thrive best in a light rich soil, and are easily increased by dividing the plants at the roots or by seeds. The *D. scándens* being an annual plant, will only require to be sown in the open border, or to be raised on a hot-bed, and afterwards planted out.

II. DACTYLICA'PNOS (from δακτυλος, *dactylos*, a finger; καπνος, *kapnos*, fumitory, probably in allusion to the divided tendrils.) Wall. tent. fl. nap. p. 51. t. 39.

Lin. syst. *Diadélphia, Hexándria.* Petals 4, cruciate (f. 43. *a.*) deciduous; the 2 exterior ones sessile, equally gibbous at the base (f. 43. *b.*), the 2 inner ones are on long claws (f. 43. *c.*). Stamens 5-6, collected into 2 bodies. Stigma 4-lobed (f. 43. *f.*). Berries cylindrical, oblong (f. 43. *g.*), many-seeded (f. 43. *h.*).—A smooth scandent glaucous herb, with the stem and branches filiform and twisted. Petioles ending in branched tendrils. Leaves triternate. Racemes axillary or opposite the leaves, on long peduncles. Flowers about 20, large, oblong, flattish, nodding, yellow with a rufescent mouth, fragrant, dilated

at the base into two horns or gibbosities. Peduncles filiform; pedicels each furnished with a linear bracteole at the base. Stem 2-3 feet high. Berries indehiscent, fleshy, soft, pale-violet. In habit the plant agrees with *Cysticápnos*, but the flowers resemble those of *Dielýtra*.

FIG. 43.



1 D. thalictrifòlia (Wall. l. c.) ♃? F. Native of Nipaul on Sheopore (f. 43.).

Thalictrum-leaved Dactylicapnos. Fl. June, July. Pl. cl.

Cult. This singular plant has not yet been introduced to Britain, it is therefore not ascertained whether it would stand the climate without protection during winter. It will no doubt grow freely in a mixture of loam and peat, and can only be increased by seeds, or cuttings.

III. ADLU'MIA (from *adlumino*, to fringe with purple; flowers bordered with purple.) Rafin. in Desv. jour. bot. 1809. 2. p. 169. D. C. syst. 2. p. 111. prod. 1. p. 126.

Lin. syst. *Diadélphia*, *Hexándria*. Petals 4, joined into a permanent monopetalous corolla (f. 42. *a*.) which is bigibbose and spongy at the base. Stamens diadelphous, adnate to the corolla at the base (f. 42. *b*.). Capsules oval-oblong, 2-valved, many-seeded (f. 42. *e*.). A smooth delicate climbing herb, with tendrilled petioles.

1 A. cirrhòsa (Raf. l. c.) ♂. H. Native of Canada and Carolina in humid shady places in beech woods. Corýdalis fungòsa, Vent. choix. t. 19. Fumària fungòsa, Ait. hort. kew. ed. 1. vol. 3. p. 1. Bicúculla fumarioìdes, Börck. in Rœm. arch. 1. p. 2. p. 46. Capnoìdes scándens, Mœnch. suppl. 215. Fumària récta, Mich. fl. bor. amer. 2. p. 51. Flowers whitish or pale-rose-coloured. Seeds 4-6, shining, black.

Tendrilled Adlumia. Fl. June, Sept. Clt. 1788. Pl. cl.

Cult. The seeds of this plant may be sown under a hedge or shrub in a moistish situation, or it may be sown in the open border, with dead branches stuck in around the plants in order to support them, as in the case of peas.

IV. CYSTICA'PNOS (from κυστις, *kystis*, a bladder, and καπνος, *kapnos*, one of the Greek names for fumitory; in allusion to the bladdery capsules.) Börh. lugd. 391. Gært. fruct. 2. p. 161. t. 115. D. C. syst. 2. p. 112. prod. 1. p. 126.

Lin. syst. *Diadélphia*, *Hexándria*. Petals 4, deciduous, the upper one of which is gibbose at the base. Stamens diadelphous. Capsules bladdery (f. 42. *f*.), many-seeded (f. 42. *g*.), oval-globose, 2-valved, with the placentas connected by membranous net-work (f. 42. *g*.). A climbing, smooth, dichotomous, slender herb, with bipinnate leaves, which are tendrilled at the top, and the segments are 3-lobed. Flowers small, racemose, white, tipped with red.

1 C. Africa'na (Gært. l. c.) ⊙. H. Native of the Cape of Good Hope. Fumària vesicària, Lin. spec. 984. Corydalis vesicària, Pers. ench. 2. p. 269.

African Bladder Fumitory. Fl. June, Aug. Clt. 1696. Pl. cl.

2 C. Alexandri'na (Link, and Ott. in litt.) this plant does not appear to differ from the last species. ⊙. H. Native of Alexandria.

Alexandrian Bladder Fumitory. Fl. Ju. Aug. Clt. 1827. Pl. cl.

Cult. The seeds of these plants may be sown in the open border, and being climbing plants they should be supported by small dead branches, or allowed to climb up the side of a hedge.

V. CORY'DALIS (κορυδαλις, one of the Greek names of Fumitory; it is derived from κορυδαλος, *korydalos*, a lark, because the spur of the flower resembles the spur of a lark.) D. C. fl. fr. 4. p. 636. syst. 2. p. 113. prod. 1. p. 126. Pers. ench. 2. p. 269. Capnoìdes, Tourn. inst. 423. t. 237.

Lin. syst. *Diadélphia*, *Hexándria*. Petals 4, the upper one of which has a spur at the base (f. 42. *h*.), sometimes all joined at the base, sometimes with the lower one free, and the rest joined, but when they begin to decay, they all become free and deciduous. Stamens (f. 44. *e*.) diadelphous. Capsules 2-valved, compressed, oval-oblong or linear, many-seeded (f. 44. *b*.). Smooth, usually glaucous herbs, with ternate or pinnate-cut leaves. Racemes terminal or opposite the leaves, with a bractea under each pedicel. Roots fusiform, tuberous, or fibrous.

§ 1. *Leonticoìdes (a name applied to this section, because the plants it contains resemble Leóntice, which see.) Root fusiform. Stem simple, bearing 2 opposite leaves.*

1 C. verticilla'ris (D. C. syst. 2. p. 114.) stem quite simple, 2-leaved; leaves glaucous, opposite, biternate, lobes or segments linear. ♂. H. Native of Persia on Mount Elwend. Flowers 8 lines long. Spur of flowers conical-subulate, blunt. Flowers small, white?

Whorled-leaved Corydalis. Pl. ¼ foot.

2 C. oppositifòlia (D. C. syst. 2. p. 114.) stem quite simple, 2-leaved; leaves glaucous, opposite ternate; petioles branched, middle one ternate; segments or lobes ovate. ♂. H. Native of Syria, between Aleppo and Mossul. Flowers white, an inch long, with a spur 6 lines long.

Opposite-leaved Corydalis. Pl. ½ foot.

3 C. diphy'lla (Wall. tent. fl. nap. p. 54.) root? stem short, simple, or furnished with 1 axillary flowering branch, bearing 2 leaves in the middle; leaves opposite, stalked, triternate; segments cuneated, obtuse, deeply 2-lobed or entire; bracteas linear-oblong, cuspidate, large, exceeding the floriferous peduncles, but equal with the fructiferous ones. ♃.? F. Native of Nipaul on mountains about Sirinagur. Flowers yellowish, an inch long, tipped with purple, disposed in racemes about 1 or 2 inches long. Sepals crested. This species probably belongs to the present section.

Two-leaved Corydalis. Fl. June, Aug. Pl. 2 feet.

4 C. meifo'lia (Wall. tent. fl. nap. p. 52. t. 41.) herb erect; root long, fusiform; leaves supra-decompound; segments capillary; flowers in loose racemes, on long stalks; bracteas decompound, setaceous; siliques much shorter than the peduncles. ♃. F. Native of Nipaul on Gosaingsthan. Herb smooth, fleshy, erect. Stems tufted. Flowers large, yellow, nodding, resembling those of *C. nóbilis*. Sepals 2, kidney-shaped, with a purple border. Siliques cuneated, compressed, 4-8-seeded. Leaves resembling those of *Mèum Athamánticum*.

Meum-leaved Corydalis. Pl. 1 foot.

5 C. lóngipes (D. C. prod. 1. p. 128. Wall. tent. fl. nap. p. 53. t. 42.) root branched; stem procumbent or erect, very slender; leaves triternate; lobes obovate, a little cut, obtuse; lower bracteas cut; siliques linear-cuneated, compressed, about equal in length to the pedicel. ♃. F. Native of Nipaul on Sheopore, also on Gosaingsthan. Fumària bulbòsa, Thunb. fl. jap. 277.? C. bulbòsa, Pers. ench. 2. p. 269. Root slender, perpendicular. Stems angular. Racemes terminal. Flowers secund, yellow; sepals kidney-shaped, fringed.

Long-pedicelled Corydalis. Pl. 1 foot.

§ 2. *Capnìtes. Roots tuberous. Stem simple, bearing a few alternate leaves.*

6 C. RUTÆFÒLIA (D. C. syst. 2. p. 115.) stem simple, not scaly at the base; leaves 2, nearly opposite, glaucous, ternate; segments ovate, or with the middle one 3-parted; bracteas ovate. ♃. H. Native of the island of Cyprus. Fumària rutæfòlia, Smith, fl. græc. t. 667. Flowers yellow? Spur horizontal, blunt, callose at the tip, nearly half an inch long, longer than the flower.

Rue-leaved Corydalis. Pl. $\frac{1}{4}$ foot.

7 C. DECU'MBENS (Pers. ench. 2. p. 269.) stem simple, decumbent; leaves biternate; lobes wedge-shaped, 3-toothed; bracteas ovate, entire; racemes 3-4-flowered. ♃. H. Native of Japan. Fumària bulbòsa. Thunb. nov. act. petrop. 12. p. 102. t. A. Fumària bulbòsa, Thunb. jap. 27? but not Lin. Flowers yellow, with the spur the length of the limb.

Decumbent Corydalis. Pl. decumbent.

8 C. PAUCIFLÒRA (Pers. ench. 2. p. 269.) stem simple, not scaly at the base; leaves biternate, 2 or 3 on each stem under the middle; segments 3-parted; lobes obovate; bracteas ovate, acute; racemes crowded, few-flowered. ♃. H. Native of the Altaian mountains in Siberia, and island of St. Lawrence in Behring's Straits. Deless. icon. sel. 2. t. 9. f. A. Fumària pauciflòra, Stev. in Willd. spec. 3. p. 861. F. Altàica, Ledeb. Flowers purplish; spur thick, incurved at the top, very blunt, rather longer than the tube.

Var. β, aquilegifòlia (D. C. syst. 2. p. 116.) hardly different from the species, except the racemes are 7-8-flowered, and the flowers nearly an inch long. Fumària aquilegifòlia, Patrin. ind.

Var. γ, Altàica (Fumaria Altàica, Led. in mem. acad. peterb. 5. 1815. p. 551.) Flowers pendulous.

Few-flowered Corydalis. Fl. April, May. Clt. 1823. Pl. 6 to 7 inches, erect.

9 C. MARSCHALLIA'NA (Pers. ench. 2. p. 269.) stem simple, not scaly; leaves 2, situated above the middle of the stem, biternate; lobes oval, entire or bifid; racemes short; bracteas ovate. ♃. H. Native of Tauria, also on the mountains in the Ukraine under trees. Deless. icon. sel. 2. t. 10. Fumària Marschalliàna, Pall. nov. act. petrop. 10. p. 315. Flowers sulphur-coloured; spur straight or hardly incurved, blunt (f. 44.).

FIG. 44.

Marschall-Bieberstein's Corydalis. Fl. April, May. Clt. 1823. Pl. $\frac{3}{4}$ foot.

10 C. AMBI'GUA (Cham. in Schlecht. Linnæa. 1. p. 558.) stem almost simple, erect, scaly below; leaves 2-3, biternate; segments oval, obtuse, somewhat cuneated, the first ones on long petioles; raceme many-flowered, loose; bracteas entire; siliques linear, erect. ♃. H. Native of Siberia, Kamtschatka, and the north-west coast of America. Fumària ambígua, Pall. in herb. Willd. Flowers on long peduncles, yellow, a little nodding; spur obtuse, straight. Root a solid tuber (f. 44. *f*.).

Ambiguous Corydalis. Pl. $\frac{1}{2}$ foot.

11 C. LONGIFLÒRA (Pers. ench. 2. p. 269.) stem simple, furnished with leafy scales under the leaves; leaves biternate; segments 3-parted; lobes oval-oblong; bracteas oblong, entire; racemes elongated, 10-flowered; spur longer than the pedicels. ♃. H. Native of Siberia on the Altaian mountains, and on the hills about Zmeof, as well as at Jrtish in saltish fields. Fumària Schangìni, Pall. act. petrop. 1779. 2. p. 267. t. 14. f. 1 and 2. Flowers pale-purple; spur slender, awl-shaped at the apex, and somewhat incurved, nearly half an inch long.

Var. β, caudàta (Lam. dict. 2. p. 569.) hardly differing from the species, unless that the flowers are smaller and the lobes of the leaves a little blunter. Native of the north of China on mountains about Pekin.

Long-flowered Corydalis. Fl. April, May. Pl. 1 foot.

12 C. TUBERÒSA (D. C. fl. fr. 4. p. 637. syst. 2. p. 117.) stem simple, not scaly; leaves 2, biternate; segments cuneated, cleft; bracteas ovate, entire; root hollow. ♃. H. Native of Europe, from Sweden to Portugal, in hedges and under trees in rather humid situations. Fumària càva, Mill. dict. no. 7. Curt. bot. mag. 332. Fumària bulbòsa, Scop. carn. no. 864. Fumària màjor, Roth. germ. 1. p. 300. Corýdalis bulbòsa, Pers. ench. 2. p. 69. Corýdalis càva, Wahl. helv. 2. p. 126. Flowers horizontal, purple.

Var. β, albiflòra (Sims, bot. mag. t. 2340.) flowers white.

Tuberous-rooted Corydalis. Fl. Feb. May. Clt. 1596. Pl. $\frac{1}{2}$ ft.

13 C. FABA'CEA (Pers. ench. 2. p. 269.) stem nearly simple, erect, scaly under the lower leaf; leaves 3 or 4 stalked, biternately-cut; segments oblong, bluntish; bracteas ovate, acute, longer than the pedicels; root solid. ♃. H. Native of Sweden, Denmark, Germany, Vallais, France, &c. in shady mountains. Fumària fabàcea, Retz. prod. ed. 2. no. 859. Horn. fl. dan. t. 1394. F. intermèdia, Ehrh. Like *C. tuberòsa*, but differing in the roots being solid, not hollow. Plant and flowers smaller. Flowers purple.

Bean-like Corydalis. Fl. April, June. Clt. 1815. Pl. $\frac{1}{2}$ foot.

14 C. CAUCA'SICA (D. C. syst. 2. p. 119.) stem very simple, erect, scaly under the lower leaf; leaves 2, biternate; segments cut into linear lobes; bracteas oblong, entire; racemes rather loose. ♃. H. Native of Caucasus on wooded mountains. Fumària fabàcea, Bieb. fl. taur. 2. p. 145. Differing from *C. fabàcea*, in the stems being very simple, and bearing only 2 leaves, not 3 or 4-leaves, and in the segments being cleft into linear lobes, not oblong bluntish ones.

Caucasian Corydalis. Fl. Feb. May. Clt. 1820. Pl. $\frac{1}{2}$ foot.

15 C. BULBÒSA (D. C. fl. fr. 4. p. 637.) stem simple, erect, scaly under the lower leaf; leaves 3 or 4 stalked, biternate; segments cuneated or oblong, and are as well as the bracteas cut at the top; root solid. ♃. H. Native under hedges and in woods in rather humid places; nearly throughout Europe; also in Tauria and Siberia; in England about Kendal and other parts of Westmoreland; also at Perry Hall, near Birmingham; at Wickham, Hampshire. Fumària sólida, Smith, engl. bot. t. 1471. Curt. bot. mag. 231. Fumària bulbòsa, Mill. dict. no. 8. Fumària Hallèri, Willd. prod. no. 704. F. mìnor, Roth. fl. germ. 1. p. 300. Corýdalis digitàta, Pers. ench. 2. p. 269. Fumària digitàta, Lejeun. fl. spa. 2. p. 89. C. densiflòra, Presl. Flowers purplish, seldom white.

Var. β, viridiflòra (D. C. syst. 2. p. 120.) flower green; roots hollow.—Lobel. icon. t. 760. f. 1. Swert. floril. 2. t. 7. f. 4.—Bauh. hist. 3. p. 1. p. 205. f. 1.—Morr. hist. 2. sect. 3. p. 261. t. 12. f. 7.

Bulbous-rooted Corydalis. Fl. April, May. England. Pl. $\frac{1}{2}$ ft.

16 C. ANGUSTIFO'LIA (D. C. syst. 2. p. 120.) stem simple, scaly under the lower leaf; leaves 2, stalked, biternate; segments cleft into linear lobes; bracteas deeply-serrated at the apex. ♃. H. Native of Iberia and near Odessa. Fumària angustifòlia, Bieb. fl. taur. 2. p. 146. Very like *C. bulbòsa*, but differing in the lobes of the leaves being much more elongated and truly linear, not cuneated or oblong. Flowers purplish.

Narrow-leaved Corydalis. Fl. Apr. May. Clt. 1819. Pl. $\frac{1}{2}$ ft.

17 C. PE'RSICA (Schlecht. in Linnæa. vol. 1. p. 567.) leaves thrice ternate; leaflets wedge-shaped, sharply-cut; bracteas entire, ovate; capsules nodding. ♃. H. Native of Hyrcania. Flowers purplish?

Persian Corydalis. Pl. $\frac{1}{2}$ foot.

18 C. INCI'SA (Pers. ench. 2. p. 269.) stem simple, erect;

leaves biternate; segments acutely-cut; bracteas oblong-cuneated, cut, shorter than the pedicels. ♃. H. Native of Japan. Fumària incìsa, Thunb. nov. act. petrop. 12. p. 104. t. D. Differing from *C. nóbilis*, to which it is nearly allied by the teeth of the leaflets being acuminated, and the bracteas deeply-toothed, and which are shorter than the pedicels. Flowers yellow; spur straight.

Cut-leaved Corydalis. Fl. May. Pl. ¾ foot.

19 C. BRACTEA'TA (Pers. ench. 2. p. 269.) stem simple, erect, scaly near the base; leaves 2, biternate; segments cleft into linear lobes; bracteas cuneated, profoundly cut at the apex, longer than the pedicels; spur straight, long. ♃. H. Native of Siberia on the Altaian mountains, and about Zmeof and Salair. Fumària bracteàta, Stev. in Willd. spec. 3. p. 858. Flowers sulphur-yellow, horizontal, an inch long; spur longer than the pedicel.

Bracted Corydalis. Fl. May, June. Clt. 1823. Pl. ¾ foot.

20 C. GOVENIA'NA (Wall. tent. fl. nap. p. 55.) root? leaves all stalked, oblong, bipinnate; leaflets cuneated, profoundly pinnatifid, linear-oblong, obtuse, ending in an entire or 2-lobed point; racemes loose, secund; bracteas wedge-shaped, deeply lobed, exceeding the peduncles in length, upper ones lanceolate, entire. ♃.? G. Native of the East Indies on the mountains of Gurval. This species seems to be intermediate between *C. nóbilis* and *C. bracteàta*. Racemes rounded or oblong. Flowers yellow, crowded exactly like those of *C. nóbilis*. Sepals kidney-shaped, toothed. Siliques not seen.

Goven's Corydalis. Pl. 1 foot.

21 C. NÓBILIS (Pers. ench. 2. p. 269.) stem simple, erect, not scaly; leaves bipinnate; segments cuneated, cut at the top; bracteas acute, entire or cut. ♃. H. Native of Siberia, Altaia, and on the banks of the Kolyvan in shady places. Fumària nóbilis, Jacq. vind. t. 116. Sims, bot. mag. t. 1953. Ker. bot. reg. 395. Flowers pale-yellow, with a long spur, which is blunt and incurved at the point. A beautiful plant.

Var. β, *odontophýlla* (D. C. syst. 2. p. 122.) bracteas all ovate, and deeply toothed. Habit slenderer than that of the species.

Noble Corydalis. Fl. May. Clt. 1783. Pl. ¾ foot.

22 C. SCOULE'RI (Hook, fl. bor. amer. p. 36. t. 13.) leaf usually solitary, 3 or 4 times pinnate, longer than the raceme, which is nearly simple; leaflets obliquely oval or oblong, decurrent entire and lobed; bracteas oblong, longer than the pedicels. ♃. H. Native of the north-west coast of North America in dark shady woods; plentiful near the confluence of the Columbia with the sea. Root thick, woody, with a scaly neck. Flowers pendent, rose-coloured.

Scouler's Corydalis. Pl. 1 to 2 feet.

23 C. HAMILTO'NII; stem simple; leaves triternate, radical ones on long stalks; leaflets 3-lobed; bracteas 3, sessile, digitate; pedicels terminal, elongated, 1-flowered, somewhat umbellate; capsules linear, one half shorter than the pedicels. ♃. F. Native of Nipaul at Narain-Hetty C. lóngipes, D. Don. prod. fl. nep. p. 198. Habit of *C. Sibírica*. Flowers purple, but yellow on the inside. Spur straight, very blunt. Plant glaucous, smooth.

Hamilton's Corydalis. Pl. ¼ foot.

24 C. JU'NCEA (Wall. tent. fl. nap. p. 54. t. 42.) root? stem erect, quite smooth, and simple, 2-3-leaved; leaves linear-lanceolate, quite entire; racemes elongated; silique, equal in length to the pedicels. ♃. F. Native of Nipaul at Gosaingsthan. Radical leaves not seen. Flowers yellow, nodding, with purple mouths; spur cylindrical, obtuse. Siliques deflexed, compressed, 4-5-seeded. In consequence of the root being unknown it is doubtful whether this plant belongs to the present section.

Rush-like Corydalis. Fl. Aug. Pl. 1 to 3 feet.

25 C. PÆONIÆFO'LIA (Pers. ench. 2. p. 260.) stem erect, branched; leaves bipinnate; segments ovate, ultimate ones lobed; bracteas oblong-linear, acute; capsules ovate. ♃. H. Native of Siberia at the bottom of rocks near the rivers Lena, Biela and Jama, also between Jrkoutsk and Ochotskoi. Fumària pæoniæfòlia, Steph. in Willd. spec. 3. p. 859.—Gmel. fl. sib. 4. p. 66. t. 34. Flowers large, purple, half an inch long, with a conical, straight, somewhat acute spur. Trunk of root horizontal?

Pæony-leaved Corydalis. Fl. May. Clt. 1823. Pl. ¾ ft.

§ 3. *Capnoìdes, (plants agreeing in character with C. capnoìdes.) Roots fibrous. Stem branched; stem leaves many, alternate.*

26 C. GLAU'CA (Pursh, fl. amer. sept. 2. p. 463.) stem erect, branched; leaves bipinnate, glaucous; pinnulæ somewhat pinnatifid; segments stalked, cuneated, trifid; bracteas oblong, acute, shorter than the pedicels; capsules linear. ⊙. H. Native on rocky declivities of mountains in Canada, also on the Alleghany Mountains. Fumària sempervìrens, Lin. spec. 984. Mill. fig. 1. 78. Fumària glaúca, Curt. bot. mag. t. 179. C. sempervìrens, Pers. ench. 2. p. 269. Flower mixed with red and yellow, as in *Aquilègia Canadénsis*. Spur blunt one half or 3-times shorter than the corolla.

Glaucous Corydalis. Fl. Jul. Aug. Clt. 1683. Pl. 1 or 1½ ft.

27 C. STRI'CTA (Steph. ex Fisch. in litt.) stem erect, somewhat branched; leaves glaucous, pinnate; segments pinnately and acutely cut; bracteas linear, somewhat shorter than the pedicels; capsules ovate-lanceolate. ♃. H. Native of Siberia. Flowers unknown, but they are probably yellow; fructiferous pedicels a line and a half long, deflexedly-spreading.

Straight Corydalis. Fl.? Clt. 1825. Pl. ¾ foot.

28 C. CHÆROPHY'LLA (D. C. prod. 1. p. 128. Wall. tent. fl. nap. p. 52. t. 40.) stem erect, branched; leaves tripinnatifid, glaucous; segments cuneate-obovate, 3-lobed, blunt and mucronated; racemes dense, spiked; bracteas small, acute, lower ones serrated; capsules obovate-oblong, longer than the pedicels. ⊙.? ♃.? Native of Nipaul on Sheopore. Flowers pale, yellow, scentless. Sepals fringed, permanent; spur ascending. Like *C. lùtea*.

Chervil-leaved Corydalis. Fl. June, July. Pl. 1 to 3 feet.

29 C. SIBI'RICA (Pers. ench. 2. p. 270.) stem nearly erect, branched; leaves somewhat glaucous, bipinnate; segments cut into oblong-linear lobes; bracteas linear, nearly equal in length with the pedicels; capsules oval, hardly longer than the pedicels. ♃. H. Native of Siberia in the regions beyond the Baikal, at the rivers Angara and Lena, also in Dauria. Fumària impàtiens, Patrin, ined. Fumària Sibírica, Lin. fil. suppl. 314. —Gmel. sib. 4. p. 65. t. 33. Flowers yellow, usually recurved. Herb sensible to the touch, according to Patrin.

Siberian Corydalis. Fl. Ju. Jul. Clt. 1824. Pl. 1 to 3 feet.

30 C. IMPA'TIENS (Fisch. in D. C. syst. 2. p. 124.) stem somewhat diffuse, branched; leaves glaucous, bipinnate; segments cut into oblong-linear lobes; bracteas setaceous linear, nearly equal in length with the pedicels; capsules linear, twice longer than the pedicels. ⊙. H. Native of Dauria, and also near Kiachta. Fumària impàtiens, Pall. itin. ed. min. 3. p. 233? Very near to *C. glaúca*, and especially to *C. Sibírica*, but differing in the capsules being elastic, and becoming rolled up when touched. Flowers yellow.

Impatient-capsuled Corydalis. Fl. June, July. Clt. 1820. Pl. 1 to 2 feet.

31 C. AU'REA (Willd. enum. 740.) stem diffuse, branched; leaves glaucous, bipinnate; pinnulæ pinnatifid and cut; lobes oblong-linear; bracteas lanceolate-linear, acuminated, denticulated, and are, as well as the linear terete capsules, 4 times longer than the pedicels. ⊙. ♂. H. Native of Pennsylvania, Virginia,

and Canada, extending as far north as the Rocky Mountains, on shaded rocks. Fumària aúrea, Muhl. in Willd. enum. 740. Ker. bot. reg. t. 66. Curt. bot. mag. t. 66. Flowers yellow, half an inch long; spur straight, blunt.

Golden-flowered Corydalis. Fl. May, July. Clt. 1683. Pl. ½ foot.

32 C. fla'vula (Raf. in Desv. journ. bot. 1808. 1. p. 224.) stem somewhat branched; leaves glaucous bipinnate; lobes oblong-linear; bracteas ovate, pointed; capsules linear, torulose, twice the length of pedicels. ⊙. ♂. H. Native of North America, about Philadelphia. Flowers yellow. Calyx small, leafy.

Small yellow-flowered Corydalis. Fl. June, July. Pl. ½ foot.

33 C? racemòsa (Pers. ench. 2. p. 270.) stem branched, erect; leaves bipinnate; segments ovate, bluntly 3-lobed, toothed; bracteas thrice the length of the pedicels. ♃. H. Native of Japan, on rocks and old walls. Fumària racemòsa, Thunb. nov. act. petrop. 12. p. 103. t. B. Flowers yellowish; spur short, blunt. Perhaps the fruit is monospermous; if so, it is a true *Fumària*.

Racemose-flowered Corydalis. Fl. June, July. Pl. ½ foot.

34 C. capnoi'des (Pers. ench. 2. p. 270.) stem branched, diffuse; leaves bipinnate; segments obovate, cuneated, trifid; bracteas large, leafy, cut, stalked; spur awl-shaped, as long as the rest of the flower; capsules thrice the length of the pedicels. ⊙. H. Native of Mauritania and Tangiers, in fissures of rocks, and on walls. Fumària capnoìdes, Lin. spec. 984. F. álba, Mill. dict. no. 3.—Pluck. alm. t. 90. f. 2. Flowers white or whitish.

Capnos-like Corydalis. Fl. May, July. Clt. 1596. Pl. ½ foot.

35 F. lu'tea (Pers. ench. 2. p. 270.) stem branched, diffuse; leaves biternate; segments obovate, cuneated, trifid; bracteas linear-subulate, three times shorter than the pedicel; pods nearly cylindrical, narrow, shorter than their pedicels. ♃. H. Native of many places in the south of Europe, in the fissures of rocks, and on old walls; also in England, on old walls, near Castleton, Derbyshire, and near Fountain's Hall, near Fountain's Abbey, Yorkshire. Fumària lùtea, Lin. mant. 258. Eng. bot. 588. Mill. icon. 1. t. 136. f. 1. illus t. 60. Fumària capnoìdes. With 620. Capnoìdes lùtea, Gært. fruct. 2. p. 163. t. 115. f. 3. Corýdalis capnoìdes β, D. C. syst. 2. p. 126. Flowers yellow. Leaves thrice ternate, rather glaucous, green; segments wedge-shaped, with rounded lobes.

Yellow Corydalis. Fl. May, Sept. England. Pl. 1 foot.

36 C. acau'lis (Pers. ench. 2. p. 270.) scapes naked; radical leaves pinnate; segments obovate-cuneated, trifid or ternate. ⊙. H. Native of Carinthia. Fumària acaùlis, Wulf. in. Jacq. coll. 2. p. 203. icon. rar. 3. t. 554. Lam. ill. t. 597. f. 3. Flowers pale-yellow. Spur short.

Stemless Corydalis. Fl. July, Sept. Clt. 1826. Pl. ¼ foot.

37 C. Urale'nsis (Fisch. in D. C. syst. 2. p. 127.) stem erect, somewhat branched, scarcely longer than the radical leaves; leaves ternate, on long stalks; segments 3-parted; lobes somewhat cut; racemes few-flowered; bracteas cut at the top. ♃? H. Native of the Ural mountains, at Awsan, Petrowsky Sawod. Habit nearly of *C. acaúlis*, but very distinct. Flower yellow, with a straight slender spur, 6 lines in length.

Ural Corydalis. Fl? Clt. 1823. Pl. ¼ foot.

38 C. brevifòra (D. C. syst. 2. p. 127.) stem branched, diffuse; leaves biternate; petioles somewhat tendrilled; segments 3-parted into oblong-linear lobes; bracteas oblong, nearly equal in length with the pedicels. ⊙. H. Native of Kamtschatka. This plant is allied on the one side to *C. lùtea*, and on the other to *C. claviculàta*. Flowers pale-yellow; spur straight, broad, rather acute, occupying one half the length of the flower.

Short-flowered Corydalis. Fl. May, Sept. Clt. 1823. Pl. 1½ foot.

39 C. clavicula'ta (D. C. fl. fr. 4. p. 638.) stem branched, diffuse, scandent; leaves bipinnate; petioles tendrilled; segments oval, entire; bracteas oblong, shorter than the pedicels. ⊙. H. Native in bushy, shady, rather hilly situations, on a gravelly, stony, or sandy soil throughout Europe; England in several places. Fumària claviculàta, Lin. spec. 985. Smith, eng. bot. t. 103. Flowers white, variegated with blue or grey; spur short, blunt.

Claviculate Corydalis. Fl. June, July. England. Pl. 1 to 4 feet high. Cl.

40 C. pa'llida (Pers. ench. 2. p. 270.) stem branched, decumbent; leaves bipinnate; bracteas acutely-toothed. ♃? H. Native of Japan. Fumària pállida, Thunb. nov. act. petrop. 12. p. 103. t. C. F. lùtea, Thunb. fl. jap. 277. Flowers pale-yellow; spur blunt, longish.

Pale-flowered Corydalis. Fl. June, July. Pl. 1 to 2 feet.

41 C. cra'cca (Schlecht. et Cham. in Linnæa, vol. i. p. 567.) stem climbing; leaves bipinnatifid; segments obovate, entire, or cut; petioles tendrilled; bracteas lanceolate, entire, scale-formed, equal to the pedicels in length; racemes sessile; pods pendulous, many-seeded. ⊙. H. Native of Cape of Good Hope. Flowers flesh-coloured. Like *C. claviculàta*.

Cracca-like Corydalis. Pl. cl.

Cult. The species of this genus are all very beautiful; they will thrive well in a light, rich soil. They are very ornamental for the front of flower-borders, or they will succeed well in rock-work; they are increased by dividing the plants, or by seeds; the bulbous-rooted species by offsets; the annual kinds by seeds, which may be sown where they are intended to remain. The greater part of them will thrive well under trees, if the ground be not too dry.

VI. SARCOCA'PNOS (from σαρξ σαρκος, *sarx sarkos*, flesh; καπνος, *capnos*, the Greek name for Fumitory; alluding to the leaves being thick or fleshy.) D. C. syst. 2. p. 129. prod. 1. p. 129.

Lin. syst. *Diadélphia, Hexándria.* Petals 4, free, the upper one with a short spur at the base. Stamens diadelphous; capsules 2-valved, indehiscent, 2-seeded; valves 3-nerved, flattish. Perennial branched, somewhat tufted, smooth or pilose herbs, with fibrous roots, and short racemes of flowers.

1 S. enneaphy'lla (D. C. syst. 2. p. 129.) leaves from the branched petioles triternate; segments ovate-orbicular. ♃. H. almost a ♄. Native of Spain and Portugal in the fissures or chinks of humid calcareous rocks. Fumària enneaphýlla, Lin. spec. 984. Lam. ill. t. 597. f. 4. Corýdalis enneaphýlla, D. C. fl. fr. supp. p. 587.—Bocc. 2. p. 83. t. 73. Barrl. icon. t. 42. Base of stems somewhat suffruticose. Flowers whitish, tipped with red.—A singular variety of this plant was gathered about Trillo, in Spain, by Thibaud, with the branches and petioles beset with long, soft, distant hairs.

Nine-leaved Sarcocapnos. Fl. May, July. Clt. 1714. Pl. ¼ to ½ foot.

2 S. crassifo'lia (D. C. syst. 2. p. 130.) leaves undivided or ternate; segments ovate. ♃. H. Native of Mauritania near Tlemsen in the fissures of moist rocks. Fumària crassifòlia. Desf. alt. 2. p. 126. t. 173. A tufted smooth evergreen herb with pale yellow somewhat corymbose flowers.

Thick-leaved Sarcocapnos. Fl.? Pl. trailing.

Cult. These plants will thrive well in the open border, or in the moist parts of rock-work in a light rich soil; and they may be either propagated by dividing the plants at the root or by seeds.

VII. FUMA'RIA (from *fumus*, smoke; in allusion to the disagreeable smell of the plant. The French, with the same meaning, call it *Fumeterre*, whence our English Fumitory). Tourn. inst. p. 422. t. 237. Gært. fruct. 2. p. 162. t. 115. D. C. syst. 2. p. 130. prod. 1. p. 129.

LIN. SYST. *Diadélphia, Hexándria.* Petals 4, lower one linear free, (f. 42. *l.*), the 3 upper ones connate at the base, middle one of these with a spur at the base (f. 42. *k.*). Stamens diadelphous. Capsules indehiscent, 1-seeded (f. 42. *m. n.*). Style deciduous. Smooth, slender herbs, with alternate-decompound leaves. Flowers small, racemose, white, or purplish.

SECT. I. PLATYCA'PNOS (from πλατυς, *platys*, broad, καπνος, *capnos*, fumitory; broad podded fumitory.) D. C. syst. 2. p. 131. Pods compressed.

1 F. SPICA'TA (Lin. spec. 985.) pods compressed, oval, smooth; racemes spicate; pedicels much shorter than the bracteas; stems erect. ⊙. H. Native of the south of Europe in cultivated fields. —Morr. hist. 2. p. 261. sect. 3. t. 12. f. 11. Leaves glaucous, stalked, multifidly-decompound into crowded linear awl-shaped lobes. Flowers white at the base and purple at the apex.

Var. β, aurantìaco-cròcea (D. C. syst. 2. p. 131.) ⊙. H. Native of Spain. Distinguished from the species by its smaller habit and orange-copper-coloured flowers.

Spiked-flowered Fumitory. Fl. May, Aug. Clt. 1714. Pl. 1 or 1½ foot.

2 F. TURBINA'TA (Smith, in D. C. syst. 2. p. 132.) pods compressed, turbinate, truncate, striated; stems somewhat climbing; petioles cirrhose at the top. ⊙. ? H. Native of the Levant. F. claviculàta, Lin. herb. Flowers racemose, small; perhaps purplish?

Turbinated-podded Fumitory. Pl. 2 feet.

3 F. CORYMBO'SA (Desf. act. soc. hist. nat. par. 1. p. 26. t. 6. fl. atl. 2. p. 124.) pods ovate, compressed, pointed, dotted; racemes somewhat corymbose; frutiferous pedicels, much longer than the bracteas; stems diffuse. ♃. H. Native of Algiers near Tlemsan in the fissures of rocks. F. Africàna, Lam. dict. 2. p. 569. Leaves on long petioles, pinnate; segments 5, cut or parted; lobes oblong. Flowers pale at the base and purple at the apex.

Corymbose-flowered Fumitory. Fl. Ju, Jul. Pl. procumbent.

SECT. II. SPHÆROCAPNOS (σφαιρα, *sphaira*, a sphere, καπνος, *capnos*, fumitory; round podded fumitory.) D. C. syst. 2. p. 131. Pods globose (f. 42. *m.*)

4 F. CAPREOLA'TA (Lin. spec. 985.) pods globose; fructiferous pedicels recurved, longer than the bracteas; racemes oblong; stems somewhat climbing; leaves bipinnate; petioles somewhat tendrilled. ⊙. H. Native of western and southern Europe in the fissures of rocks and among stones. D. C. icon. rar. 1. t. 34. Savi. mat. med. 14. t. 1. f. 1. Herb procumbent or scandent. Flowers whitish, tipped with dark-purple; spur compressed, blunt, short, mitre-formed.

Var. β? Burchéllii (D. C. syst. 2. p. 133.) peduncles spreading; fructiferous pedicels double the length of the bracteas. Fumària, no. 1298, Burch, cat. geogr. pl. afri. austr. Perhaps a proper species. Native of Cape of Good Hope among bushes by the sides of rivulets, particularly about the place called Roggeweld's-Karo.

Tendrilled Fumitory. Fl. May, Sept. Clt.? Pl. cl.

5 F. LICHTENSTEI'NII (Schlecht. Linnæa, 1. p. 569.) stem weak, climbing; leaves bipinnate, tendrilled; segments lanceolate, cut; flowers small; deflowered pedicels, capillary elongated, 6-times longer than the bracteas. ⊙. H. Native of Cape of Good Hope. Flowers flesh-coloured. Racemes short, crowded, at length elongated. Fumària micrántha, Licht. mss. Pods not known.

Lichtenstein's Fumitory. Pl. cl.

6 F. ME'DIA (Lois. not. p. 101.) pods globose, rather depressed; fructiferous pedicels erect, double the length of the bracteas; racemes loose; stems erect; leaves supra-decompound; petioles somewhat tendrilled. ⊙. H. Native throughout Europe in cultivated fields. In England sparingly at Edmonton, and a few other places near London; more plentifully about Barnstaple, and elsewhere in Devonshire; about Battersea in fields and garden grounds; in Sussex; very abundant about Liverpool; in Canada near Quebec and in Newfoundland. F. capreolàta, Lightf. fl. scot. 380. Smith, engl. bot. t. 943. F. agrària, Lag. cat. hort. madr. 1815. p. 21. This plant is most like *F. officinàlis*, but the leaves are less glaucous and their tendrils twisting round other plants. Flowers pale, with the tip of each petal deep red.

Var. β, prehensíbilis (Kit. ined. hort. pesth. 1812. p. 10.) leaves thickish, almost succulent, shorter than those of the species. Perhaps a proper species. ⊙. H. Native of Hungary.

Intermediate Fumitory. Fl. Ju. Sep. England. Pl. 3 or 4 ft.

7 F. OFFICINA'LIS (Lin. spec. 984.) pods globose, retuse; fructiferous pedicels erect, double the length of the bracteas; racemes rather loose; stem diffuse; leaves supra-decompound; lobes linear. ⊙. H. Native in corn-fields and cultivated land throughout the world; plentiful in Britain. Smith, eng. bot. t. 589. Mill. icon. 1. t. 136. f. 2. Blackw. herb. t. 237. Fl. dan. t. 940. Curt. fl. lond. 2. t. 52. Woodv. med. bot. 241. t. 88. Sav. mat. med. p. 14. t. 1. f. 2. Mart. fl. rus. t. 68. F. pulchélla, Sal. prod. 377. Flowers pale red, deep red at the summit. The leaves are succulent, saline, and bitter. The expressed juice, in doses of 2 ounces, taken twice a-day in whey, is useful in hypochondriacal, scorbutic, and cachetic habits. It corrects acidity and strengthens the stomach; Hoffman prefers it to all other medicines as a sweetener of the blood. There is no doubt of its utility in obstructions of the viscera, and the diseases arising from them. The celebrated Boerhaave frequently prescribed it in black jaundice and bilious colics. An infusion of the leaves was used as a cosmetic to remove freckles and clear the skin, and Dr. Cullen has experienced its good effects in many cutaneous disorders. The same physician thought it useful as a tonic wherever bitter medicines are advisable.

Var. β, grandiflòra (D. C. syst. 2. p. 135.) flowers larger and pale purple. ⊙. H. Native of Cape of Good Hope. F. officinàlis, Burm. prod. fl. cap. p. 20.

Officinal Fumitory. Fl. May, Aug. Britain. Pl. ½ foot.

8 F. PARVIFLO'RA (Smith, engl. bot. t. 590.) pods globose, somewhat mucronated; fructiferous, pedicels erect, longer than the bracteas; racemes loose; stems diffuse; leaves supra-decompound; lobes linear, channelled. ⊙. H. Native of the south of Europe, as well as in England in cultivated fields about Woldham near Rochester and near Epsom. It is also a common weed throughout the East Indies. Smith, engl. bot. t. 590. F. spicàta β, Lin. syst. veg. ed. 13. p. 470. F. tenuifòlia, Sym. syn. p. 200. F. Sícula, Pisan. cat. hort. panorm. 1816. Very like *F. officinàlis* but smaller in all its parts. Flowers pale red. In the East Indies this is a very common weed, it is called in the Bengalee *Bun-sulpha*, in Hindostanee *Sulpha-saug*. It possesses a bitterish taste. Dr. Whitlaw Ainslie speaks of it in his Materia Medica of Hindostan, p. 16. under the name of *F. officinàlis*, being in use among the Mahomedans as a diuretic, and is employed in maniacal cases, and as a diobstruent. He says it is called *Pitpatra* in Hindostanee, *Shoutra* in Persia, *Dukhanee* and *Bucklututmelic* in Arabic.

Small-flowered Fumitory. Fl. Aug. Sept. Engl. Pl. ½ ft.

9 F. LEUCA'NTHA (Viv. fl. cors. app. in Schlecht. Linnæa, vol. 1. p. 502.) pods globose, wrinkled, 1-seeded; flowers in racemose spikes; leaves supra-decompound, finely dissected into linear furrowed lobes. ⊙. H. Native of Corsica and other parts of the south of Europe. F. parviflòra, Lam. dict. 11. p. 567. but not of Smith. Fumaria foliis tenuissimis, flore albo. Tourn. inst. 422. Flowers white.

White-flowered Fumitory. Fl. Aug. Sept. Clt.? Pl. ½ ft.

10 F. VAILLA'NTII (Lois. not. p. 102.) pods globose, hardly mu-

cronulate; fructiferous pedicels erect, longer than the bracteas; racemes short; stems rather erect; leaves supra-decompound; lobes linear, flat. ⊙. H. Native of France in sandy fields about Paris, Montpelier, &c. Vaill. bot. par. 56. t. 10. f. 6. Very like *F. parviflòra*, but the branches are erect, not spreading nor procumbent, and the whole plant is more glaucous, and the flowers of a deeper purple colour.

Vaillant's Fumitory. Fl. May, Aug. Clt. 1816. Pl. ½ ft.

11 F. densiflo'ra (D. C. cat. hort. monsp. 113. syst. 2. p. 137.) pods globose; fructiferous pedicels erect, longer than the bracteas; racemes dense; calyx toothed; stems erectish; leaves supra-decompound, lobes linear, thickish. ⊙. H. Native about Montpelier in stony fields and on walls. Flowers of an intense purple colour but occasionally white.

Dense-flowered Fumitory. Fl. May, Jul. Clt. 1820. Pl. ½ ft.

† *A species not sufficiently known.*

12 F. micra'ntha (Lag. cat. hort. madr. p. 21.) ⊙. H. Native of Spain in fields near Tudela and about Murcia. Leaves pinnately-decompound, linear, very narrow; calyx cordate-rounded, broader than the tube of the corolla (Lag.). Flowers pale purple.

Small-flowered Fumitory. Fl. June, July. Clt. 1824.

Cult. The species are mostly weedy-looking plants, and are scarcely worth cultivating. The annual kinds should be sown in the open border, and treated as other hardy annuals, except *F. mèdia*, *capreolàta*, and *turbinàta*, which are really worth cultivating; these should be sown under a hedge, where they will climb up and make a very beautiful appearance. *F. corymbòsa* will do well if planted in rock-work.

VIII. DISCOCA'PNOS (*δισκος*, *discos*, a disk; *καπνος*, *kapnos*, the Greek name for Fumitory; wing in the centre of orbicular flat capsule). Schlecht. in Linnæa 1. p. 569.

Lin. syst. *Diadélphia*, *Hexándria*. Flowers of Fumaria. Capsule orbicular, flat, membranous, with a nerve running through the middle on both sides from the base to the style, mucronate, 1-celled, girded by a wing in the centre, perepheric, indehiscent, 1-seeded. Seed lenticular, compressed, finely granulated, shining. This genus differs from *Fumaria*, Sect I. *Platycápnos*, in the fruit being membranous, and girded by a wing. A glaucous herb, with bipinnate tendrilled leaves; segments wedge-shaped, cut. Racemes opposite the leaves, stalked, 5-8-flowered. Flowers red, with an obtuse spur.

1 D. Mu'ndtii (Schlect. l. c.) ⊙. H. Native of Cape of Good Hope. Fumària Múndtii, Spreng. syst. app. p. 264.

Mundt's Discocapnos. Fl. Aug. Pl. cl.

Cult. This plant only requires to be sown in the open ground in April, and treated as other hardy annuals.

Order XIV. CRUCI'FERÆ (from *crux*, *crucis*, a cross, and *fero*, to bear; in allusion to the four petals being disposed cross-wise). (f. 45. *o.* f. 48. *e.* f. 49. *a.* f. 50. *b.*) Juss. gen. 237. D. C. syst. 2. p. 139. prod. 1. p. 131. Adans. fam. 2. p. 409.

Calyx of 4 sepals (f. 45. *n.* f. 50. *c.*). Petals 4, alternate with the sepals, disposed cross-wise, constantly distinct and free (f. 45. *o.* f. 51. *e.*). Stamens 6, (f. 45. *h. g.* f. 49. *e. c.*) the two in front of the lateral sepals are solitary, and shorter than the rest (f. 45. *g.* f. 49. *c.* f. 51. *c.*) and are inserted lower down, the 4 longest approximate in pairs (f. 45. *g.* f. 49. *e.* f. 50. *a.*) in front of the other sepals. Anthers 2-celled, bursting inwards (f. 49. *e.*). Receptacle small, bearing a few glands between the stamens and the petals. Carpels 2, c'osely connected together by one pistil (f. 47. *f. m.* &c.). Ovary 1 (f. 49. *d.*) short, or elongated, those with the short ovary are usually crowned by a short style (f. 51. *b.*) Stigmas 2, approximate (f. 46. *l. g. &c.*) or spreading (f. 46. *n. &c.*); siliques (f. 47. *f. &c.*) (long pods) or silicles (f. 46. *h. &c.*) (short pods) usually 2-celled, 2-valved (f. 46. *h. &c.*), very rarely 1-celled (f. 47. *d. &c.*). The cells are usually separated by a thin dissepiment situated vertically, and girded by a placentarious nerve (f. 46. *r.*). Seeds in each cell, 1 (f. 47. *b.*) 2 or numerous, (f. 46. *l.*) fixed to both sides of the placenta (f. 46. *g.*) usually pendulous (f. 46. *l.* f. 47. *b. &c.*) rarely solitary from abortion (f. 47. *d. h.*) always hanging by an umbilical thread, which is usually free (f. 47. *b. &c.*). Albumen wanting. Embryo oily, curved. Radicle terete, tending to the umbilicus. Cotyledons 2, opposite (f. 45. *j.*), inclining various ways above the radicle, which are explained in the characters of the tribes.

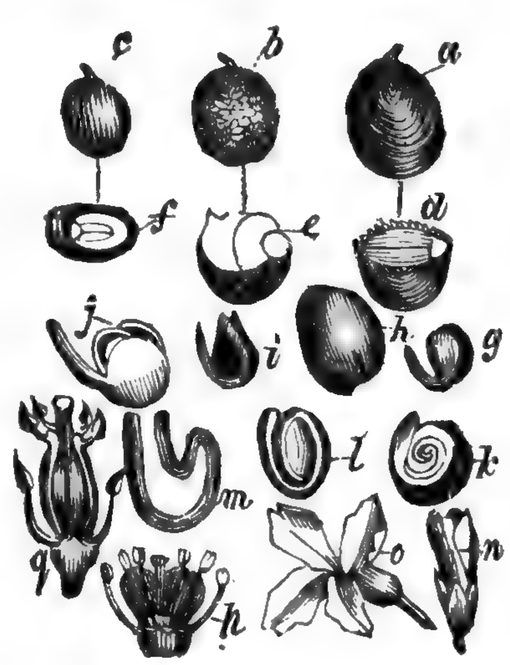
This order consists of annual, perennial or biennial herbs, rarely suffrutescent, stems, however, never exceeding the height of three feet, the perennials have thick roots, the biennials and annuals have slender roots, usually perpendicular and undivided. The young roots are tipped with a little sheath, called the Coleorhiza, which is produced by the extended ruptured coat of the epidermis, when the rootlets first appear. The stems are round and somewhat angular, branched, and often, even in the annual species, indurated at the base. The branches rise from the axillæ of the leaves, but the uppermost ones are abortive in the annual species. Racemes usually opposite to the leaves, sometimes the terminal branch is abortive, when the raceme appears to be terminal, but this is merely owing to that circumstance. The leaves are simple, usually radical or alternate, rarely opposite, as in *Eunòmia* and *Lunària*, feather-nerved, entire toothed, pinnatifid, lyrate or variously dissected, the lower ones usually stalked, the uppermost ones sessile. Flowers white, yellow, or purple, but in some species of *Helióphila* they are blue; they are mostly sweet-scented, and easily changed to double. Flowering racemes at first sub-corymbose (f. 49.), at length much elongated (f. 51.). This order differs from *Papaveràceæ* and *Fumariàceæ* in the calyx being of 4 sepals, not 2, as well as in the seeds being destitute of albumen. It differs from *Resedàceæ* in the seeds being furnished with an umbilical cord, from *Datisceæ* in the seeds being destitute of albumen, and from *Capparídeæ* in the receptacle not being hemispherical nor elongated, as well as in pods being furnished with a dissepiment, and in the very different habit of the plants, and the disposition of the stamina. The plants contained in this order are chiefly confined to the temperate zones; their station is variable, many inhabit open sandy places, some form the vegetation about the limits of perpetual snows of lofty mountains, and many follow the footsteps of man through all parts of the world. The seeds of all the species retain their vegetative power a considerable time, therefore they may be introduced in a living state from any part of the world.

The plants of this class have always been celebrated for their anti-scorbutic qualities. These seem to reside in an acrid oily volatile principle, and varying in the degree of abundance in which it is found in different species. It is particularly abundant in the seeds of *mustard* and *garden-rocket*, in the roots of

horse-radish, and in the leaves of *Lepídium latifòlium* which administered act powerfully upon the gastric organs, or applied externally inflame the skin and operate nearly as severely as blisters. A slighter degree of acrimony is found in the *scurvy-grass*, and the roots of the *garden-radish*, &c. and these therefore operate more gently and perhaps more safely when eaten, and scarcely at all when applied to the skin. Whatever may be the degree of acrimony in these plants, they all appear when eaten to produce some specific action upon the digestive organs, and thence upon scorbutic humours, for which reason the *horse-radish*, *water-cress*, *garden-radishes*, and even *cabbages* are eminently anti-scorbutic. They are also admitted by physicians as diuretic, sialogogue, and diaphoretic. It is only when the acrid principle is diffused over a considerable quantity of fleshy and watery substance that cruciferous plants become eatable, as in the leaves and stems of *cabbages*, *cauliflowers*, and *sea-kale*, and in the roots of *radishes* and *turnips*. It is to be remarked that cruciferous plants are always eatable when their texture is succulent and watery. Even in these plants the proportion of acrid principle is much diminished by exclusion from light. Plants of this order are also remarkable for containing a greater quantity of azote than most vegetables, for which reason ammonia is generally evolved in their fermentation or putrefaction, to which circumstance it is possible that the two remarkable phænomena are to be attributed, viz. that cruciferous plants contain a greater portion of nutritive matter than most herbaceous plants, and that they require either a very rich soil, manured with animal substance, or at least a situation near the habitation of men. The embryos of all these plants are filled with oil, and the seeds of *Camelìna satìva*, *Brássica campéstris*, *var. oleífera*, some species of *Rocket*, &c. are cultivated in many parts of Europe for the sake of their expressed oil, which is used either for culinary purposes or for lamps. (Decandolle, syst. 2. p. 143 and 144.)

Synopsis of the Genera.

FIG. 45.



SUBORDER I. PLEURORHI'ZEÆ. D. C. syst. 2. p. 146. prod. 1. p. 132.

Cotyledons flat, accumbent (f. 46. *c.* f. 45. *g.*). *Radicle lateral* (f. 45. *h. g. d.*). *Seeds compressed* (f. 46. *g. h.*).

TRIBE I.

ARABI'DEÆ *or* PLEURORHI'ZEÆ. *Siliquòsæ. D. C. syst. 2. p. 146. prod. 1. p. 132.*

Silique dehiscent, with a linear dissepiment, which is, more or less, broader than the seeds (f. 46. *b.*). *Seeds oval, compressed, usually margined. Cotyledons flat, accumbent* (f. 46. *c.* f. 45. *g. d. h.*), *parallel with the dissepiment.*

1 MATHI'OLA. Silique somewhat cylindrical. Stigmas connivent, thickened or horned on the back (f. 48. *b.*). Calyx besaccate at the base.

2 CHEIRA'NTHUS. Silique terete or compressed. Stigma 2-lobed or capitate. Calyx besaccate at the base.

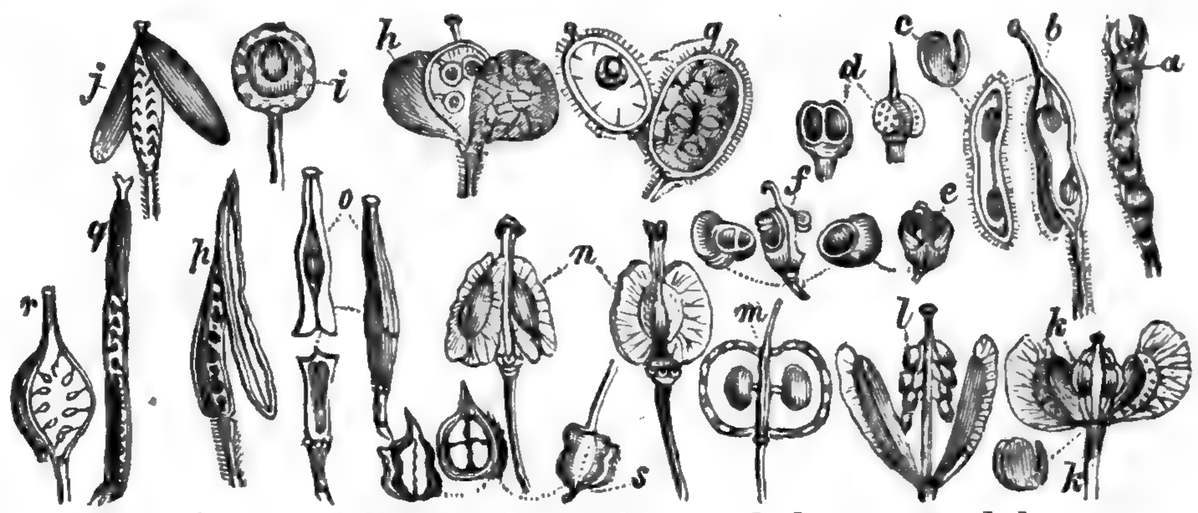
3 NASTU'RTIUM. Silique rather terete, short, or declinate. Stigma somewhat 2-lobed. Calyx equal at the base, spreading.

4 LEPTOCARPÆ'A. Silique rather terete, very slender. Stigma sessile, 2-lobed. Calyx spreading, equal.

5 NOTO'CERAS. Silique tetragonally 2-edged; each valve ending in a mucrone or horn at the top (f. 46. *a.*).

6 BARBARE'A. Silique tetragonally 2-edged; valves without a mucrone or horn at the top. Calyx equal at the base.

FIG. 46.



7 STEVE'NIA. Silique oblong, few-seeded, narrowed between the seeds (f. 46. *b.*); valves flat, somewhat torulose. Calyx bisaccate at the base.

8 BRA'YA. Silique oblong, somewhat cylindrical, with flattish valves and a sessile stigma. Seeds few, ovate. Calyx equal at the base. Cotyledons perhaps incumbent.

9 TURRI'TIS. Silique linear; valves flat. Seeds in 2 rows in each cell.

10 A'RABIS. Silique linear; valves flat, with a nerve in the middle of each. Seeds in one row in each cell.

11 OUDNE'YA. Silique sessile, linear, beaked; valves flat, with a nerve in the middle. Seeds in 1 row. Stigmas connate, distinct at the top. Calyx closed, bisaccate at the base.

12 MACROPO'DIUM. Silique linear, stalked; valves flat, with a nerve in the middle.

13 CARDA'MINE. Silique linear; valves flat, nerveless, usually separating with elasticity. Umbilical cord slender.

14 PTERONEU'RUM. Silique lanceolate; valves flat, nerveless, usually separating with elasticity. Placentas with nerved wings. Umbilical cord dilated.

15 DENTA'RIA. Silique lanceolate; valves flat, nerveless, usually separating with elasticity. Placentas not winged. Umbilical cord dilated.

16 PA'RRYA. Silique broad-linear; valves flat, more or less distinctly veined. Seeds with broad margins, disposed in something like 2 rows. Umbilical cord adnate to the dissepiment above. Lobes of stigma approximate. Calyx bigibbous at the base.

TRIBE II.

ALYSSI'NEÆ *or* PLEURORHI'ZEÆ LATISE'PTÆ. *D. C. syst. 2. p. 147. prod. 1. p. 156.*

Silicle opening longitudinally; dissepiment broad-oval, me

branous; valves flat or concave. Seeds compressed, usually margined (f. 46. *g. h.*). *Cotyledons flat, accumbent, parallel with the dissepiment* (f. 46. *c.* f. 45. *g. d.*).

17 Luna'ria. Silicle stalked, elliptical or lanceolate; valves flat. Umbilical cord long, adhering to the dissepiment. Calyx somewhat bisaccate at the base. Petals quite entire. Stamens toothless.

18 Rico'tia. Silicle sessile, oblong, adult ones 1-celled, in consequence of the dissepiment having vanished; valves flat. Calyx valvular, bigibbous at the base. Petals emarginate. Stamens toothless.

19 Farse'tia. Silicle sessile, oval (f. 46. *g.*), or oblong; valves nearly flat (f. 46. *g.*); dissepiment 1-nerved, veiny; seeds winged (f. 46. *g.*) Calyx closed, hardly bisaccate at the base. Petals entire. Funicle free. Filaments toothless. Anthers linear.

20 Koni'ga. Silicle sessile, somewhat ovate, with flattish valves and 1 or many-seeded cells; funicle adnate to the base of the dissepiment. Seeds usually marginate. Calyx spreading. Petals quite entire. Filaments toothless.

21 Bertero'a. Silicle sessile, elliptical or obovate; valves flat or concave. Calyx equal at the base. Petals 2-parted. Lesser stamens toothed.

22 Aubrie'tia. Silicle oblong; valves convex. Seeds not margined. Calyx bisaccate at the base. Petals entire. Lesser stamens toothed.

23 Vesica'ria. Silicle globose, inflated; valves hemispherical. Seeds numerous (beyond 8). Petals entire.

24 Schiwere'ckia. Silicle ovate; valves convex, somewhat depressed lengthwise in the middle. Seeds numerous. Calyx equal at the base. Petals entire. Larger stamens toothed.

25 Adyse'ton. Silicle roundish, pointed with the style, with compressed valves. Seeds 2 in each cell, or sometimes solitary from abortion. Calyx equal at the base. Petals emarginate. Stamens all or some of them toothed.

26 Aly'ssum. Silicle roundish, with a convex disk and a retuse apex; funicle adhering to the base of the dissepiment. Seeds 2 in each cell, with membranous wings. Calyx equal at the base. Petals emarginate. Stamens all or some of them toothed.

27 Onodo'ntea. Silicle orbicular (f. 46. *h.*) or elliptical; valves flat or convex in the centre, somewhat inflated (f. 46. *h.*). Seeds 2-4 in each cell (f. 46. *h.*). Calyx equal at the base. Stamens all toothless.

28 Disco'vium. Silicle lenticular, with an entire dissepiment and keeled valves and many-seeded cells. Style permanent; stigma blunt. Calyx closed. Cotyledons accumbent?

29 Menio'cus. Silicle sessile, elliptical; valves flat. Seeds 6-8 in each cell. Calyx equal. Petals entire. Larger stamens toothed.

30 Clype'ola. Silicle orbicular, 1-celled, 1-seeded; valves flat. Calyx equal. Petals entire. Stamens toothed.

31 Pelta'ria. Silicle orbicular, 1-celled, in consequence of the dissepiment having vanished, 1 (f. 46. *i.*) or 4-seeded; valves flat. Calyx equal. Petals entire. Stamens toothless.

32 Petroca'llis. Silicle sessile, oval; valves flattish. Seeds 2 in each cell. Umbilical cord adhering to the dissepiment.

33 Dra'ba. Silicle sessile, oval or oblong (f. 46. *j.*); valves flat or convex (f. 46. *j.*). Seeds numerous, immarginate (f. 46. *j.*). Calyx equal. Petals entire. Stamens all toothless.

34 Ero'phila. Silicle oval or oblong; valves flat. Seeds numerous, immarginate. Calyx equal. Petals 2-parted. Stamens toothless.

35 Cochlea'ria. Silicle sessile, ovate-globose or oblong; valves ventricose. Seeds numerous, immarginate. Calyx equal, spreading. Petals entire. Stamens toothless.

Tribe III.

Thlaspi'deæ *or* Pleurorhi'zeæ Angustise'ptæ *(D. C. syst. 2. p. 248. prod. 1. p. 175.) Silicle dehiscent, with a very narrow dissepiment* (f. 46. *k. l.*) *and keeled navicular valves* (f. 46. *k. l. m. n.*). *Seeds oval* (f. 46. *l.*) *sometimes margined* (f. 46. *n.*). *Cotyledons flat, accumbent, contrary to the dissepiment* (f. 46. *k.* f. 45. *a. d.*).

§ 1. *Cells of silicle 2 or many-seeded.*

36 Thla'spi. Silicle emarginate at the apex (f. 46. *k. l.*); valves navicular, winged on the back (f. 46. *k. l.*); cells 2 (f. 46. *k.*) or many-seeded (f. 46. *l.*).

37 Huchi'nsia. Silicle elliptical; valves navicular, wingless; cells 2, rarely many-seeded.

38 Teesda'lia. Silicle oval, emarginate at the apex; valves navicular; cells 2-seeded. Stamens each furnished with a scale on the outside at the base.

39 Platyspe'rmum. Silicle oblong, crowned by the short thick style; valves navicular; cells 4-5 seeded. Seeds with a broad margin.

§ II. *Cells of silicle* 1-*seeded.*

40 Ibe'ris. Two outer petals largest. Silicle much compressed, truncately emarginate.

41 Thysanoca'rpus. Petals shorter than the sepals, equal. Silicle much compressed, with a broad wing round the margin, emarginate at the apex.

42 Biscute'lla. Silicle flat, biscutate (f. 46. *m.*); cells adnate laterally to the axis; style long, permanent (f. 46. *m.*). Embryo inverted.

43 Megacarpæ'a. Silicle flat, biscutate; cells adnate laterally to the axis. Style wanting.

44 Cremo'lobus. Silicle flat, biscutate; cells marginate, hanging from the top of the axis. Style somewhat pyramidal.

45 Menonvi'llea. Silicle somewhat stipitate, biscutate; cells (f. 46. *n.*) with the margin expanded into a wing, ending in the parallel disk (f. 46. *n.*).

Tribe IV.

Eclidie'æ *or* Pleurorhi'zeæ Nucumenta'ceæ *(D. C. syst. 1. p. 149. prod. 1. p. 184.). Silicle indehiscent* (f. 46. *d.*); *valves concave, indistinct* (f. 46. *d.*) *or not separating; dissepiment elliptical, sometimes with scarcely any trace of a dissepiment. Seeds oval, very few. Cotyledons flat, accumbent, parallel with the dissepiment* (f. 45. *d. g. h.*).

46 Eucli'dium. Silicle drupaceous, ovate, with the sutures manifest; style awl-shaped (f. 46. *d.*). Cells 1-seeded (f. 46. *d.*).

47 Ochthòdium. Silicle coriaceous, somewhat globose; stigma sessile; dissepiment thick; cells 1-seeded.

48 Pugiònum. Silicle coriaceous, transversely oval, echinated all over, and terminated by a long point, 1-celled and 1-seeded from abortion.

Tribe V.

Anastati'ceæ *or* Pleurorhi'zeæ Septula'tæ *(D. C. syst. 2. p. 149. prod. 1. p. 185.). Silicle opening longitudinally* (f. 46. *f.*); *valves concave, bearing on the inside transverse horizontal small dissepiments, separating the seeds* (f. 46. *f.*). *Seeds immarginate. Cotyledons flat, accumbent, parallel with the dissepiment* (f. 45. *d. g. h.*).

49 Anasta'tica. Silicle ventricose (f. 46. *e.*); valves appendiculated on the outside at the top (f. 46. *f. e.*).

50 More'ttia. Silicle ovate; valves not appendiculated.

Tribe VI.

Cakili'neæ *or* Pleurorhi'zeæ Lomenta'ceæ *(D. C. syst. 2. p. 149. prod. 1. p. 185.). Silique or silicle, separating transversely into 1-2-celled, 1-2-seeded joints* (f. 46. *o.*). *Seeds immarginate. Cotyledons flat, accumbent, parallel with the dissepiment* (f. 45. *d. g. h.* f. 46. *c.*).

51 Caki'le. Silicle 2-jointed, compressed (f. 46. *o.*), upper joint ensiform. Seeds solitary in the cells, upper one erect, lower one pendulous (f. 46. *o.*).

52 Cordyloca'rpus. Silique rather terete, torose; joints numerous, terminal one thick globose, echinated. Seeds all pendulous.

53 Chori'spora. Silique rather terete, with numerous equal joints. Seeds all pendulous.

Sub-order II. NOTORHI'ZEÆ (D. C. syst. 2. p. 150. prod. 1. p. 186.). Cotyledons flat, incumbent (f. 45. *i.*). Radicle dorsal (f. 45. *i. e.*). Seeds ovate, immarginate.

Tribe VII.

Sisy'mbreæ *or* Notorhi'zeæ Siliquòsæ. *Siliques 2-celled, opening longitudinally* (f. 46. *p.*). *Valves concave* (f. 46. *p.*) *or keeled. Seeds ovate or oblong, immarginate. Cotyledons flat, incumbent, contrary to the dissepiment* (f. 45. *i.*).

54 Malco'mia. Silique rather terete. Stigma simple, ending in a long taper-point.

55 He'speris. Silique rather terete, or somewhat tetragonal (f. 46. *p.*). Stigmas 2, erect, connivent. Calyx bisaccate at the base.

56 Andreo'skia. Silique rather terete, sessile; valves somewhat convex. Style short, slender. Calyx equal at the base.

57 Sisy'mbrium. Silique rather terete, sessile upon the torus. Stigmas 2, rather distinct, or connate into a head. Calyx equal at the base.

58 Allia'ria. Silique rather terete, somewhat tetragonal from prominent nerves. Calyx loose.

59 Ery'simum. Silique tetragonal (f. 46. *q.*). Calyx closed.

60 Lepta'leum. Silique rather terete, sessile. Stigmas 2, connivent. Calyx equal at the base. Stamens 4.

61 Stanle'ya. Silique rather terete, stalked above the torus.

Tribe VIII.

Cameli'neæ *or* Notorhi'zeæ Latise'ptæ *(D. C. syst. 2. p. 150. prod. 1. p. 201.). Silicle with concave valves and an elliptical dissepiment in its greatest diameter* (f. 46. *r.*). *Seeds ovate. Cotyledons flat, incumbent, contrary to the dissepiment* (f. 45. *i.*).

62 Stenope'talum. Silicle elliptical; valves flat; cells many-seeded. Style wanting.

63 Cameli'na. Silicle obovate or almost globose, with ventricose valves, and many-seeded cells (f. 46. *r.*). Style filiform (f. 46. *r.*).

64 Eude'ma. Silicle ovate, with concave valves and many-seeded cells, with the dissepiment holed at the top.

65 Ne'slia. Silicle somewhat globose, indehiscent, 1-celled, 1-seeded, from the dissepiment having vanished; valves concave.

66 Eutre'ma. Silicle linear, lanceolate, 2-edged, crowned by a capitate stigma, with keeled valves and many-seeded cells; dissepiment incomplete.

67 O'reas. Silicle lanceolate, compressed, flat, 1-celled from the dissepiment having vanished, many-seeded; valves flattish, marked with a middle nerve. Seeds hanging by elongated funicles.

FIG. 47.

Tribe IX.

Lepedi'neæ *or* Notorhi'zeæ Angustise'ptæ *(D. C. syst. 2. p. 151. prod. 1. p. 202.). Silicle with a very narrow dissepiment; valves keeled* (f. 47. *a. b.*) *or very concave. Seed solitary in the cells* (f. 47. *a. b.*) *or very few, ovate, immarginate. Cotyledons flat, incumbent, parallel with the dissepiment* (f. 45. *i.*).

68 Capse'lla. Silicle triangular, cuneated at the base, with wingless navicular valves. Seeds numerous in the cells.

69 Senebie'ra. Silicle twin; valves ventricose, or somewhat keeled, almost indehiscent, 1-seeded.

70 Lepi'dium. Silicle ovate (f. 46. *a.*) or somewhat cordate; valves keeled (f. 47. *a.*), rarely ventricose, dehiscent; cells 1-seeded (f. 47. *a.*).

71 Bivonæ'a. Silicle oval, emarginate, with keeled valves, and 4-6-seeded cells.

72 Euno'mia. Silicle oval; valves keeled. Seeds 2 in each cell, with the umbilical cords somewhat connected.

73 Æthione'ma. Silicle oval, usually emarginate, with navicular valves (f. 47. *b.*) and 1 (f. 47. *b.*) or 2-seeded cells. Larger stamens either united or toothed.

74 Redo'wskia. Silicle inflated, tapering into the pedicel at the base, terminated by the style, 1-celled from the dissepiment having vanished; valves with a nerve running along their middle. Seeds 8-10. Cotyledons unknown.

Tribe X.

Isati'deæ *or* Notorhi'zeæ Nucumenta'ceæ *(D. C. syst. 2. p. 151. prod. 1. p. 209.). Silicle 1-celled from the dissepiment having vanished, 1-seeded, with indistinct or indehiscent keeled valves* (f. 47. *d.*). *Seeds ovate-oblong. Cotyledons flat, incumbent, apparently in the same direction as the dissepiment should be.*

75 Aphra'gmus. Silicle lanceolate, acute, with flat nerved valves, without any dissepiment. Seeds in 2 series, pendulous. Cotyledons thick.

76 Tausche'ria. Silicle oval, almost boat-shaped, 1-celled, 1-seeded, with navicular indehiscent valves.

77 Isa'tis. Silicle elliptical, flat, 1-celled, 1-seeded; valves keeled, navicular, hardly dehiscent (f. 47. *d.*).

78 My'agrum. Silicle compressed, almost cuneated, with two empty hollows at the top, and 1-celled 1-seeded at the base.

79 Sobole'wskia. Silicle oblong, compressed, 1-celled, 1-seeded, valveless, membranous.

Tribe XI.

Anchonie'æ *or* Notorhi'zeæ Lomenta'ceæ *(D. C. syst. 2. p. 152. prod. 1. p. 212.). Silicle or silique separating transversely into 1-seeded joints* (f. 47. *e.*). *Cotyledons flat, incumbent* (f. 45. *i.*).

80 Goldba'chia. Stamens free. Silique 2-jointed, with hardly any style.

81 Ancho'nium. Larger stamens, connate. Silique 2-jointed, crowned by the beak-like compressed style (f. 47. *e.*).

82 Steri'gma. Larger stamens connate to the middle (f. 50. *a.*). Silique rather terete, at length separating into many joints.

Sub-order III. ORTHOPLO'CEÆ. (D. C. syst. 2. p. 152. prod. 1. p. 213.)

Cotyledons incumbent, folded together or plaited lengthwise through their middle, and inwrapping the radicle in the recess (f. 45. *j. f.*). Style usually enlarged, with a cell and seed at its base. Seeds generally globose, always immarginate.

Tribe XII.

Brassi'ceæ *or* Orthoplòceæ Siliquo'sæ *(D. C. syst. 2. p. 152. prod. 1. p. 213.). Silique with the valves opening lengthwise* (f. 47. *f. o. g.*) *and a linear dissepiment. Cotyledons folded together* (f. 45. *j. f.*).

83 Bra'ssica. Silique rather terete, crowned by a small short blunt style (f. 47. *f.*). Seeds disposed in one row (f. 47. *f.*). Calyx closed.

84 Sina'pis. Silique almost terete with nerved valves; style small, short, acute. Seeds disposed in one series. Calyx spreading.

85 Morica'ndia. Silique tetragonal, somewhat 2-edged. Seeds disposed in two rows. Calyx bisaccate at the base.

86 Diplota'xis. Silique compressed, linear (f. 47. *g.*). Seeds disposed in 2 rows (f. 47. *g.*). Calyx equal at the base.

87 Eru'ca. Silique almost terete, crowned by a large conical or ensiform style. Seeds in one row. Calyx equal at the base.

Tribe XIII.

Ve'lleæ *or* Orthoplòceæ Latise'ptæ *(D. C. syst. 2. p. 152. prod. 1. p. 223.). Silicle with concave valves, opening lengthwise and an elliptical dissepiment* (f. 47. *c.*). *Seeds globose. Cotyledons folded together* (f. 45. *j. f.*).

88 Ve'lla. Larger stamens connate. Style ovate, flat, at the top of a tongue-shaped silicle.

89 Bòleum. Larger stamens connate. Style slender, somewhat conical at the top of a beak-formed silicle.

90 Carrichte'ra. Stamens all free. Style ovate, flat, leafy (f. 47. *c.*).

91 Succòwia. Stamens all free. Style slender, conical. Valves of silicle echinated.

92 Savi'gnya. Silicle sessile, elliptical; valves rather convex. Umbilical cord short, free. Calyx valvular in the bud, equal at the base. Petals entire. Stamens toothless. Seeds imbricate, in two rows. Cotyledons conduplicate. (R. Brown.)

Tribe XIV.

Psychi'neæ *or* Orthoplòceæ Angustise'ptæ (*D. C. syst. 2. p. 153. prod. 1. p. 224.*). *Silicle with keeled* (f. 47. *j.*) *or navicular valves, and a very narrow dissepiment. Seeds compressed. Cotyledons folded together* (f. 45. *f. j.*).

93 Schòuwia. Silicle oval; valves furnished with a narrow wing on the back, their whole length.

94 Psychi'ne. Silicle as if it were triangular, narrowed at the base; valves furnished with a wing on their back at the top (f. 47. *j.*).

Tribe XV.

Zi'lleæ *or* Orthoplòceæ Nucamenta'ceæ *(D. C. syst. 2. p. 153. prod. 1. p. 224.). Silicle indehiscent, ovate, or globose, 1-celled, 1-seeded* (f. 47. *i.*). *Valves indistinct* (f. 47. *i.*). *Seeds globose. Cotyledons folded together* (f. 45. *f. j.*).

95 Zi'lla. Silicle 2-celled; cells 1-seeded.

96 Murica'ria. Silicle 1-celled, 1-seeded (f. 47. *i.*). Seed inserted laterally. Petals equal.

97 Calepi'na. Silicle 1-celled, 1-seeded. Seed hanging from the top of the silicle. Outer petals rather larger than the inner ones.

XVI.

Rapha'neæ *or* Orthoplo'ceæ Lomentaceæ *(D. C. syst. 2. p. 153. prod. 1. p. 225.). Silicle or silique separating or dividing transversely into one or few-seeded joints or cells* (f. 47. *k. m.*). *Seeds globose. Cotyledons folded together* (f. 47. *j. f.*).

98 Cra'mbe. Silicle 1 (f. 47. *h.*) or 2-jointed, lower joint abortive, upper joint globose, 1-seeded (f. 47. *h.*).

99 RAPI'STRUM. Silicle 2-jointed, upper joint ovate, wrinkled. Seeds solitary in the cells, the one in the upper joint is erect, and the one in the lower is pendulous.

100 DIDE'SMUS. Silicle 2-jointed, each joint containing 1-2 seeds, lower joint truncate at the top, upper one bearing the style.

101 ENARTHROCA'RPUS. Silique 2-jointed, lower joint obconical, short 1-2-seeded, upper one 9-10-seeded, but loculate within (f. 47. *k.*).

102 RA'PHANUS. Silique transversely many-celled or separating into many joints (f. 47. *m.*).

SUB-ORDER IV. SPIROLO'BEÆ. (D. C. syst. 2. p. 154. prod. 1. p. 228.) Cotyledons incumbent, linear, spirally or rather circinately twisted (f. 45. *k. l.*).

TRIBE XVII.

BUNIA'DEÆ *or* SPIROLO'BEÆ NUCAMENTA'CEÆ *(D. C. syst. 2. p. 154. prod. 1. 228.). Silicle nucumentaceous, indehiscent, 2-4-celled* (f. 46. *s.*). *Cotyledons truly circinately twisted* (f. 45. *k. l.*).

103 BU'NIAS. Character the same as that of the tribe.

TRIBE XVIII.

ERUCARIE'Æ *or* SPIROLO'BEÆ LOMENTA'CEÆ *(D. C. syst. 2. p. 154. prod. 1. p. 230.). Silique lomentaceous, 2-jointed, lower joint 2-celled, upper one ensiform* (f. 47. *l.*). *Cotyledons replicate, somewhat spiral* (f. 45. *l.*).

104 ERUCA'RIA. Character the same as the tribe.

SUB-ORDER V. DIPLECOLO'BEÆ. (D. C. syst. 2. p. 154. prod. 1. p. 230.) Cotyledons incumbent, linear, with 2 legs or a double plait, that is to say, plaited twice crosswise (f. 45. *m.* f. 47. *p.*). Seeds depressed.

TRIBE XIX.

HELIOPHI'LEÆ *or* DIPLECOLO'BEÆ SILIQUO'SÆ *(D. C. syst. 2. p. 154. prod. 1. p. 231.). Silique elongated* (f. 47. *o.*) *rarely oblong or oval; dissepiment linear or oval; valves flat, or in those with elongated siliques they are rather convex* (f. 47. *o.*).

105 CHAMI'RA. Calyx with 2 spurs at the base.

106 HELIO'PHILA. Calyx equal at the base.

TRIBE XX.

SUBULARIE'Æ *or* DIPLECOLO'BEÆ LATISE'PTÆ *(D. C. syst. 2. p. 155. prod. 1. p. 235.). Silicle oval* (f. 47. *n.*) *with an elliptical dissepiment, convex valves, many-seeded cells, and a sessile stigma* (f. 47. *n.*).

107 SUBULA'RIA. Silicle oval, with convex valves, with 4 seeds in each cell, and a sessile punctiform stigma (f. 47. *n.*). Calyx closed.

108 PLATYPE'TALUM. Silicle oval, with convex valves with numerous seeds in each cell. Style very short, crowned by a spreading stigma. Calyx a little spreading. Petals dilated.

TRIBE XXI.

BRACHYCARPE'Æ *or* DIPLECOLO'BEÆ ANGUSTISE'PTÆ *(D. C. syst. 2. p. 155. prod. 1. p. 235.). Silicle didymous* (f. 51. *a.*) *with a very narrow dissepiment, very ventricose valves, 1-seeded cells, and a short style* (f. 51. *a. b.*).

109 BRACHYCARPÆ'A. Character the same as the tribe (f. 51. *a.*).

SUB-ORDER VI. SCHIZOPETALIE'Æ. Cotyledons 4, spirally twisted. Petals pinnatifid.

110 SCHIZOPE'TALON. Character the same as the sub-order.

SUB-ORDER I. PLEURORHI'ZEÆ (from πλευρον, *pleuron*, a side, and ῥιζα, *rhiza*, a root;) radicle at the side of the cotyledons, (f. 45. *h. g. d.*) D.C. syst. 2. p. 161. prod. 1. p. 132. Cotyledons flat, accumbent (f. 46. *c.* f. 45. *g.*). Radicle lateral (f. 45. *g. d.*). Seeds compressed, sometimes marginate.

Tribe I.

ARABI'DEÆ (from *Arabis*, and *idea*, shape of a thing; plants agreeing with *Arabis* in important characters,) or PLEURORHI'ZEÆ (see sub-order) SILIQUO'SÆ (*siliqua*, a long pod; pods long.) D. C. syst. 2. p. 161. prod. 1. p. 132. Silique dehiscent, with a linear dissepiment more or less broader than the seeds (f. 46. *b.*). Seeds oval, compressed, usually margined. Cotelydons flat, accumbent (f. 46. *c.* f. 45. *g.*), parallel with the dissepiment.

I. MATHI'OLA (in honour of Peter Andrew Mathioli, an Italian physician, died in 1577; he was first physician to Ferdinand of Austria, and author of a commentary upon the works of Dioscorides.) R. Br. in hort. kew. ed. 2. vol. 4. p. 119. D. C. syst. 2. p. 162. prod. 1. p. 133.

LIN. SYST. *Tetradynàmia Siliquòsa.* Silique roundish. Stigmas connivent, thickened or horned (f. 48. *b.*) on the back. Calyx bisaccate at the base. Seeds compressed, disposed in 1 series, numerous (f. 48. *a.*). Mostly herbs, very rarely suffruticose, erect, nearly the whole species are covered with a soft white stellate down, sometimes they are scabrous, with pedicellate glands. Leaves alternate, oblong, entire, or sinuately-toothed. Racemes terminal. Pedicels without bracteas. Flowers purple or white, sometimes of a dark dreary colour, generally sweet-scented. The leaves of all the species, as well as those of *Cheiránthus*, and many other plants of this class may be used as pot-herbs or salads.

SECT. I. PACHYNO'TUM (from παχυς, *pachys*, thick; νωτος, *notos*, the back; stigmas.) D. C. syst. 2. p. 163. prod. 1. p. 132. Petals obovate. Stigmas thick, not horned on the back. The plants contained in this section are very ornamental.

1 M. INCANA (R. Br. in Ait. hort. kew. ed. 2. vol. 4. p. 119.) stem suffruticose at the base, erect, simple or branched; leaves lanceolate, quite entire, hoary; siliques somewhat cylindrical, without glands. ♂. ♄. H. Native of the south of Europe near the sea; in England on rocky cliffs to the east of Hastings. Cheiránthus incànus, Lin. spec. 924. Smith, engl. bot. 1935. Mill. illust. t. 55.—Weinm. phyt. t. 643. f. *a. e.* and 644. f. *a. b.* —Cheiránthus álbus and coccíneus, Mill. dict. Flowers varying from single to double, from scarlet to purple, and white or even variegated with these colours: these varieties have been designated under various names by authors before the days of Linnæus.

Queen, Brompton or *Hoary* Stock. Fl. May, Oct. England. Pl. 1 to 2 ft.

2 M. A'NNUA (Sweet, hort. suburb. lond. 147.) stem herbaceous, erect, branched; leaves lanceolate, blunt, hoary; pods somewhat cylindrical, without glands. ⊙. H. Native of the south of Europe by the sea-side. Cheiránthus incànus, Lin. spec. 925. Schkuhr. handb. 2. t. 184.—Bauh. hist. 2. p. 875. f. 1. Mathìola incàna, var. δ, R. Br. in Ait. hort. kew. ed. 2. vol.

4. p. 119. Hesperis æstìva, var. α, Lam. dict. 3. p. 324. Flowers varying from single to double, from scarlet to purple and white, or variegated with these colours.

Ten-week or *Annual* Stock. Fl. May, Oct. Clt. 1731. Pl. 1 to 2 feet.

3 M. glabra'ta (D. C. syst. 2. p. 165.) stem suffruticose, erect, branched; leaves lanceolate, smooth; siliques somewhat compressed, without glands. ♄. H. Native?—M. incàna, var. ε, R. Br. in Ait. hort. kew. ed. 2. vol. 4. p. 119. Leucòjum álbum, Blackw. herb. t. 181. Chieránthus glàbrus, Mill. dict. no. 9. Ch. glabérrimus, Colla, antol. bot. 5. p. 861.—Weinm. phyt. t. 642. f. 2.—Morr. hist. sect. 3. t. 8. f. 2, &c. Allied to *M. incàna*, but the whole plant is smooth and green, not hoary. Flowers varying from single to double, from white to purple and scarlet, never variegated.

Wall-flower-leaved or *Smooth* Stock. Fl.My.Oct. Clt.? Pl.1 ft.

4 M. Græ'ca (Sweet, hort. suburb. lond. 147.) stem herbaceous, erect, branched, leaves lanceolate, smooth; siliques somewhat compressed, without glands. ⊙. H. Native of Greece and the neighbouring islands. Cheiránthus Græ'cus, Juss. in Pers. ench. 2. p. 201. Hésperis æstìva, var. β, Lam. dict. 3. p. 324. Distinguished from *M. ánnua* in the leaves being smooth and green, not hoary; and from the rest of this section by its being the only green leaved annual. Flowers purple. Perhaps the four foregoing species have originated from one, and not unlikely from this plant?

Smooth-leaved Annual or *Grecian* Stock. Fl. May, Oct. Clt.? Pl. 1 foot.

5 M. fenestra'lis (R. Br. in Ait. hort. kew. ed. 2. vol. 4. p. 119.) stem suffruticose, erect, simple; leaves crowded, obovate, downy, and revolute; siliques pubescent, without glands, broadest at the base. ♂. H. Native of Crete on rocks by the sea-side. Cheiránthus fenestràlis, Lin. fil. dec. 31. t. 16. Jacq. hort. vind. 2. t. 179. Hésperis fenestràlis, Lam. dict. 3. p. 324. Flowers scarlet or pale purple, a little smaller than those of *M. incàna*.

Fenestrelles Stock. Fl. July, Aug. Clt. 1759. Pl. 1 foot.

6 M. elli'ptica (R. Br. in Salt. voy. abyss. app. p. lxv.) stem suffruticose, twisted, branched; leaves stalked, elliptical, hoary; siliques cylindrical, downy. ♃. ♄. H. Native of Abyssinia at the bottom of mount Taranta. Flowers sweet-scented. Differing but little from *M. incàna*.

Elliptic-leaved Stock. Fl. Feb. March. Pl. 1 foot.

7 M. sinua'ta (R. Br. in Ait. hort. kew. ed. 2. vol. 4. p. 120.) stem somewhat erect, herbaceous, branched; leaves oblong, downy, lower ones sinuated; siliques compressed, velvety, and muricated with glands. ♂. H. Native of the south of Europe along the sandy sea coast, also in Britain on the coasts of Cornwall and Wales, near Pembroke, Abermeney, and Llanddwyn. Cheiránthus sinuàtus, Lin. spec. 926. Smith, engl. bot. t. 462. Smith, fl. græc. t. 640. Ch. tricuspidàtus, Huds. angl. ed. 1. p. 450. Ch. muricàtus, Lam. fl. fr. 2. p. 507. Hésperis sinuàta, Lam. dict. 3. p. 323. Flowers of a dingy-red colour, about the size of those of *M. incàna*, sweet-scented in the evening. The whole plant has an alkaline bitterish taste.

Sinuated-leaved or Great Sea Stock. Fl. Aug. Britain. Pl. 2 ft.

8 M. acau'lis (D. C. syst. 2. p. 168.) stem almost none; leaves linear, sinuately-toothed, downy with stellate pubescence; flowers rising from the root. ⊙. H. Native of Egypt. Cheiránthus acaúlis, Balb. in litt. Spreng. nov. prov. p. 10. no. 19. The siliques are unknown, and therefore it is very doubtful what genus it belongs to. Flowers purplish. A very small plant.

Stemless Stock. Fl. May, Aug. Clt. 1823. Pl. ¼ foot.

9 M.? Pe'rsica (D. C. syst. 2. p. 168.) stem erect, suffrutescent at the base, hoary with velvety and glandular pubescence at the apex; leaves canescent, radical ones oblong, entire, stalked; siliques pubescent, without glands. ♃. H. Native of Persia. Cheiránthus Pérsicus, Pall. in herb. Lamb. Habit of *Mathìola*, but the colour of the flowers is yellow; therefore it is possibly a species of *Hésperis* or *Cheiránthus*.

Persian Stock. Pl. ¾ foot.

Sect. II. Lupe'ria (from λυπηρος, *luperos*, melancholic, sad; colour of flowers.) D. C. syst. 2. p. 169. prod. 1. p. 133. Back of stigmas thick, not horned. Petals oblong, from dirty yellow to a livid purple colour, sweet-scented in the evening.

10 M. tene'lla (D. C. syst. 2. p. 169.) stem herbaceous, erect, almost simple; leaves oblong, sinuately-toothed, drawn out at the base, canescent with stellate pubescence; siliques pubescent, without glands. ⊙. H. Native of the island of Cyprus. Flowers the colour of *M. tristis*, but paler.

Slender Stock. Fl. June, July. Clt. 1820. Pl. ½ foot.

11 M. torulo'sa (D. C. syst. 2. p. 169.) stem erect, a little branched, flocculosely-scabrous; leaves linear, nearly entire, downy; siliques rather torulose, beset with scabrous glandular and velvety pubescence. ♄. G. Native of Cape of Good Hope. Cheiránthus torulòsus, Thunb. prod. 108. Habit very near to that of *Hésperis*. Flowers small, of a dirty purplish-yellow.

Torulose-siliqued Stock. Fl. May, Aug. Clt. 1816. Pl. 1 or 2 ft.

12 M. Tata'rica (D. C. syst. 2. p. 170.) stem erect, nearly simple, glabrous; leaves hoary-tomentose, irregularly and runcinately-toothed; siliques very smooth, cylindrical, somewhat torulose. ♃. H. Native of the south of Tartary on rocks. Hésperis Tatárica, Pall. itin. 1. app. 117. t. O. Flowers of a livid purplish-yellow colour. Root fusiform, fleshy.

Tartarian Stock. Fl. May, Aug. Clt. 1826. Pl. 1 or 3 feet.

13 M. odorati'ssima (R. Br. in Ait. hort. kew. ed. 2. vol. 4. p. 120.) stem erect, branched; leaves downy or pubescent, toothed or pinnatifid; siliques compressed, somewhat hoary. ♄. G. Native of the calcareous mountains of Tauria and on rocks in eastern Caucasus, and in Iberia about Tiflis. Sims, bot. mag. t. 1711. Hésperis odoratíssima, Poir. suppl. 3. p. 195. Chieránthus odoratíssimus, Bieb. casp. 116. no. 22. Flowers dirty cream-coloured, or when old purplish-brown, sweet-scented in the evening.

Var. β, *Tanaicénsis* (D. C. syst. 2. p. 170.) plant covered with appressed pubescence; siliques one-half shorter than those of the species. Cheiránthus frágrans, Fisch. cat. hort. gor. 1812. p. 51. ♄. G. Native on the cretaceous hills at Tanaim.

Sweetest-scented Stock. Fl. June, July. Clt. 1795. β in 1822. Shrub 1 or 2 feet.

14 M. va'ria (D. C. syst. 2. p. 171.) stem erect, almost simple, and nearly naked: leaves linear, blunt, quite entire, hoary; flowers nearly sessile; siliques compressed; petals oval, waved. ♄. G. Native of south of Europe in many places, particularly in the region of the Mediterranean. Cheiránthus vàrius, Smith, fl. græc. t. 636. Ch. trístis Suffren, Curt. bot. mag. 729. Flower nearly the same colour as those of *M. tristis*, but they are larger.

Var. β, Cheiránthus trístis, var. Sabaùda. All. ped. no. 991. Cheiránthus Vallesiàcus, Gay. ined. in herb. Gaud. Native of Vallais.

Variable Stock. Fl. May, July. Clt. 1820. Pl. ½ foot.

15 M. tri'stis (R. Br. in Ait. hort. kew. ed. 2. vol. 4. p. 120.) stem suffruticose at the base, erect, branched; leaves downy, linear, entire, or toothed; flowers nearly sessile; petals oblong; siliques nearly cylindrical. ♄. G. Native of stony places exposed to the sun in the south of Europe by the sea-side, viz. Portugal, Spain about Madrid, Greece, Piedmont, Mauritania, &c. Cheiránthus trístis, Lin. spec. 925. Ch. fruticulòsus, Lin. spec. ed. 2. p. 925. but not of his Mantissa. Hésperis angustifòlia, Lam. dict. 3. p. 322.—Barrl. icon. t. 803. Bocc. mus. 148. t. 111. Flowers dirty-yellow or greenish-brown, sweet-scented in the evening.

Sad-flowered Stock. Fl. May, July. Clt. 1768. Shrub 1 foot.

SECT. III. PINA'RIA (from πιναρος, *pinaros*, dirty, unclean; colour of flowers.) D. C. syst. 2. p. 172. prod. 1. p. 172. Back of stigmas drawn out into three horns (f. 48. *b*.). Petals oblong (f. 48. *e*.), from dirty yellow to purplish.

16 M. CORONOPIFO'LIA (D. C. syst. 2. p. 173.) stem erect, much branched from the base; leaves linear, dentately-pinnatifid, hoary; siliques somewhat torulose, and somewhat 3-pointed at the apex, without glands. ♃. H. Native of Sicily near Palermo on rocks at the monastery of del Parco, and on the mountains near Athens. Cheiránthus coronopifòlius, Smith, fl. græc. t. 637.—Barrl. icon. t. 999. f. 1 and 2. Very near to *M. trístis* and *M. lívida*. Petals of a dirty-purple colour.

Var. β, Hispánica (D. C. syst. 2. p. 173.). Cheiránthus parviflòrus, Thib. ined. ♃. H. Native of Spain. Perhaps a proper species. Differing from the species by its greater stature, but especially by the siliques being 3-times longer.

Buck-horn-leaved Stock. Fl. May, Aug. Clt. 1818. Pl. 1 or $1\frac{1}{2}$ foot.

17 M. OXY'CERAS (D. C. syst. 2. p. 173.) stem erect, branched, glandular; leaves velvety, sinuately-repand, upper ones entire; siliques cylindrical, somewhat velvety and glandular, tricuspidate at the apex, lateral points somewhat reflexed. ⊙. H. Native of sandy deserts near Damascus. Deless. icon. sel. 2. t. 11. This species is very like *M. lívida*, but the flowers are sessile, of a livid-purple colour.

Var. a, stem glandular from the base to the top. ⊙. H. Native of sandy deserts near Damascus.

Var. β; stem somewhat glandular only at the base. ⊙. H. Native of Persia.

Var. γ; lower leaves pinnatifid. ⊙. H. Native between Aleppo and Mosul.

Sharp-horned-siliqued Stock. Fl. July, Aug. Clt. 1820. Pl. $\frac{3}{4}$ ft.

18 M. LI'VIDA (D. C. syst. 2. p. 174.) stem somewhat diffuse, much branched; leaves oblong-linear, lower ones sinuated, covered with velvety down interspersed with glands; siliques somewhat cylindrical, pubescent and glandular, tricuspidate at the apex, points ascending longer than the stigma. ⊙. H. Native of Egypt in a desert near Caira, at Caid-Bey. Deless. icon. sel. 2. t. 12. Cheiránthus trístis, Forsk. fl. æg. arab. p. 119. Cheiránthus lívidus, Delile, ill. fl. æg. p. 19. no. 581. The whole plant in form and colour of flowers is like *M. trístis*, but it is an annual, not a shrub. Flowers livid-purple (f. 48.).

Livid-flowered Stock. Fl. July, Aug. Clt. 1820. Pl. $\frac{1}{2}$ foot.

19 M. LONGIPE'TALA (D. C. syst. 2. p. 174.) stem somewhat diffuse, branched, and somewhat pubescent; leaves oblong, sinuately-toothed; ovaries cylindrical, downy, without glands, three-pointed: petals longer than the calyx. ⊙. H. Native of the Levant about Bagdad. Very like *M. lívida*. Lamina of petals yellow at the base, but purplish at the top.

Long-petalled Stock. Fl. May, July. Clt. 1819. Pl. $\frac{1}{2}$ foot.

SECT. IV. ACINÒTON (from ακις, *akis*, a point; νωτος, *notos*, the back; back of stigmas horned.) D. C. syst. 2. p. 175. prod. 1. p. 134. Petals obovate, blunt or emarginate, pale purple or white. Siliques 3-pointed at the top. Seeds not margined. This section is perhaps sufficient to form a distinct genus.

20 M. TRICUSPIDA'TA (R. Br. in hort. kew. ed. 2. vol. 4. p. 120.) stem nearly erect, branched; leaves sinuately-pinnatifid; points of siliques 3, acute, nearly equal in length. ⊙. H. Native along the Mediterranean sea in the sand, from Spain to Alexandria. Cheiránthus tricuspidàtus, Lin. spec. 926. Schkuhr. handb. 2. p. 250. no. 1846. t. 184. Smith, fl. græc. t. 639. Cheiránthus villòsus, Forsk. æg. arab. p. 120. Hésperis tricuspidàtus, Lam. dict. 3. p. 323. Flowers purple, like those of *M. sinuàta*.

Three-pointed-siliqued Stock. Fl. Ju. Jul. Clt. 1739. Pl. $\frac{3}{4}$ ft.

21 M. PARVIFLÒRA (R. Br. in Ait. hort. kew. ed. 2. p. 121.) stem nearly erect, branched; leaves lanceolate, downy, repand-toothed; flowers sessile; siliques cylindrical, 3-pointed; points acute, middle one longest, blunt. ⊙. H. Native of the south of Spain, and in the empire of Morocco. Cheiránthus parviflòrus, Schousb. in Schrad. journ. 3. p. 369. Hésperis parviflòra, Poir. 3. p. 194. not of D. C. Flowers purple, like those of *M. tricuspidàta*, but they are one-half smaller.

Small-flowered Stock. Fl. Ju. July. Clt. 1799. Pl. $\frac{1}{2}$ foot.

22 M. LUNA'TA (D. C. syst. 2. p. 176.) stem nearly erect, branched; leaves oblong, repand-toothed, pubescent; pedicels short; siliques cylindrical, 3-pointed, lateral points somewhat incurved, much longer than the middle one. ⊙. H. Native of Spain. An intermediate plant between *M. tricuspidàta* and *M. parviflòra*. Flowers purple, like those of *M. sinuàta*.

Lunate-pointed-siliqued Stock. Fl. Ju. Jul. Clt. 1821. Pl. $\frac{1}{2}$ ft.

23 M. PUMI'LIO (D. C. syst. 2. p. 177.) stem very short; leaves pinnatifidly-sinuated, hoary; siliques tricuspidate; points blunt, longer than the stigma. ⊙. H. Native of Rhodes Island. Cheiránthus pumìlio, Smith, fl. græc. t. 638. Hésperis lácera, Sibth. in herb. Banks. Flowers few, purple, about the size of those of *M. sinuàta*.

Dwarf Stock. Fl. June, July. Pl. 1 or 2 inches.

24 M. HU'MILIS (D. C. syst. 2. p. 177.) stem very short; leaves oblong; rather hoary, sinuately-toothed; flowers nearly sessile; siliques nearly cylindrical, adult ones smooth, tricuspidate, points very short. ⊙. H. Native of Egypt about Rosetta. Flowers purple, rather distant.

Humble Stock. Fl. June, July. Pl. 2 or 3 inches.

† *Species not sufficiently known.*

25 M. BICO'RNIS (D. C. syst. 2. p. 177.) ⊙. or ♂. H. Native of Greece? Cheiránthus bicórnis, Smith, prod. fl. græc. 2. p. 26. Leaves hoary, pinnatifid; petals oblong; siliques torulose, furnished at the top with two acute horizontally spreading spines, which are one-half longer than the bifid stigma. Perhaps this plant may belong to the third section? D. C. Flowers purple.

Two-horned-podded Stock. Fl.? Pl. $\frac{1}{2}$ foot.

26 M. CRUCI'GERA (D. C. syst. 2. p. 177.) ♃. H. Native of Sicily on the mountains called di-Madonia and di-Castelbuono.—Bocc. mus. p. 148. t. 111. Flowers violet. Siliques erect, tricuspidate at the apex. Perhaps this species belongs to the fourth section.

Cross-bearing Stock. Pl. $\frac{3}{4}$ foot?

27 M. RUPE'STRIS (D. C. syst. 2. p. 714.) ♄. H. Native of Sicily on rocky mountains. Hésperis rupéstris, Raf. specch. 2. p. 46. Very like *M. incàna*, but the leaves are blunt and stalked. Petals emarginate. Calyx evidently gibbous. Flowers purple?

Rock Stock. Pl. 1 foot.

28 M. FASCICULA'TA (D. C. syst. 2. p. 714.) ♄. H. Native of Sicily by the sea-side near Messina.—Cup. panph. 1. t. 144. ed. Raf. t. 14. f. 2. Hésperis fasciculàta, Raf. specch. 2. p. 7. Allied to *M. tricuspidàta*, but the leaves are sessile, linear, entire, acute, and in fascicles. Flower purple? Perhaps this is the same as *M. crucigera?*

Fascicled-leaved Stock.

Cult. In order to procure fine double *Stock-Gilliflowers*, *Brompton* and *Queen-stocks*, is to make choice of such single flowering plants as grow near many double ones, for it has been observed that seed saved from plants growing among double kinds have produced a much greater number of double flowering

plants, than those which have been saved from plants separated from the double ones. Sow the seed in May, and after they reach two or three inches high they should be thinned at least 9 inches asunder, and the plants so taken out may be planted at about 6 inches apart in the flower border, if the following winter should be severe, the plants should be sheltered by mats, and in the following May and June they will become the greatest ornament of the flower border. Fine double varieties may be propagated by cuttings, which take root readily if planted under a hand-glass and shaded. The *Annual* or *Ten-week-stock* should be sown at three or four different times, February, March, April, and May, the plants from the last sowing will continue to flower till Christmas. Care should be taken in preserving only such single flowering plants for seed, both of the *Stock-Gilliflower* and *Ten-week-stock*, as have flowers of a fine colour. All the biennial and hard shrubby species of *Mathìola* should be treated in the same manner as that recommended for the *Stock-Gilliflower*, and all the annual species in the manner recommended for *Ten-week-stocks*. Fine double stocks may be planted in pots, in order that they may be sheltered by a frame during winter. *M. fenestràlis* thrives best if sown on rock-work. The green-house shrubby kinds thrive best in a light soil, mixed with sand, and cuttings will strike root readily if planted under a hand-glass.

II. CHEIRA'NTHUS (*cheiri* or *kheyry*, the Arabic name of a plant, with very red sweet-scented flowers, and *ανθος*, *anthos*, a flower, or perhaps from *χειρ*, *cheir*, the hand, and *ανθος*, a flower; hand-flower.) R. Br. in Ait. hort. kew. ed. 2. vol. 5. p. 118. D. C. syst. 2. p. 178. prod. 1. p. 135. Cheiránthus species, Lin. Juss. and Lam.

Lin. syst. *Tetradynàmia*, *Siliquòsa*. Siliques terete or compressed. Stigma 2-lobed or capitate. Calyx bisaccate at the base. Seeds in one series, ovate, compressed. Biennial, perennial, or suffruticose herbs, with oblong or lanceolate entire or toothed leaves. Racemes elongated. Pedicels bractless, filiform. Flowers of various colours, yellow, white, or purple, or party-coloured. The genus is called *Wall-flower*, from the species growing commonly on walls.

Sect. I. Chei'ri (see genus for derivation; plants agreeing with *Ch. Cheìri*.) D. C. prod. 1. p. 135. Style almost none. Seeds not margined.

1 C. chei'ri (Lin. spec. 924.) leaves lanceolate, quite entire, covered with 2-parted pressed hairs, or smooth; siliques linear; lobes of stigma recurved. ♄. ♂. H. Native throughout Europe on old walls and among stones. Schkuhr. handb. 2. no. 1840. t. 184. Blackw. herb. t. 176. Flowers varying in size from single to double, from yellow to rusty and blood-coloured, or variegated with the same colours. Some of the varieties of this plant are very ornamental, particularly the double kinds, and the flowers of all possess an agreeable odour. Being an acrid and hardy evergreen, it is sometimes sown in pastures along with parsley, thyme, &c. as a preventive of the rot in sheep.

The most remarkable varieties of common Wall-flower are the following:

α, *flore simplici*. Single yellow.
β, *flore pleno*. Double yellow.—Lob. icon. 33. f. 2.
γ, *máximus*. Large flowered yellow.
δ, *serràtus*. Large yellow, saw-leaved.
ε, *pátulus*. Double yellow, spreading.
ζ, *ferrugíneus*. Double rusty.
ϑ, *vàrius*. Double variegated with purple and yellow.
ι, *flavéscens*. Large double, pale yellow.
κ, *thyrsoìdeus*. Bunch-flowered, yellow.
λ, *gynántherus*. Flowers with anthers changed into carpels.
μ, *hæmánthus*. Single and double, bloody-flowered.

Cheiri or Common Wall-flower. Fl. April, Jul. Clt. 1573. Pl. 1 to 2 feet.

2 C. fruticulòsus (Lin. mant. 94. not of spec. ed. 1.) leaves lanceolate, acute, most hoary beneath, with simple pressed hairs. ♄. H. Native of Britain on old walls. Smith, engl. bot. t. 1934. Cheiránthus cheìri, Huds. ang. 287. Hook. fl. lond. t. 147? D. C. syst. 2. p. 180. var. *μ*. Flowers yellow, corymbose, sweet-scented.

Shrubby Wall-flower. Fl. April, May. Britain. Shrub 1 or 1½ ft.

3 C. alpi'nus (Lin. mant. 93. exclusive of the synonymes,) leaves lanceolate, somewhat toothed, covered with starry-pubescence; stem simple, straight; siliques spreading, six times longer than the pedicels; seeds appendiculate. ♃. H. Native of Norway and Lapland on the sides of high mountains. Wahl. fl. lap. no. 333. t. 12. f. 1. Jacq. fl. austr. t. 74. Flowers yellow, sweet-scented.

Alpine Wall-flower. Fl. April, July. Clt. 1820. Pl. ½ foot.

4 C. capita'tus (Dougl. in Hook. fl. bor. amer. p. 38.) plant rather rough; leaves linear-lanceolate, more or less toothed or entire, tapering much to the base, and are as well as the stem covered with close-pressed 2 parted hairs; flowers rather large, in dense corymbs; silique 3-times longer than the pedicel. ⊙. H. Native of North America on rocky places on the Columbia, near the sea and at Puget Sound, and on the coast of California. Ch. àsper, Schlecht. et Cham. in Linnæa. vol. 1. p. 14. Stem branched. Flowers yellow. Style thick, about a line long, terminated by a capitate stigma. Seeds compressed, not margined.

Capitate Wall-flower. Fl. June, July. Clt. 1826. Pl. 1 foot.

5 C. ochroleu'cus (Hall. fil. ex Schleich. cat. helv. p. 16.) leaves oblong-lanceolate, somewhat toothed, covered with 2-parted hairs, or smooth; stems decumbent, branched; petals obovate; siliques erect, pointed by the permanent style. ♃. H. Native of the Alps of Jura on the mountains called Chasseral and Falconario, among stones and on rocks, and at a place called *Creux du Van*. Ch. dùbius, Sut. fl. helv. 2. p. 65. Ch. decúmbens, Schlecht. cat. helv. Erýsimum ochroleùcum, var. *α*, D. C. fl. fr. ed. 3. vol. 4. p. 658.—Hall. hist. no. 449. t. 14. Flowers pale yellow, scarcely scented.

Cream-coloured Wall-flower. Fl. April, July. Clt. 1819. Pl. procumbent.

Sect. II. Cheiroi'des (from *cheiri*, and *idea*, form, similarity.). D. C. prod. 1. p. 136. Style filiform. Seeds margined. Siliques 4-angled. Psilóstylis, Andrz. in litt.

6 C. tenuifo'lius (Lher. st. nov. p. 92.) leaves linear, quite entire, somewhat silky with 2-parted hairs; stem frutescent, branched. ♄. F. Native of Madeira. Flowers yellow.

Fine-leaved Wall-flower. Fl. May, Ju. Clt. 1777. Sh. 2 ft.

7 C. muta'bilis (Lher. st. nov. 1. p. 92.) leaves linear, lanceolate, pointed, finely serrated, somewhat downy with 2-parted hairs; stem frutescent, branched. ♄. F. Native of Madeira. Curt. bot. mag. t. 195. Flowers at first cream-coloured, afterward becoming purple or striped.

Changeable-flowered Wall-flower. Fl. March, May. Clt. 1777. Shrub 2 or 3 feet.

8 C. longifòlius (Vent. malm. t. 83.) leaves very long, linear-lanceolate, pendulous, acuminated, remotely serrated, rather downy with 2-parted hairs; stem frutescent, branched. ♄. F. Native of Teneriffe. Hésperis longifòlia, Poir. suppl. 3. p. 195. Like *Ch. mutábilis*. Flowers at first white, afterwards becoming blue or purple.

Long-leaved Wall-flower. Fl. Sep. Dec. Clt. 1815. Sh. 2 to 3 ft.

9 C. scopa'rius (Willd. enum. p. 681.) leaves linear-lanceolate, acuminated, entire, rather pubescent with appressed 2-parted hairs; stem shrubby, branched. ♄. F. Native of

Teneriffe. Hésperis cinèrea, Poir. suppl. 3. p. 196. Very like *Ch. mutábilis*, but evidently distinct.

Var. a, purpuráscens (D. C. syst. 2. p. 184.) flowers at first white, then purplish. ♄. F.

Var. β, æruginòsus (D. C. l. c.) flowers at first rust-coloured, afterwards paler, and suffused with red.

Var. γ, chamæ'leo (D. C. l. c.) flowers at first orange, afterwards purple. Ch. cheìri, var. Chamæ'leon, Ker. bot. reg. t. 219. These are very ornamental plants.

Broom Wall-flower. Fl. May, Oct. Clt. 1812. Sh. 2 to 3 ft.

10 C. semperflòrens (Schousb. moroc. ed. germ. p. 181.) leaves linear-lanceolate, quite entire, roughish; stem shrubby, branched; siliques compressed; pedicels one-half shorter than the calyx. ♄. F. Native of the kingdom of Morocco and about Mogodor. Flowers yellow or white.

Ever-flowering Wall-flower. Fl. Jan. Dec. Clt. 1815. Sh. 1 or 2 ft.

11 C. linea'ris (Vent. malm. p. 83. not of Thunb.) leaves linear, quite entire, smoothish; stem shrubby, branched; siliques compressed, tapering to both ends. ♄. F. Native of Teneriffe. Ch. frutéscens, Pers. ench. 2. p. 201. Very like *Ch. semperflòrens*, but the plant is more shrubby and the leaves are shorter and narrower. Flowers white, never yellow.

Linear-leaved Wall-flower. Fl. Mar. Jul. Clt. 1815. Shrub 1 or 2 feet.

12 C. linifòlius (Pers. ench. 2. p. 201.) leaves linear, quite entire, scabrous, crowded; stem shrubby, branched; siliques somewhat cylindrical, three times longer than the calyx; pedicels one half shorter than the calyx. ♄. F. Native of Spain, Hésperis semperflòrens, *var. β*, Poir. suppl. 3. p. 196. Hésperis linifòlius, Desf. cat. hort. par. ed. 1. p. 129. Very like *Ch. semperflòrens*, but easily distinguished from it by the young leaves being crowded into the axillæ of the old ones, as well as by the flowers being purplish, not yellow nor white.

Flax-leaved Wall-flower. Fl. March, Aug. Clt. 1815. Shrub 1 to 2 feet.

† *Species not sufficiently known.*

13 C.? Syri'acus (D. C. syst. 2. p. 185.) leaves ovate-oblong, cordately-auriculate, toothed, smooth; stem erect, flexuous, branched, smooth. ♂. H. Native of Syria. Hésperis Syrìacus, Rauw. or. p. 74. with a figure.—Cam. hort. med. p. 74. t. 19.—Mor. oxon. 2. p. 252. sect. 3. t. 10. f. 4. &c. Flowers not seen.

Syrian Wall-flower. Pl. 2 feet.

14 C.? pulche'llus (Willd. spec. 3. p. 523.) leaves linear-lanceolate, acutely toothed, rather pubescent with 2-parted hairs. ♃. H. Native of Cappadocia. A small plant with a shrubby base. Petals obovate yellow, size of those of Erýsimum Helvéticum. Seeds unknown.

Pretty Wall-flower. Fl.? Pl. ½ foot.

15 C.? salìnus (Lin. mant. 93.) leaves lanceolate, blunt, quite entire, downy; stem erect; anthers inclosed. ♄. H. Native of Siberia and Tartary near salt pits. ? Hésperis salìna. Lam. dict. 3. p. 324. Very like *Mathìola incàna*, but 8-times smaller. Flowers purple with a yellowish throat, sweet-scented.

Salt-pit Wall-flower. Pl. ½ foot.

16 C. Palla'sii (Pursh. fl. amer. sept. 2. p. 436.) leaves lanceolate-linear, attenuated, repand-toothed, smoothish; stem simple, erect, round. ♂. H. Native of North America, on the North-West coast. C. denticulàtus, Willd. herb. Stem pubescent with small 2-parted-hairs. Flowers nearly like those of *Mathìola incàna*, but dark-purple. Siliques somewhat cylindrical, crowned by the small subcapitate stigma.

Pallas's Wall-flower. Fl. Jul. Pl. ¼ foot.

17 C. pygmæ'us (Adams, in. mem. soc. mosc. 5. p. 114.) leaves linear-lanceolate, quite entire, rather hispid; stem simple, ascending; racemes corymbose; siliques very long, somewhat 4-sided; stigma 2-lobed. ♃. H. Native of Siberia, at Cape Bykofskoy on the sea shore. Like *Ch. alpìnus*, but differing from it in the leaves being linear-lanceolate, and rather hispid, as well as in the flowers being small violet, not sulphur-coloured. Perhaps a species of *Erýsimum*.

Pygmy Wall-flower. Fl. Jul. Pl. ¼ foot.

18 C. flexuòsus (Smith. fl. græc. t. 634.) ⊙. H. Native of the island of Cyprus. Leaves obovate roundish. Stem diffuse, flexuous; siliques spreading, stiff, pungent.

Flexuous-stemmed Wall-flower. Pl. ½ foot.

19 C. odora'tus (Pall. ex. Spreng. syst. 2. p. 896.) stem simple, erect, smooth; leaves white with dense tomentum, radical ones pinnatifidly-serrated, stalked, cauline ones oblong, sessile, with cartilaginous teeth; flowers in racemose-spikes; calyx smooth. ♃. H. Native of the North of Persia.

Sweet-scented Wall-flower. Pl. ½ foot.

Cult. The hardy shrubby species, such as fine varieties of common *Wall-flower*, should be encreased by young cuttings, which will soon strike root; if planted under a hand glass. The greenhouse or frame kinds will thrive well in a light rich soil; and young cuttings planted in the same kind of soil, will strike most freely under a hand glass. The perennial or herbaceous species may be increased by dividing the plants at the root, by young cuttings planted under a hand glass, or by seeds. The biennial and annual species, only require to be sown in the open border; some of the tenderer sorts, or those natives of warmer climates, may be sown in a gentle hot bed in the month of March, and transplanted into the open borders about the middle or end of April. The whole of the species answer well to be planted or sown on rock-work, and even the tenderer species will survive the winter in such a situation.

III. NASTU'RTIUM (from *nasus*, the nose, and *tortus*, tormented; acrid taste of *N. officinàle*, which affects the muscles of the nose.). R. Br. in hort. kew. ed. 2. vol. 4. p. 109. D. C. syst. 2. p. 187. prod. 1. p. 137. but not of Haller and Mœnch.

Lin. Syst. *Tetradynàmia, Siliquòsa.* Silique nearly cylindrical, short or declinate. Stigma somewhat two-lobed. Calyx equal at the base, spreading. Seeds small, not margined, disposed in two irregular series. Herbs usually aquatic, smooth, branched, easily rooting. Stems cylindrical. Leaves variable, usually pinnately-cut. Racemes many-flowered, without bracteas; pedicels filiform. Flowers white or yellow. Siliques generally declinate. This genus differs from *Sisýmbrium*, which it is very much like, in the cotyledons being accumbent, not incumbent.

Sect. I. Carda'minum (from *καρδια, kardia*, the heart, and *δαμαω, damao*, to subdue; stomachic quality of the plant.) D. C. syst. 2. p. 188. prod. 1. p. 137. Petals white, larger than the calyx. Siliques nearly cylindrical. Glands 4, at the base of the stamens. Seeds reticulately-wrinkled. Cotyledons obliquely incumbent. Perhaps a proper genus.

1 N. officina'le (B. Br. in hort. kew. ed. 2. vol. 4. p. 110.) leaves pinnate; leaflets ovate, somewhat cordate, repand; upper leaves pinnatifid, with narrow segments; terminal leaflets large. ♃. H. W. Native in rivulets throughout the world; plentiful in Britain in clear spring rivulets and ponds. Sisýmbrium Nastúrtium, Lin. spec. 917. Fl. dan. t. 690. Smith. eng. bot. t. 855. Curt. fl. lond. 6. t. 44. Woodv. med. bot. 1. p. 134. t. 48. Lun. hort. jam. 2. p. 269. There are two or three varieties of this plant but they are of little consequence.

Water-cress is well known for its agreeable warmth and flavour, in the form of a salad, it is esteemed a wholesome stomachic, and is recommended by many physicians as an antiscor-

butic. It acts as a gentle stimulant and diuretic; for these purposes the expressed juice, which contains the peculiar taste and pungency of the herb, may be taken in doses of an ounce or two, and continued for a considerable time (Dunc. ed. disp. 474.). The juice was formerly used with that of *Scurvy-grass* and *Seville-oranges* to form a popular remedy under the name of spring juices. The water-cress has been cultivated in the neighbourhood of London, to a considerable extent since 1808, as a salad. A running stream of clear water is essential to its cultivation; in the bed of this stream the plants are inserted in rows, in the direction of the current, and all that is necessary is to take up and re-plant occasionally, and to keep the plants free of mud and weeds, or any accumulation of extraneous matter. They will not grow so freely in a muddy bottom as amongst sand and gravel, neither will their flavour be so good. Some cultivate them in water beds, but they never prosper so well nor is their flavour so good as when cultivated in natural streams. The Spring or Autumn is the best time for transplanting the water-cress. Some market gardeners, who can command a small stream of water, grow the water-cress in beds sunk about two feet in a retentive soil, with a very gentle slope from one end to the other. Along the bottom of this bed, which may be of any convenient length and breadth, chalk or gravel is deposited, and the plants are inserted, about six inches apart every way. Then according to the slope and length of the bed, dams are made six inches high across it, at intervals; so that when these dams are full, the water may rise not less than three inches on all the plants included in each. The water being turned on will circulate from dam to dam, and the plants, if not allowed to run to flower, will afford abundance of young tops in all but the winter months. A stream of water not larger than what will fill a pipe of an inch bore, will suffice to irrigate in this way the eighth of an acre. As some of the plants are apt to rot off in the winter, the plantation should be laid dry two or three times a year, and all weeds and decayed parts removed, and vacancies filled up. Water-cress grown in this way is, however, far inferior to that grown in natural streams.

Officinal or Common Water-cress. Fl. Jun. July. Britain. Pl. 1 to 2 feet.

Sect. II. Brachy'lobos (βραχυς, *brachys*, short, λοβος, *lobos*, a pod; pods short). D. C. syst. 2. p. 190. prod. 1. p. 137. Petals yellow. Siliques somewhat cylindrical or elliptical. Glands of the receptacle small.

2 N. sylve'stre (R. Br. in hort. kew, ed. 2. vol. 4. p. 110.) leaves pinnate; leaflets lanceolate, serrated, or cut. ♃. H. Native of moist pastures and along the sides of rivers and rivulets throughout Europe, North of Asia, Persia and Tauria, China, New Holland, and also in North America by the river Delaware, where it has probably been introduced; plentiful in Britain in gravelly wet meadows about the margins of rivers and ditches. Sisýmbrium sylvéstre, Lin. spec. 916. Smith, engl. bot. t. 2324. Curt. fl. lond. fasc. 3. t. 41. Sisýmbrium vulgàre, Pers. ench. 2. p. 196. Root creeping extensively. Petals golden, longer than the calyx.

Wild Nasturtium or Water Rocket. Britain. Fl. June, Sept. Pl. 1 foot.

3 N. palu'stre (D. C. syst. 2. p. 191.) leaves pinnatifid, auricles stem-clasping, ciliated, with the lobes confluent, toothed, smooth; root fusiform; petals equal in length with the calyx; pods blunt at both ends, rather turgid. ⊙. H. Native throughout Europe, Persia, China, Java, and North America, about the banks of rivers, ponds, and ditches, and in damp but not very watery meadows; frequent in Britain. Sisýmbrium palústre, Leys. fl. hal. no. 679. Schkuhr. handb. 2. t. 187. Sisýmbrium terréstre, With. brit. 582. Curt. fl. lond. 5. t. 49. Smith, engl. bot. 1747. Stok. mat. med. 3. p. 447. Sisýmbrium amphíbium *a*, Huds. 298. β. Lin. fl. suec. ed. 2. p. 232. Sisýmbrium Islándicum, Oed. fl. dan. t. 490. Myàgrum palústre, Lam. dict. 1. p. 572. Flowers small, yellow.

Var. β, *pusíllum*, (D. C. syst. 2. p. 192.) ⊙. H. Native of South of France. Myàgrum pusíllum, Lam. dict. 1. p. 572. Vill. dauph. 3. p. 341. t. 39. Plant small. Leaves divided into more linear lobes than the species.

Var. γ, *barbareæfòlium* (D. C. syst. 1. c.), ⊙. H. Brachylobos barbareæfòlius, Desv. journ. bot. 1814. vol. 3. p. 170. Sisýmbrium barbareæfòlium, Del. fl. æg. ill. p. 19. Native of Egypt about Rosetta. Plant larger in all its parts than the species, and the leaves are more profoundly pinnatifid.

Var. δ? *tanacetifòlium* (D. C. syst. 1. c.). ⊙. H. Sisýmbrium tanacetifòlium, Walt. fl. carol. ex Bosc. Plant dwarfer; leaves profoundly cut; lobes pinnatifid; siliques longer than those of the species.

Var. ε? *brévipes* (D. C. syst. 1. c.) differing from the species in the pedicels being very short, fructiferous ones hardly a line long and with the stigma nearly sessile. ⊙. H. Native of Porto-Ricco. Perhaps a distinct species.

Var. ζ, *Blùmei*; auricles wanting. Native of Java.

Marsh Nasturtium or Small jagged Water Radish. Fl. June, Sept. Britain. Pl. 1 foot.

4 N. Portorice'nse (Spreng. syst. 2. p. 882.) leaves interruptedly pinnate, smooth; segments oblong, obtuse, repand-crenate; petals smaller than the calyx; siliques rather cylindrically-linear, crowned by the almost sessile stigma. ♃. F. Native of Porto Ricco and St. Domingo.

Portorico Nasturtium. Pl. 1 foot.

5 N. a'nceps (D. C. prod. 1. p. 137.) leaves pinnatifid, very smooth; auricles stem-clasping; stems creeping; petals larger than the calyx; pods pointed at both ends, two-edged. ♃. H. Native on the banks of rivers above the water, among sand, about Upsal. Sisýmbrium ánceps, Wahl. fl. ups. p. 223. Sisýmbrium amphíbium terréstre, Ehrh. beitr. 5. p. 22. Lin. spec. ed. 2. p. 917. Fl. dan. 984. Flowers yellow.

Two-edged-podded Nasturtium or Water Radish. Fl. June, July. Clt. 1823. Pl. 1 foot.

6 N. micra'nthum (D. C. prod. 1. p. 137.) pubescent; leaves pinnate; leaflets opposite, deeply jagged, with the terminal leaflet roundish-ovate; petals larger than the calyx; pods erect, linear-oblong, smooth. ⊙. ♃.? Native of the East Indies. Sisýmbrium micránthum. Roth. nov. pl. spec. 324. Like *N. palústre*. Flowers small, yellow.

Small-flowered Nasturtium or Water Radish. Fl. June, Aug. Pl. 1 foot.

7 N. Madagascarie'nse (D. C. syst. 2. p. 192.) leaves pinnate; leaflets stalked, pinnatifid; lobes ovate, toothed, terminal one largest. ⊙.? S. Native of the eastern coast of Madagascar. Flowers small, not sufficiently known.

Madagascar Nasturtium or Water Radish. Pl. 1 foot.

8 N. Mexica'num (Moc. Sesse, and Cerv. fl. mex. icon. ined. and D. C. syst. 2. p. 193.) leaves pinnatifid, smooth; lobes oblong, sinuately-toothed, blunt; petals equal in length with the calyx; pods declinate, somewhat twisted, three times longer than the calyx. ⊙? ♃? H. Native of Mexico on the margins of rivulets. Perhaps sufficiently distinct from *N. palústre*.

Mexican Nasturtium or Water Radish. Pl. 1 foot.

9 N. Bonarie'nse (D. C. syst. 2. p. 193.) leaves pinnate-parted; lobes distant, linear, somewhat toothed, smooth; pods nearly erect, terete-compressed, twice or thrice longer than the pedicels. ⊙. H. Native of Buenos-Ayres. Sisýmbrium Bonariénse, Poir. dict. 7. p. 205. Flowers yellow. Root perpendicular.

Buenos-Ayrean Nasturtium or Water Radish. Pl. ¾ foot.

10 N. ceratophy'llum (D. C. syst. 2. p. 193.) leaves linear,

pinnatifidly-toothed, smoothish; pods shorter than the pedicel. ⊙. H. Native of Mauritania in sandy places near Cafsa. Sisýmbrium ceratophýllum, Desf. atl. 2. p. 82. t. 154. Flowers yellow; petals entire, one half longer than the calyx.

Horn-leaved Nasturtium or Water Radish. Fl. June, July. Clt. 1820. Pl. ¾ foot.

11 N. CORONOPIFO'LIUM (D. C. syst. 2. p. 194.) leaves lanceolate, pinnatifidly-toothed, pubescent; stem almost naked, ascendant; pods linear, incurved, length of the pedicels. ⊙. H. Native of North Africa in a sandy desert near Cafsa. Sisýmbrium coronopifòlium, Desf. atl. 2. p. 82. t. 154. Stems tufted. Lower leaves almost like those of *Plantàgo corónopus*. Flowers yellow.

Buckhorn-leaved Nasturtium or Water Radish. Fl. winter; in England in July, Sept. Clt. 1820. Pl. ¾ foot.

12 N. BURSIFO'LIUM (D. C. syst. 2. p. 194.) leaves villous, radical ones pinnatifid, stem ones sagittate, entire, acuminated; stems erect, and are as well as pedicels hispid. ⊙. H. Native of Kamtschatka. Sisýmbrium bursifòlium, Patr. ined. Root simple, perpendicular. Petals larger than the calyx, pale yellow.

Shepherd's-*purse-leaved* Nasturtium or Water Radish. Fl. June, Aug. Clt. 1818. Pl. ½ foot.

13 N. SAGITTA'TUM (R. Br. in hort. kew. ed. 2. vol. 4. p. 111.) pubescent; radical leaves dentately-runcinate, stem ones sagittate, oblong, blunt; stems erect, branching from the base; pods deflexed. ♃. H. Native of Siberia at the Caspian sea. Sisýmbrium. mólle. Jacq. icon. rar. 1. t. 122. Sisymbrium sagittàtum, Ait. hort. kew, ed. 1. vol. 2. p. 390. Flowers pale yellow.

Arrow-leaved Nasturtium or Water Radish. Fl. May, June. Clt. 1780. Pl. ½ to 1 foot.

14 N. GLAUCOPHY'LLUM (D. C. syst. 2. p. 195.) very smooth; radical leaves stalked, obovately-orbicular, crenate, leathery; upper ones linear, scale-like. ♃? H. Native of Persia near Teheran. Deless. icon. sel. 2. t. 14. Stems slender. A very distinct species from the whole. Perhaps it belongs to section *Clandestinària*. Flowers yellow.

Glaucous-leaved Nasturtium or Water Radish. Pl. 1 foot.

15 N. LIPPIZE'NSE (D. C. syst. 2. p. 195.) radical leaves stalked, obovate, toothed, or somewhat lyrate, upper ones pinnate-parted; lobes linear, entire; pods linear, declinate. ♃. H. Native of Croatia, Dalmatia, Carinthia, Hungary, about Lippa, and about Constantinople, &c., in rocky places, Sisýmbrium Lippizénse, Wulf. in Jacq. coll. 2. p. 161. icon. rar. 3, t. 505. Sisýmbrium sylvéstre, var. β, Willd. spec. 3. p. 490. An intermediate species between *N. Pyrenàicum* and *N. sylvéstre*. Flowers yellow.

Lippa Nasturtium or Water Radish. Fl. May, June. Clt. 1820. Pl. ¾ foot.

16 N. PYRENA'ICUM (R. Br. in hort. kew, ed. 2. vol. 4. p. 110.) radical leaves stalked, obovate or lyrate, stem ones stem-clasping, pinnate-parted; lobes linear, entire; pods oval, pointed with the style. ♃. H. Native of Spain and the Pyrenees and many other parts of the south of Europe, in dry hilly or mountainous pastures or in the fissures of rocks. Sisýmbrium Pyrenàicum, Lin. spec. 917. Brachýlobos Pyrenàicus, All. ped. no. 1013. t. 18. f. 1. Myàgrum Pyrenàicum, Lam. dict. 1. p. 571. Lepídium stylòsum, Pers. ench. 2. p. 187. Root creeping. Flowers small, yellow.

Var. β, *Brachýlobos Domingénsis*, Desf. jour. 1814. vol. 3. p. 183. Sisýmbrium Domingénse, Poir. suppl. 5. p. 161. ♃. Native of St. Domingo.

Pyrenean Nasturtium or Water Radish. Fl. May, June. Clt. 1775. Pl. ½ to 1 foot.

17 N. AMPHI'BIUM (R. Br. in hort. kew, ed. 2. vol. 4. p. 110.) leaves oblong-lanceolate, lyrately-pinnatifid or serrated; root fibrous; petals larger than the calyx; pods ellipsoid, pointed with the style. ♃. H. Native nearly throughout the whole of Europe, also in North America and Japan in rivers and ditches and places about their banks not constantly overflowed; plentiful in Britain. Sisýmbrium amphíbium, Lin. spec. 917. Smith, engl. bot. t. 1840. Sisým. Roìpra, Scop. carn. ed. 2. no. 823. Camelìna aquática, Brot. fl. lus. 1. p. 564. Sisymb. diversifòlium, Stok. bot. mat. med. 3. p. 450. Root not creeping. Flowers small, bright yellow.

Var. α, *indivìsum* (D. C. syst. 2. p. 197.) leaves all somewhat entire or serrated, not, or scarcely auricled at the base. Sisýmbrium aquáticum, Gars. fig. t. 549.

Var. β, *variifòlium* (D. C. syst. l. c.) some of the leaves are serrated, others pectinately pinnatifid, and others are capillaceously-multifid.—Bauh. hist. 2. p. 867. f. 2.

Var. γ, *auriculàtum* (D. C. syst. l. c.) leaves undivided, eared at the base. Sisýmbrium stoloníferum, Presl. fl. cech. p. 137.

Amphibious Yellow Cress or Great Water Radish. Fl. June, Aug. Britain. Pl. aquatic.

18 N. NA'TANS (D. C. syst. 2. p. 198.) emersed leaves lanceolate, entire, or serrated, immersed ones bi-tripinnatifid, with capillary segments; pods obovate, length of style. ♃. H. Native of Siberia in stagnant, saltish water at the river Alei, also of North America in water in Canada about Montreal. Deless. icon. sel. 2. t. 15. Myàgrum nàtans, Patr. ined. Flowers smaller than those of *N. amphíbium*, pale yellow, or almost white.

Floating Yellow Cress or Water Radish. Fl. June, Aug. Clt. 1826. Pl. floating.

19 N. HETEROPHY'LLUM (D. Don, prod. fl. nep. p. 202.) smooth; stem angular, a little branched; leaves toothletted, obovate, or rhomboid, entire, or somewhat lyrate, lower ones stalked, upper ones sessile; siliques almost cylindrical, elongated, straight. ⊙. H. Native of Java and Nipaul. Flowers small, white.

Variable-leaved Nasturtium. Pl. ½ foot.

20 N. SPA'RSUM (D. Don, prod. fl. nep. p. 202.) leaves pinnate; leaflets oval-oblong, obtuse, deeply serrated, pubescent, mucronulate; corymbs few-flowered; siliques terete, twice the length of the pedicels; stem erect, branched. ⊙. H. Native of Nipaul.

Scattered Nasturtium. Pl. ½ foot.

SECT. III. CLANDESTINA'RIA (from *clandestinus*, hidden, secret; in allusion to the small, hardly evident petals, as well as from the species being imperfectly known). D. C. syst. 2. p. 198. prod. 1. p. 139. Petals none, or very small, and white. Pods somewhat cylindrical. A doubtful section. The generic characters of the species are not sufficiently known. Perhaps some of them belong to *Sisýmbrium*, others to *A'rabis*.

21 N. BENGHALE'NSE (D. C. syst. 2. p. 198.) leaves obovately-cuneated, toothed at the apex; pods somewhat cylindrical and rather turgid; pedicels a little shorter than the pods, furnished with bracteas. ⊙? H. Native of Bengal, Sinàpis Benghalénsis, Roxb. ined. This species and the following are allied to *Kibèra*, the IVth section of *Sisýmbrium* in the disposition of their flowers, but differ essentially in the short pods and accumbent cotyledons. Petals small, white.

Bengal Nasturtium. Fl. in summer. Clt. 1820. Pl. 1 foot.

22 N. DIFFU'SUM (D. C. prod. 1. p. 139.) leaves smooth, stalked, oval-oblong, toothed, lower ones somewhat pinnatifid; pods cylindrical, 3-times longer than the pedicels, distinct from the style; some of the pedicels are furnished with bracteas, some are naked. ⊙. H. Native of Java. Stems many, diffuse. Pedicels 3 lines long. Petals small, white.

Diffuse Nasturtium. Pl. 1 foot.

23 N. MICROSPER'MUM (D. C. syst. 2. p. 199.) leaves smooth,

radical ones stalked, pinnate-parted, cauline ones stem-clasping, deeply serrated; pods somewhat cylindrical; pedicels very short, furnished with bracteas. ⊙. H. Native of China in the province of Shantong. Flowers small, white, sessile, solitary, in the bosom of the bracteas.

Small-seeded Nasturtium. Pl. ½ foot.

24 N. clandesti'num (Spreng. nov. prov. p. 29. no. 63.) leaves pinnate; lobes cordate, roundish, stalked, repand, terminal one large; pods somewhat cylindrical, elongated. ⊙. H. Native of Brasil. Flowers inconspicuous, without petals. Like *N. officinàle*.

Hidden-petalled Nasturtium. Fl. Ju. Jul. Clt. 1820. P. ½ ft.

25 N. I'ndicum (D. C. syst. 2. p. 199.) smooth; lower leaves spatulate, runcinately-toothed, upper ones lanceolate, tooth-letted; pods somewhat cylindrical, 4-times longer than the pedicels. ⊙. H. Native of the East Indies and China. Sisýmbrium I'ndicum, Lin. mant. 93. Flowers small, without petals.

Var. β, Sisýmbrium Sinàpis, Burm. fl. ind. 140. exclusive of the synonyms. Native of Java.

Var. γ, Sisýmbrium apétalum. Desf. cat. hort. par. 1804. p. 130. but not of Lour. Sisymb. dùbium, Pers. ench. 2. p. 199.

Indian Nasturtium. Fl. June, Jul. Clt. 1820. Pl. ½ foot.

26 N. ape'talum (D. C. syst. 2. p. 200.) leaves downy, hastate at the base, pinnatifid at the apex; pods somewhat cylindrical, declinate. ⊙? H. Native of Cochin-China in gardens and in humid places. Sisýmbrium apétalum, Lour. coch. ed. Willd. 2. p. 486. Root fusiform. Petals wanting.

Petalless Nasturtium. Pl. ½ foot.

27 N.? arabifo'rme (D. C. syst. 2. p. 220.) leaves smooth, bluntly sagittate, oblong-lanceolate, pointed, entire; pods somewhat cylindrical, ascending; petals oblong, longer than the calyx. Native of South America between Santa Rosa de la Sierra and Puerto de Varientos, at the height of 4050 feet. Arabis resediflòra, H. B. et Kth. nov. spec. amer. 5. p. 81. Flowers white; petals oblong-linear, drawn out at the base, double the length of the calyx.

Arabis-like Nasturtium. Pl. 1½ foot.

† *Species not sufficiently known.*

28 N. nebrode'nse (Raf. in Desf. journ. 1814. vol. 2. p. 270.). Native of the Nebrodes in Sicily. Sisýmbrium Nebrodénse, Poir. suppl. 5. p. 161. Radical leaves stalked, oblong, wedge-shaped, stem ones sessile, ovate toothed. Pods oval-oblong. Petals equal in length with the calyx.

Nebrode Nasturtium. Pl. 1 foot.

29 N. hi'spidum (D. C. syst. 2. p. 201.). Native of Pennsylvania. Sisýmbrium híspidum, Poir. suppl. 5. p. 161. but not of Vahl. nor Mœnch. Brachýlobos híspidus, Desf. jour. 1814. vol. 3. p. 183. Leaves somewhat villous, pinnatifidly-runcinate; lobes toothed; teeth acute. Pods short, elliptical.

Hispid Nasturtium. Pl. 2 feet.

30 N. atrovi'rens (D. C. syst. 2. p. 201.) ⊙. H. Native of China. Sisýmbrium atrovírens, Horn. hafn. suppl. p. 72. Habit of *N. amphíbium*. Lower leaves lyrately-pinnatifid, upper ones ovate-lanceolate, repandly-toothed. Pods arched.

Evergreen Nasturtium. Fl. Ju. July. Clt. 1821. Pl. 1 ft.

31 N. myriophy'llum (Spreng. syst. 2. p. 883.) leaves bipinnate, and are as well as the erect branched stem, hoary with stellate pubescence; leaflets oblong, obtuse, cut; racemes strict; flowers small; siliques lanceolate, smooth, erect, terminated by the short style. Native of Quito. Sisýmbrium myriophýllum, Willd. in herb. Humb.

Myriad-leaved Nasturtium. Pl. 2 feet.

Cult. The species are mostly weedy and not worth cultivating for ornament, and therefore they are only fit for the arrangements in botanic gardens. Those species belonging to sections *Cardáminum* and *Brachýlobos*, require a moist soil, some will require to be planted in water. The annual species may be sown in the open borders early in the spring. The rest will grow under any circumstances.

IV. LEPTOCARPÆ'A (λεπτος, *leptos*, slender, καρπος, *karpos*, a fruit; slender pods.) D. C. syst. 2. p. 201. prod. 1. p. 140.

Lin. Syst. *Tetradynàmia, Siliquòsa.* Silique nearly cylindrical, very slender, almost parallel with the axis. Stigma sessile, two-lobed. Calyx spreading, equal. Seeds small, disposed in one or perhaps in two series. The cotyledons are perhaps incumbent, and if so, it should have been placed next to *Sisýmbrium*. An annual, erect, branching, herb, with pinnate-parted leaves and yellow scentless flowers.

1 L. lœse'lii (D. C. syst. 2. p. 202.). ⊙. H. Native of Germany and other parts of Europe, on walls and similar places. Sisýmbrium Lœsèlii, Lin. spec. 921. Jacq. fl. aust. t. 324. Schkuhr. handb. 2. no. 1904. t. 187. Sisýmbrium híspidum, Mœnch. suppl. 83. Turrìtis Lœsèlii, R. Br. in hort. kew. ed. 2. vol. 4. p. 109. Leaves stalked, pinnate-parted, somewhat lyrate; lobes deeply toothed, accuminated. Racemes terminal, elongated. Pedicels filiform, slender, bractless, spreading obliquely.

Lœsel's Leptocarpæa. Fl. May, Aug. Clt. 1683. Pl. 1 foot.

Cult. The seeds of this plant should be sown in the open border, or on rock-work, where it will succeed better, and it may afterwards be allowed to sow itself. Not worth general cultivation.

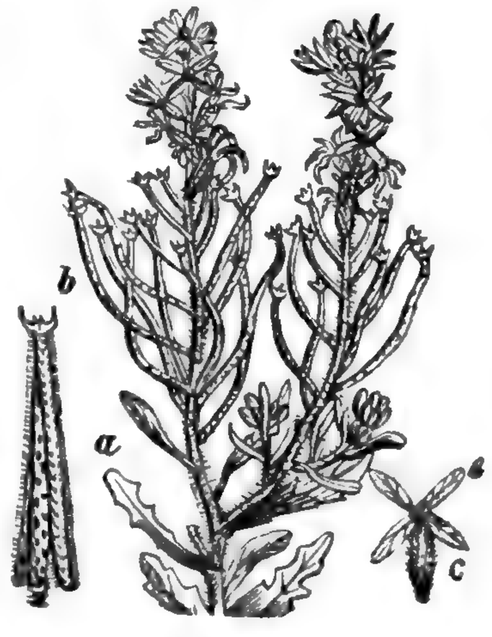
V. NOTO'CERAS (from νωτος, *notos*, the back, and κερας, *keras*, a horn;) pods furnished with horns or points on the back at the apex (f. 46. *a*.). R. Br. in hort. kew. ed. 1812. vol. 4. p. 117. D. C. syst. 2. p. 202. prod. 1. p. 140.

Lin. Syst. *Tetradynàmia, Siliquòsa.* Silique quadrangular, 2-edged, the valves are drawn out at top into a horn or mucrone. Seeds oval, compressed. Small annual herbs with erect or procumbent stems, and oblong or nearly linear, entire or sinuated leaves. Racemes opposite the leaves, also situated at the lower part of the stem. Flowers small, sometimes without petals.

Sect. I. Dicera'tium (from δις, *dis*, two, κερας, *keras*, a horn; pods furnished with two horns or points at the apex.) Lag. el. hort. madr. 1815. p. 20. D. C. syst. 2. p. 203. prod. 1. p. 140. Silique dehiscent, 2-horned. Seeds compressed. Cotyledons parallel with the dissepiment. Flowers small, yellow. Leaves entire, covered with appressed strigose 2-parted hairs.

1 N. Canarie'nse (R. Br. in hort. kew. ed. 2. vol. 4. p. 117.) pods 2-horned; petals equal; leaves entire; hair pressed, 2-parted strigose, fixed by their centre, scattered. ⊙. H. Native of the Canary Islands, particularly Teneriffe. Jacq. fil. ecl. t. 111. Erýsimum bicórne, Ait. hort. kew. ed. 1. vol. 2. p. 394. Seeds nearly orbicular, compressed, 4 in each cell.

FIG. 48.



Canary-Island Notoceras. Fl. Aug. Sept. Clt. 1779. Pl. ½ foot.

2 N. Hispa'nicum (R. Br. in hort. kew. ed. 2. vol. 4. p. 117.) pods 2-horned; petals unequal; leaves entire; hairs strigose, fixed by their middle; hence 2-parted, crowded. ⊙. H. Native of Spain, among sandy-calcareous rubbish.

Diceràtium prostràtum, Lag. elench. hort. madr. 1815. p. 20.—Deless. icon. sel. 2. t. 17. Very like *N. Canariénse*, but differing by its smaller, more rigid, and more prostrate habit.

Spanish Notoceras. Fl. Year. Clt. 1820. Pl. ½ trailing.

SECT. II. TETRACERA'TIUM (from τετρα, *tetra*, four-fold, and κερας, *keras*, a horn; pods furnished with four horns at the apex,) (f. 46. *a*.). D. C. syst. 2. p. 204. prod. 1. p. 140. Siliques 4-horned. Flowers small, perhaps without petals. Leaves sinuately-toothed. Plants covered with soft-branched down.

3 N. QUADRICÓRNE (D. C. syst. 2. p. 204.) pods 4-horned (f. 46. *a*.); leaves sinuately-toothed; down soft-branched. ⊙. H. Native of Siberia, between the rivers Volga and Kuma, or Kama. Erýsimum quadricórne, Steph. in Willd. spec. 3. p. 514. Deless. icon. sel. 2. t. 16.

Four-horned-podded Notoceras. Fl. May, Sept. Clt. 1817. Pl. ½ foot.

SECT.? III. MACROCERA'TIUM (from μακρος, *makros*, long, and κερας, *keras*, a horn; pods furnished with two long horns or points at the apex.) D. C. syst. 2. p. 204. prod. 1. p. 140. Siliques indehiscent, 2-horned. Seeds oblong, contrary to the dissepiment. Flowers white. Leaves pinnate. Perhaps a proper genus.

4 N.? CARDAMINEFÒLIUM (D. C. syst. 2. p. 205.) pods 2-horned; leaves smooth, pinnate. ⊙. H. Native of Pontus, in fields, at the Bosphorus, and in the Island of Cyprus. Deless. icon. sel. 2. t. 18. Lepídium cornùtum, Smith. fl. græc. t. 617. Andrzejówskia Cardámine, Rchb.—Buxb. cent. 1. p. 5. t. 9. f. 1. Stem simple or scarcely branched.

Lady's-Smock-leaved Notoceras. Fl. May, Aug. Pl. 1 foot.

Cult. These plants may be sown in the open border, in common garden soil; but, however, they answer better for rockwork. Not worth cultivating for ornament.

VI. BARBARE'A (anciently called herb of St. Barbara.) R. Br. in hort. kew. ed. 2. vol. 4. p. 109. D. C. syst. 2. p. 205. prod. 1. p. 140.

LIN. SYST. *Tetradynàmia*, *Siliquòsa*. Silique 4-sided; 2-edged; valves concave-keeled, awnless at the apex. Calyx equal at the base. Seeds disposed in one series. Herbs perennial, very smooth, with fibrous roots and erect stems. Racemes terminal, erect. Pedicels bractless. Flowers yellow.

1 B. VULGA'RIS (R. Br. in hort. kew. ed. 2. vol. 4. p. 109.) lower leaves lyrate, terminal lobe roundish; upper leaves obovate, toothed or pinnatifid; silique tetragonal, linear, pointed with the style. ♃. H. Native nearly throughout Europe, in moist waste places, about hedges and marshy meadows; plentiful in Britain, also in the islands of Unalaschka, Kamtschatka, and at the mouth of the Columbia river. Erýsimum Barbarèa, Lin. spec. 922. *Var. a*, and γ, Oed. fl. dan. t. 985. Smith. eng. bot. 443. Schkuhr. handb. no. 1834. t. 183. Schrank. mon. 2. t. 128. Erýsimum lyræfòlium, Stok. bot. mat. med. 3. p. 459.

Var. β, flore pleno (D. C. syst. 2. p. 206.) flowers double, yellow.

Var. γ, gràcilis (D. C. syst. 2. p. 206.) stem slender, sparingly branched; upper leaves somewhat cut. ♃. H. Native of Siberia and Kamtschatka. Perhaps a proper species. Plant intermediate between *B. vulgàris* and *B. præ'cox*.

The whole herb has a nauseous bitter taste, and is in some degree mucilaginous, and it is sometimes cultivated as a spring salad, but has nothing in flavour to recommend it. In Sweden they boil the leaves as kale. In Germany the plant is called *Winterkresse*, *Barbenkraut*, *Rapunzel*, *Seuskraut*, *Habichtskraut*, *Gebber Beyfuss* and *falsche Bumon*. In Denmark, *Vinterkars*. In Sweden, *Vinterkrass*. In France, *La Barbaree*, *l'herbe Saint Barbe*, *Roquette*, *l'herbe aux Charpentiers*. In Italy, *erba di Santa Barbara*, *Roquetta*. In Spain and Portugal, *Herva*, or *Herba de Santa Barbara* and *Ruqueta*.

Herb St. Barbara, *Common* Winter-Cress, or Yellow Rocked. Fl. May, Aug. Britain. Pl. 1 or 1¼ feet.

2 B. PRÆ'COX (R. Br. in hort. kew. ed. 2. vol. 4. p. 109.) lower leaves lyrate, terminal lobe ovate; upper leaves pinnate-parted; lobes linear-oblong, quite entire; silique linear-elongated, compressed 2-edged, crowned by a very short thickened style. ♃. H. Native of France, England, (most common in Devonshire) in watery, grassy places, or on the banks of ditches. Also of North America, on banks of rivers; abundant from Canada to Lat. 68°. Erýsimum præ'cox, Smith. fl. brit. 2. p. 707. eng. bot. t. 1129. Erýsimum tenuifòlium, Stok. bot. mat. med. 3. p. 460.

This plant is called in German, *Americanisher*; in French, *Cresson d'Amerique*, or *Roquette des Jardins*. In English, *American-Cress*, or *Black American-Cress*, *French-Cress*, or *Belle isle-Cress*. It is generally liked as a winter cress, and early spring salad, resembling in flavour the common water-cress, but rather more bitter. It is in demand in some places throughout the year. It is raised from seeds, and for every ten feet of drill, a quarter of an ounce will be requisite. Sow in a bed of light dry earth, rather in drills nine inches apart than broadcast. For winter and spring use make a sowing in the last fortnight of August or beginning of September, on a warm sheltered border. If wanted throughout summer sow every six weeks from March to August, giving a sunny or shaded situation, according to the advancement of the season. Water occasionally in hot dry weather. At the approach of winter, shelter the plants, by laying a few light twigs among them, so as not to interfere with their growth, and upon these a covering of fern, reeds, or dry litter. The plants being cut, or the outside leaves stripped off, shoot again for another gathering. Let a few choice plants, raised in spring, run to seed; which will be ready to gather before the decline of summer.

Early Winter-Cress. Fl. April, Oct. Britain. Pl. 1 to 1½ feet.

3 B. RUPI'COLA (Moris. stirp. sard. elench. fasc. 1. ex. bull. sc. July, 1828. p. 348.) plant tufted; lower leaves on long petioles, simple or somewhat lyrate, with the terminal lobe cordate-ovate; upper leaves deeply pinnatifid; siliques long, straight; petals obovately-spatulate. ♃. H. Native of Sardinia, upon rocks in the mountains. This species is very like *B. præ'cox*.

Rock Winter-Cress. Fl. Ap. Ju. Pl. 1 foot.

4 B. TAU'RICA (D. C. syst. 2. p. 207.) radical and lower leaves pinnatifidly-lyrate; terminal lobe and upper leaves ovate, toothed; pedicels spreading; pods ascending. ♃. H. Native of Tauria and Volhynia, in ditches and hedges; also in the Alps of Caucasus. Erýsimum arcuàtum, Presl. fl. cech. 138. Barbarèa arcuàta, Andrz. in. litt. and Rchb. Root creeping.

Taurian Winter-Cress. Fl. June, Sept. Clt. 1826. Pl. 1½ foot.

5 B. IBE'RICA (D. C. syst. 2. p. 208.) radical and lower leaves pinnate-parted, lyrate; lateral lobes ovate; terminal one cordate, entire; upper leaves bluntly-auricled at the base. ♃. H. Native of Siberia, at Achalgory; also of Podolia? Cheiránthus Ibéricus, Willd. enum. 2. p. 681. Cheiránthus lævigàtus, Willd. herb. Barbarèa stricta, Bess. enum. volh. no. 1551. Pods straight, pressed to the rachis.

Iberian Winter-Cress. Fl. May, Aug. Clt. 1816. Pl. ¾ foot.

6 B. PLANTAGI'NEA (D. C. syst. 2. p. 208.) lower leaves dentately-lyrate, lateral lobes tooth-like, terminal one large, somewhat cordate; upper leaves ovate; pods somewhat incurved. Native of the Levant, Deless. icon. sel. 2. t. 19. Sisýmbrium Barbarèa, Lin. spec. 921. Very like *B. vulgàris*, but

it is larger in all its parts. Radical leaves lyrate, emulating those of *Dorònicum plantagíneum*.

Plantain-leaved Winter-Cress. Fl. May, Aug. Clt. 1799. Pl. 1 to 2 feet.

7 B. integrifòlia (D. C. syst. 2. p. 208.) radical leaves entire, oblong, stalked; stem ones auriculately-stem-clasping. ♃. H. Native of Cappadocia. Pods unknown, but from the habit of the plant it appears to be related to *Barbarèa*.

Entire-leaved Winter-Cress. Pl. ½ foot.

Cult. None of these plants are worth cultivating for ornament, except the double flowering variety of *Barbarèa vulgàris*, commonly called *Double-yellow Rocket*, which is certainly a very ornamental plant for flower borders; this may be increased by cuttings, suckers, or dividing the plants at the root. The *B. præ'cox* is cultivated in gardens as a spring salad, and this as well as the rest of the species are easily increased by seed, or dividing the plants at the root. They thrive best in a damp or moist situation, in any kind of soil.

VII. STEVE'NIA (in honour of Christian Steven, Counsellor of the university of Moscow, author of a paper on some new plants from Caucasus, published in Lin. Transactions, vol. xi.) Adams, et Fisch. in mem. loc. nat. mosc. 5. p. 84. D. C. syst. 2. p. 209. prod. 1. p. 141.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique oblong, few-seeded, narrowest between the seeds (f. 46. *b.*); valves flat, somewhat torulose. Calyx bisaccate at the base. Herbs greyish-velvety from branched down. Stems erect, cylindrical, more or less branched, rarely simple. Leaves oblong, entire. Flowers white or purplish. Pods erect pubescent. Racemes terminal: pedicels bractless.

1 S. alyssoìdes (Adams, et Fisch. l. c. 5. p. 84.) stem somewhat ascendant, much branched; pods shorter than the pedicels. ⊙. H. Native of Siberia, in the mountains about Werkhojana, and among stones on the banks of the river Lena, below Shigansk. Flowers white; petals oval-oblong, entire. Deless. icon. sel. 2. t. 20. The whole plant is covered with stellate hairs.

Alyssum-like Stevenia. Fl. Jun. Aug. Clt. 1823. Pl. ¾ foot.

2 S. cheranthoìdes (D. C. syst. 2. p. 210.) stem strictly erect, simple or sparingly branched; pods longer than the pedicels. ♂. H. Native of Ulterior Siberia. Altaia, on a stony hill on the western side of the town, called Gazimour. Deless. icon. sel. 2. t. 21. Sisýmbrium tomentòsum, Stev. in litt. Cheiránthus salìnus, Willd. herb. Root hard, rather woody. Flowers varying from white to purplish.

Var. β, A'rabis incarnàta, Pall. in herb. Lamb. Differs from the species in having longer leaves, which are nearly an inch long, and in having a more branched stem.

Wall-flower-like Stevenia. Fl. Jun. Aug. Clt. 1823. Pl. ½ ft.

Cult. The species of this genus answer well for ornamenting rock-work, where the seeds should be sown in the spring, but not sooner than the end of March.

VIII. BRA'YA (in honour of Gabriel, Count Bray, a Bavarian nobleman and botanist.) Sternb. et Hopp. diss. with a figure. ex Gœtt. anzeig. Jan. 1827. p. 155. D. C. syst. 2. p. 210. prod. 1. p. 141.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique oblong, somewhat cylindrical; with flattish valves and a sessile stigma. Seeds few, ovate. Calyx equal at the base.—Small herbs with the habit of *A'rabis cærùlea*, villous with branched down. Leaves linear smooth; radical ones crowded, stem ones few. Racemes terminal, at first corymbose, afterwards lengthening out. Pedicels shorter than the calyx. Flowers purplish.

1 B. alpìna (Sternb. et. Hopp. l. c.) leaves spatulately-linear, entire; fructiferous, racemes short. ♃. H. Native of Upper Carinthia and Salisburgh, in the Alps. Deless. icon. sel. 2. t. 22.

Alpine Braya. Fl. April, May. Clt. 1821. Pl. 1 inch.

2 B. glabe'lla (Richard, in Frankl. narr, journ. p. 743.) leaves linear, for the most part remotely toothed; fructiferous, racemes loose, elongated. ♃. H. Native of Copper mountains, from Point Lake to the Arctic Sea. Stems erect, ribbed. Pods torulose.

Smooth Braya. Fl. April, June. Pl. 3 inches.

3 B. pilòsa (Hook. fl. bor. amer. t. 17. f. A.) stem woody at the base; leaves lanceolate, pilose rosulate, entire; scapes naked; racemes crowded many-flowered, at length elongated; stigma slightly 2-lobed. ♃. H. Native of North America, perhaps on the Rocky Mountains. Every part of the plant appears to be more or less pilose. A beautiful tufted plant.

Pilose Braya. Fl. April, June. Pl. ½ foot.

Cult. The species of this genus are pretty little alpine plants; they should be kept in pots of a small size, which should be well drained with potsherds, and treated as other alpine plants. The mould which answers them best, is an equal mixture of sand, loam, and peat. They may be increased by dividing the plants at the root, or by seeds. If they would stand the winter unsheltered, they would be a desirable addition to rock-plants.

IX. TURRI'TIS (from *turris*, a tower; in allusion to the disposition of the foliage on the stems, which gives to them a pyramidal form; from the same reason the plants are called *Tower-Mustard.*) Dill. nov. gen. in pl. giess. p. 120. t. 6. Gært. fruct. 2. p. 297. t. 143. D. C. syst. 2. p. 211. prod. 1. p. 141.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique linear, with flat valves. Seeds in two rows in each cell. Herbs erect, adult ones usually smooth, but the younger ones are scabrous. Cauline leaves clasping the stem, somewhat sagittate, radical ones toothed, drawn out along the petiole. Racemes elongated. Pedicels bractless. Flowers white, or sulphur-coloured.

1 T. gla'bra (Lin. spec. 930.) erect; radical leaves stalked, toothed, pilose; cauline ones broad-lanceolate, sagittate, clasping the stem, quite entire, smooth glaucous; pods narrow-linear; erect, six times longer than the pedicels; petals hardly longer than the calyx. ♂. H. Native throughout Europe in dry exposed situations: in Britain, on banks by road sides, in a dry gravelly soil, rare in Scotland; also of North America, from Hudson's Bay to the Rocky Mountains, and as far north as lat. 64°. Smith, eng. bot. t. 777. Fl. dan. t. 809. Schkuhr. handb. 2. no. 1859. t. 185. Stok. bot. mat. med. 3. p. 464. A'rabis perfoliàta, Lam. dict. 1. p. 219. A'rabis glàbra, Weim. cat. hort. dorp. 1810. p. 18. Sisýmbrium simplicíssimum, Lapeyr. abr. 382. Flowers pale, sulpher-coloured.

Var. β, ramòsa (D. C. syst. 2. p. 212.) Turrìtis màjor, Clus. hist. 2. p. 126. f. 2.

Smooth or Common Tower Mustard. Fl. May, June. Britain. Pl. 2 or 3 feet.

2 T. salsuginòsa (D. C. syst. 2. p. 212.) leaves smooth, lower ones toothed, cauline ones entire, clasping the stem; pods erectish, four times longer than the pedicels. ⊙. H. Native of Siberia. Very common about salt lakes, and on the gravelly banks of ditches, especially at the lakes Irtish and Baical, and in Dahuria, beyond the river Kur. Sisýmbrium salsugíneum, Pall. itin. 2. append. no. 114. t. V. ed. gall. min. 8. p. 342. no. 348. t. 64. Flowers small white. Seeds yellow.

Brine Tower Mustard. Fl. May, Jun. Clt. 1819. Pl. 2 ft.

3 T. hispídula (D. C. syst. 2. p. 213.) leaves scabrous with flocky, down, cauline ones clasping the stem, oblong-lanceolate, and somewhat serrated; pods erectish, somewhat scabrous, three times longer than the pedicel. ⊙. H. Native of South Ame-

rica, in the kingdom of Quito, in the mountain Cotopaxi, at the height of 6600 feet. A'rabis andícola, H. B. et Kth. nov. spec. amer. 5 p. 81. Petals white, linear, blunt. Seeds innumerable, small, brown.

Hispidish Tower-Mustard. Pl. 2 feet.

4 T. móllis (Hook. fl. bor. amer. p. 40.) erect; lower leaves spatulate, sinuately-toothed, upper ones lanceolate, broadly-sagittate, quite entire, all as well as the stem and pedicels covered with numerous spreading soft hairs; siliques linear-elongated, erect. ⊙. H. Native of North America, on the shores of the Arctic Sea. Flowers white.

Soft Tower-Mustard. Fl. May, Jul. Clt. 1826. Pl. 1 foot.

5 T. strícta (Graham in edinb. phil. journ. July, 1829. p. 7. Hook. l. c.) erect, smooth; leaves lanceolate, radical ones stalked, toothed, cauline ones sagittate, half stem-clasping, a little toothed, siliques linear-elongated, erect. ⊙. H. Native of North America, in prairies of the Rocky Mountains and about Fort Vancouver, on the Columbia. Flowers pure white.

Straight-podded Tower-Mustard. Fl. Jun. Jul. Clt. 1826. Pl. ½ to 1 foot.

6 T. pa'tula (Graham, in edin. phil. journ. July, 1829. p. 7. Hook. l. c. but not of Ehrh. or Willd.) erect; leaves lanceolate, radical ones stalked, toothed, cauline ones sagittate, half-stem-clasping, smooth, and a little toothed; flowers spreading, as well as linear-elongated siliques. ⊙. H. Native of North America. Flowers rather large, of a beautiful rose-purple colour.

Var. α, subpubéscens; radical leaves sparingly pubescent. Native from Canada to Lat. 68°., and from Hudson's Bay to the Rocky Mountains, and even to Fort Vancouver, on the Columbia.

Var. β, incàna; radical leaves hoary with pubescence. Native on the highest summits of the Rocky Mountains.

Spreading Tower-Mustard. Fl. Ju. July. Clt. 1826. Pl. 1 ft.

7 T. retrofra'cta (Hook. flor. bor. amer. p. 41.) plant erect, hoary-pubescent, or smooth; leaves lanceolate, radical ones stalked-toothed, cauline ones sagittate, half-stem-clasping, smooth, a little toothed; flowers drooping; siliques linear, elongated, and are, as well as the pedicels, bent backwards. ⊙. H. Native of North America, from Hudson's Bay to the Rocky Mountains, and from Canada to Lat. 68°., at the Mackenzie River. A'rabis retrofrácta, Graham, in edin. phil. journ. July, 1829. Flowers white, with a faint purplish tinge.

Retrofracted pedicelled Tower-Mustard. Fl. Ju. July. Clt. 1826. Pl. 1 foot.

8 T. diffu'sa (Hook. fl. bor. amer. p. 41.) plant quite smooth, glaucous; stems branched, diffuse; radical leaves spatulate, almost entire, cauline ones sagittate, hardly toothed; siliques linear, spreading, twice as long as the pedicels. ⊙. H. Native of North America on the shores of the Arctic Sea. Flowers small, and probably white. This may prove to be a species of *A'rabis*.

Diffuse Tower-Mustard. Pl. diffuse.

Cult. As the species of this genus are all weedy-like plants, they are only fit for the arrangements in botanical gardens. They only require to be sown in the open border; or on rock-work, in any kind of soil.

X. A'RABIS (originally from Arabia, but this name is not very precise, as the species of the genus are found in many parts of the world, in arid, stony, and sandy places, in cold and mild climates). Lin. gen. no. 818. Lam. ill. t. 563. D. C. syst. 2. p. 213. prod. 1. p. 142.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique linear, with flat, 1-nerved valves. Seeds oval, or orbicular, compressed, in 1 row in each cell. Cotyledons flat. Herbs annual or perennial, more or less branched. Radical leaves usually stalked, cauline ones sessile or clasping the stem, entire or toothed, rarely lobed. Hairs variable, but usually those on the stems are simple, and those on the leaves are either bifid or trifid. Racemes terminal; pedicels bractless. Flowers white, very rarely red. The genus is called *Wall-Cress* in English, because the species usually grow in stony places or on walls.

Sect. I. Aloma'tium (from α, priv. and λωμα, *loma*, fringe, in allusion to the seeds being destitute of a wing round their edge, or with a very narrow one). D. C. syst. 2. p. 214. prod. 1. p. 142. Seeds not edged, or girded with a very narrow wing.

§ 1. *Obovatipétala. Cauline leaves cordate, clasping the stem. Limb of petals obovate, spreading, distinct from the claw.*

1 A. ve'rna (R. Br. in hort. kew, ed. 2. vol. 4. p. 105.) cauline leaves cordate, clasping the stem, toothed, scabrous with 3-parted hairs; pedicels shorter than the calyx; stigma somewhat emarginate. ⊙. H. Native throughout the south of Europe in corn fields and gravelly places. Hésperis vérna, Lin. spec. 928. Smith, fl. græc. 641. A'rabis violàcea, Mœnch. meth. 259. Turritis purpùrea, Lam. fl. fr. 2. p. 491.—Mor. hist. 2. p. 241. sect. 3. t. 8. f. 5. Petals small, purple, with a white claw.

Vernal Wall-Cress. Fl. May, June. Clt. 1710. Pl. ¼ to ¾ ft.

2 A. ro'sea (D. C. syst. 2. p. 215.) cauline leaves oblong, somewhat cordate and somewhat stem-clasping, scabrous with branched hairs; pedicels longer than the calyx; stigma apiculated. ♂. H. Native of Calabria about Cozenza. Petals rose-purple, oblong, somewhat wedge-shaped, double the length of the calyx. Deless. icon. sel. 2. t. 23.

Rose-coloured-flowered Wall-Cress. Fl. May, July. Pl. 1 ft.

3 A. visco'sa (D. C. syst. 2. p. 216.) leaves distantly-toothed, scabrous with branched hairs; radical leaves stalked, obovate-oblong, very blunt, cauline ones ovate-cordate, clasping the stem; pedicels equal in length with the calyx, which is hairy. ♃. H. Native of the north of Persia on the Alps. Cardámine viscòsa, Gmel. in herb. Pall. A tufted plant, with white flowers.

Clammy Wall-Cress. Fl. April, May. Pl. ½ foot.

4 A. alpi'na (Lin. spec, 928.) leaves many-toothed, lanceolate, acute, villous with branched hairs, radical ones somewhat stalked, cauline ones cordate, clasping the stem; pedicels longer than the calyx, which is smoothish. ♃. H. Native of Europe on rocks and among stones in calcareous mountains, in sunny situations; Spain, Lapland, Greenland, Switzerland, Pyrenees, also Madeira and Labrador, &c. Curt. bot. mag. t. 226. A tufted plant, with white flowers.

Var. β, Clusiàna (Schrank, fl. mon. 2. p. 125.) leaves more sparingly and more bluntly toothed. Clus. hist. 2. p. 125. f. 2.

Var. γ, nàna (Baugm. trans. 2. p. 263.) A dwarfer plant.

Alpine Wall-Cress. Fl. March, May. Clt. 1596. Pl. ½ ft.

5 A. a'lbida (Stev. in cat. hort. gor. 1812. p. 51.) leaves few-toothed, hoary, or downy with branched hairs; radical leaves obovate-oblong, cauline ones cordately-sagittate, clasping the stem; pedicels longer than the calyx. ♃. H. Native of Tauria and Caucasus on rocks. Jacq. fil. ecl. 1. p. 105. t. 71. A. Caucásica, Willd. enum. suppl. p. 45. Schrank. hort. mon. t. 24. A. alpìna, Pall. ined. Cheiránthus móllis, Horn. hort. hafn. p. 615. Very like *A. alpìna*, but easily distinguished from it by its larger flowers and few-toothed leaves. A tufted plant with white flowers.

White-leaved Wall-Cress. Fl. Jan. May. Clt. 1798. Pl. ¾ ft.

6 A. undula'ta (Link. enum. hort. berl. 2. p. 161.) stem erect, and is hairy as well as the oblong-toothed waved leaves; pods spreading; style the breadth of the pod. ♃. H. Native of the south of Europe. Like *A. álbida*, but the whole plant is

smaller in all its parts, and the leaves are less hoary. A tufted rather straggling plant with white flowers.

Waved-leaved Wall-Cress. Fl. May, Aug. Pl. ½ foot.

7 A. Billardie'rii (D. C. syst. 2. p. 218.) leaves few-toothed, hoary or downy with branched hairs, lower ones obovately-wedge-shaped, upper ones oblong and clasping the stem; pedicels longer than the calyx; pods, when nearly ripe, spreading. ♃? H. Native of Syria near Damascus, on a mountain called Dgebel-cher. A tufted plant with white flowers. Like *A. alpìna*. Pods smooth, an inch and a half long.

La Billardiere's Wall-Cress. Pl. ¼ foot.

8 A. brevifo'lia (D. C. syst. 2. p. 218.) leaves with a few blunt teeth, downy with branched hairs, radical ones obovate, stem ones cordately-sagittate, ovate, nearly entire; pedicels longer than the calyx; pods spreading, rather curved. ♃. H. Native of Syria. A tufted plant, with white flowers.

Short-leaved Wall-Cress. Pl. ½ foot.

9 A. thyrsoi'dea (Smith, fl. græc. t. 642.) leaves obovate, bluntly-toothed, hoary with branched hairs, cauline ones clasping the stem; racemes capitate; pedicels rather shorter than the calyx; pods curved, ascendant. ♃. H. Native of Bithynia on the top of Mount Olympus. A tufted plant with white flowers.

Thyrse-flowered Wall-Cress. Pl. ½ foot.

10 A. longifo'lia (D. C. syst. 2. p. 219.) leaves toothed, hoary with branched hairs, lower ones obovately-oblong, on long stalks, cauline ones oblong, somewhat stem-clasping; pedicels longer than the calyx. ♃. H. Native of Persia. Very like *A. álbida*, but distinct. Deless. icon. sel. 2. t. 25. A tufted plant, with white flowers.

Long-leaved Wall-Cress. Fl. May, Aug. Clt. 1820. Pl. 1 ft.

11 A. mo'llis (Stev. mem. soc. nat. mosc. 3. p. 270.) leaves grossly-toothed, somewhat pubescent with small stellate hairs, lower ones on long petioles, cordate-roundish, cauline ones ovate-cordate, clasping the stem. Native of Caucasus on shaded rocks. Having the appearance of *Alliària officinàlis*. Flowers white.

Soft Wall-Cress. Fl. May, July. Clt. 1823. Pl. 2 feet.

12 A. toxophy'lla (Bieb. fl. taur. suppl. p. 448.) leaves somewhat pubescent with small stellate hairs, radical ones oblong, stalked, rather sinuately-toothed, stem ones sagittate-lanceolate, quite entire; pedicels longer than the calyx. ♂. H. Native of sunny fields on the lower Volga, not far from the colony of Sarepta, on hills about Catherinoslaw, also in the desert of Issim. Sisýmbrium salsugíneum, Schlecht. in herb. Willd. A very distinct and elegant species. Flowers white, about the size of those of *A. alpìna*.

Bow-leaved Wall-Cress. Pl. 1 foot.

§ 2. *Oblongipétala. Cauline leaves cordate, clasping the stem. Petals oblong, or linear-cuneated, erect.*

13 A. auricula'ta (Lam. dict. 1. p. 219.) leaves somewhat toothed, scabrous with branched hairs, lower ones oval, drawn out at the base into the petiole; stem ones bluntly cordate-auriculate; pedicels hardly longer than the calyx; pods smooth or pubescent.

Var. α, A. áspera (All. ped. auct. p. 18. t. 2. f. 2.). Native of Piedmont, Occitania, Provence, &c. on hills in sandy or gravelly soil.

Var. β, A. erécta (Vill. dauph. 3. p. 319. t. 37.). Native of Spain in the same kind of situations as the rest.

Var. γ, Turrìtis pátula, (Ehrh. beitr. 7. p. 259? Waldst. et Kit. hung. 1. p. 59. t. 59.) Native of Hungary, &c.

Var. δ, dasycárpa (Andrz. in litt.) pods pubescent. ⊙. H. Native of Thuringia and South Podolia. A. récta, Baugm. fl. trans. 2. p. 267. Pods pubescent, Wallr. All the above varieties have been considered by some botanists sufficient to constitute distinct species, but they agree in habit and character, and can scarcely be considered even varieties. Petals white, oblong.

Ear-leaved Wall-Cress. Fl. May. Cult. 1805. Pl. ¾ foot.

14 A. saxa'tilis (All. ped. no. 973.) leaves somewhat toothed, scabrous with branched hairs, lower leaves oval, drawn out a little along the petiole, stem ones acutely-cordate-auriculate; pedicels at last 4-times longer than the calyx. ♂. H. Native among rocks in the lower mountains of Provence, Dauphiny, Savoy, Vallais, and Piedmont. A. nova, spec. Vill. dauph. 3. p. 319. t. 37. Petals white.

Var. β, Tourrette Cantonénse, (Reyn. mem. swiss. 1. p. 168.) Plant a little more hoary than the species.

Stone Wall-Cress. Fl. May, 1805. Pl. ¾ foot.

15 A. crispa'ta (Willd. enum. 684.) leaves acutely-toothed, scabrous with branched hairs, lanceolate, clasping the stem, waved, radical ones drawn out along the petiole; pedicels longer than the calyx; pods spreading. ♃. H. Native of Carniola. A tufted plant with obovate-oblong, blunt, white petals.

Crisp-leaved Wall-Cress. Fl. May. Clt. 1816. Pl. ½ foot.

16 A. sagitta'ta (D. C. fl. fr. suppl. 592. syst. 2. p. 221.) leaves a little toothed, scabrous with branched hairs, radical ones ovate or oblong, drawn out along the petiole, stem ones lanceolate, sagittately-cordate; pedicels length of calyx; pods strictly erect. ♂. H. Native throughout the temperate parts of the northern hemisphere in rugged places, among stones, &c. This is a very variable plant, even in the same situation.

Var. α, Gerardiàna (D. C. syst. 2. p. 222.) leaves scabrous, stem ones drawn out into auricles at the base. ♂. H. Native of the south of Europe, particularly in the south of France, Italy, &c.

Var. β, subglabràta (D. C. syst. l. c.) leaves nearly smooth, stem ones auriculately-sagittate; racemes compound. ⊙. H. Native of Vascony. Flowers white.

Var. γ, ovàta (D. C. syst. l. c.) leaves scabrous, radical ones ovate toothed, cauline ones clasping the stem. ♂. H. Native of North America. A. ovàta, Poir. suppl. 5. p. 557.

Var. δ, oblongàta (D. C. l. c.) leaves scabrous, radical ones ovate-oblong, toothed, with the petiole shorter than the leaf, cauline ones sagittate, clasping the stem. ♂. H. Native of North America, Turrìtis oblongàta, Raf. amer. monthl. mag. 2. p. 44.

Var. ε, longisiliquòsa (D. C. syst. l. c.) pods 10-times longer than the pedicels. A. longisiliquòsa, Wallr. sched. p. 359.

Arrow-leaved Wall-Cress. Fl. May, Jul. Clt.? Pl. ¾ ft.

17 A. hirsu'ta (Scop. carn. ed. 2. n. 835.) leaves toothed, scabrous with branched hairs, radical ones ovate-oblong, drawn out along the petiole, stem ones ovate or lanceolate, sagittate; pedicels length of the calyx; pods numerous, erect. ♂. H. Native of middle and northern Europe in fields and rugged places, viz. Germany and Austria, also of North America from Hudson's Bay to the Rocky Mountains, and at the Columbia river on the north-west coast and from Canada to lat. 68°, as well as in the island of Unalaschka and Kamtschatka; in England, Sussex, in Switham Botton near Croydon, on the walls of Lakenham church-yard near Norwich, also near Bury, &c. Frequent on dry rocks in Scotland, Schrank. fl. mon. 3. t. 248. Turrìtis hirsùta, Lin. spec. 930. Jacq. icon. rar. 1. t. 126. Smith, engl. bot. t. 587. Schkuhr. handb. 2. t. 185. Fl. dan. t. 1040. A'rabis montàna, Lam. dict. 1. p. 219. Turrìtis ovàta, Pursh, fl. amer. sept. 2. p. 438. Turrìtis sagittàta, Richards. in Frankl. 1st journ. ed. 2. app. p. 26. Scarcely distinct from *A. sagittàta*, unless that the leaves are not sagittate at the base. Flowers white.

Hairy Wall-Cress. Fl. May, July. Britain. Pl. ¾ or 1 ft.

18 A. stenope'tala (Willd. enum. suppl. 46.) leaves hispid, grossly toothed, radical ones oblong-lanceolate, stalked, cauline

ones ovate, clasping the stem ; petals erect, linear, twice the length of the calyx. ♂. H. Native of Kamtschatka. Horn. hafn. 2. p. 619. A. hirsùta, var. Cham. et Schlech. in Linnæa 1. p. 15. Petals linear, blunt, white. Pods very upright.

Narrow-petalled Wall-Cress. Fl. Jul. Clt. 1826. Pl. ¾ ft.

19 A. curtisi'liqua (D. C. syst. 2. p. 223.) leaves oblong, nearly entire, ciliated with simple hairs, radical ones drawn out along the petiole ; cauline ones clasping the stem a little ; pedicels length of calyx ; pods erect. ♂. H. Native of Scania. Turrìtis curtisíliqua, Fries ex Horn. herb. Flowers white.

Short-podded Wall-Cress. Fl. May, Jul. Clt. 1820. Pl. ¾ ft.

§ 3. *Sessilifòlia. Stem leaves sessile ; petals oblong, or linear-cuneated, erect.*

20 A. Allio'nii (D. C. fl. fr. 4. p. 676.) leaves smooth, radical ones ovate-oblong, somewhat toothed, drawn out at the base, stem ones sessile, ovate, serrated ; pedicels rather longer than the calyx ; pods erect. ♃. H. Native of Piedmont in humid meadows. Turrìtis stricta, All. auct. p. 18. T. nemorénsis, Wulf. Flowers white. Calyx pale, at last spreading a little. Stem simple.

Allioni's Wall-Cress. Fl. May, June. Clt. 1804. Pl. 1 to 2 ft.

21 A. mura'lis (Bertol. dec. ital. 2. p. 37.) leaves covered with branched hairs, radical ones spatulate, bluntly-toothed, stem ones ovate, acutely toothed ; racemes straight ; pedicels at last double the length of the calyx. ♃. H. Native of Etruria. Cevennes, Savoy and Vallais on rocky mountains. A'rabis hùmilis, Schleich. pl. helv. A tufted plant, with white flowers. Petals oblong.

Wall-Cress. Fl. May, June. Clt. 1820. Pl. ½ foot.

22 A. stri'cta (Huds. angl. 292.) leaves ciliated-scabrous, with bifid hairs, radical ones oblong, tapering to the base, somewhat lyrately-pinnatifid, stem ones oblong, almost entire ; racemes straight ; pedicels hardly longer than the calyx ; pods elongated, erect. ♃. H. Native of the temperate parts of Europe on calcareous rocks. In England on lime-stone rocks, particularly on St. Vincent's Rocks near Bristol, and on the south side of the Avon about a mile below the hot wells, but sparingly. It is also said to be a native of Labrador. Smith, engl. bot. t. 614. Turrìtis Ràyi, Vill. dauph. 3. p. 326. t. 38. A. híspida, Ait. hort. kew. ed. 1. vol. 2. p. 400. but not of Lin. A. hírta, Lam. dict. 1. p. 220. A. montàna, Bern. A tufted plant, with white flowers.

Straight Wall-Cress. Fl. May, June. Britain. Pl. ¼ to ½ ft.

23 A. cilia'ta (R. Br. in hort. kew, ed. 2. vol. 4. p. 107.) leaves somewhat toothed, smooth, ciliated, radical ones nearly sessile, oval-oblong, stem ones oblong ; racemes straight ; pedicels length of calyx. ♂. H. Native of the Alps in the southern parts of Europe, particularly the Pyrenees. In Ireland by the sea-side at Rinville, Cunnamara, &c. Turrìtis alpìna, Lin. syst. veg. ed. 13. p. 505. Willd. spec. 3. p. 545. Smith, engl. bot. t. 1746. Turrìtis ciliàta, Willd. spec. 3. p. 544. A. Madònia, Presl. Closely allied to *A. stricta,* but differs from it in the root being biennial, not perennial. Flowers white.

Ciliated-leaved Wall-Cress. Fl. Jul. Aug. Ireland. Pl. ¼ ft.

24 A. inca'na (Roth. cat. bot. 1. p. 79.) leaves all sessile, and somewhat toothed, hoary with branched hairs, radical ones obovate-oblong, stem ones oblong ; racemes erect ; pedicels at least twice as long as the calyx. ♂. H. Native of dry fields in Switzerland and France. Turrìtis mìnor, Schleich. pl. helv. Petals white, oblong, double the length of the calyx.

Hoary Wall-Cress. Fl. May, June. Clt. 1816. Pl. ¼ foot.

25 A. Thalia'na (Lin. spec. 926.) leaves pilose, a little toothed, radical ones stalked, ovate-oblong ; stem branched ; pods ascendant ; pedicels much longer than the calyx. ⊙. H. Native of Europe from Spain to Petersburgh, and from England to Greece ; also in Tauria, Persia, Dauria, and Teneriffe. On walls, dry banks, cottage roofs, and dry sandy ground ; plentiful in Britain. Smith, engl. bot. t. 901. Vahl. fl. dan. t. 1106. Curt. lond. 2. t. 49. Schkuhr. handb. 2. t. 195. A. ramòsa, Lam. fl. fr. 2. p. 510. Sisym. Thaliànum Monnard. Flowers white.

Var. β. A. parviflòra, Raf. amer. month. mag. 1. p. 43. 1819. Jan. p. 194. ⊙. H. Native of North America, in dry fields and on old walls, from New England to Virginia. Petals emarginate, hardly longer than the calyx. A'rabis Thaliàna Pursh.

Thalius's Wall-Cress. Fl. April, Jul. Britain. Pl. ¼ to 1 ft.

26 A. serpyllifòlia (Vill. dauph. 3. p. 318. t. 37.) leaves almost entire, scabrous with branched hairs, radical and stem ones oval, narrowed a little at the base ; racemes rather loose ; pedicels length of calyx. ♂. H. Native of the Alps of Provence, Dauphiny, Vallais, Pyrenees, on rocky parts of mountains. Flowers white.

Wild-Thyme-leaved Wall-Cress. Fl. June, Jul. Clt. 1820. Pl. ¼ to ½ foot.

27 A. spatula'ta (D. C. syst. 2. p. 227.) leaves entire, rough, lower ones spatulate, narrowed into the petiole, upper ones roundish, small ; racemes short ; pedicels length of calyx ; pods erect. ⊙. H. Native of Buenos Ayres, in fields, and in the suburbs of Monte-Video. Petals white, small, scarcely longer than the calyx. Sisýmbrium spatulàtum, Poir. dict. 7. p. 224.

Spatulate-leaved Wall-Cress. Fl. Aug. Pl. ¼ foot.

28 A.? Commersònii (D. C. syst. 2. p. 228.) leaves almost entire, ciliated, radical ones ovate-spatulate, stalked, stem ones scarcely any ; racemes short ; pedicels longer than the calyx. ⊙.? H. Native of Buenos Ayres. Sisýmbrium bellidifòlium, Poir. dict. 7. p. 220. Petals white, hardly longer than the calyx. Seed small, brownish.

Commerson's Wall-Cress. Pl. ¼ foot.

29 A. pube'scens (Poir. suppl. 1. p. 413.) leaves pubescent, deeply-toothed, radical ones spatulately-lanceolate, narrowed into the petiole, stem ones lanceolate ; pedicels very short ; pods pubescent, erect. ♂.? H. Native of Algiers on the mountains. Turrìtis pubéscens, Desf. alt. 2. p. 92. t. 163. Petals linear, white, double the length of the calyx.

Pubescent Wall-Cress. Fl. May, June. Pl. 1 to 2 feet.

30 A. pa'rvula (Dufour, in D. C. syst. 2. p. 228.) leaves pubescent, a little toothed, lower ones obovate, stem ones ovate ; pedicels very short ; pods pubescent, spreading a little. ⊙. H. Native of Navarre and near Tudela in Spain. A. Römeriàna, Andrz. ined. Petals, when dry, pale yellow.

Small Wall-Cress. Pl. ¼ foot.

§ 4. *Obovatipétila. Cauline leaves sessile or stalked; limb of petals obovate or cuneated, distinct from the claw.*

31 A. procu'rrens (Waldst. et Kit. hung. 2. p. 154. t. 144.) leaves ovate, quite entire, smooth, ciliated with 2-parted hairs, radical ones narrowed into the petiole, stem ones sessile, pointed ; stolons creeping ; pods spreading. ♃. H. Native of Bosnia and Servia on shaded limestone rocks. Nastúrtium procúrrens, Andrz. ined. A creeping tufted plant. Petals white, double the length of the calyx.

Procurrent Wall-Cress. Fl. May, June. Clt. 1819. Pl. ¾ foot.

32 A. præ'cox (Waldst. et Kit. ined. ex Willd. enum. p. 684.) leaves oblong, acute, sessile, quite entire, smooth ; stem strigose ; stolons creeping ; pods spreading. ♃. H. Native of Hungary. A creeping tufted plant. Petals obovately-cuneated, white, double the length of the calyx.

Early-flowering Wall-Cress. Fl. Ap. Ju. Clt. 1819. Pl. ½ to ¾ ft.

33 A. Schiwereckia'na (Andrz. in litt. D. C. prod. 1. p. 145.) leaves entire, scabrous with crowded branched hairs, radical ones rosulate, obovate, stem ones oblong, erect, sessile ;

stems roughish; pods erect, smooth. ♃. H. Native of Austria. Like *A. scàbra* in habit, but the pods are one-half narrower and the seeds are hardly margined. Flowers white.

Schwereck's Wall-Cress. Fl. May, June. Clt. 1824. Pl. ½ ft.

34 A. petræ'a (Lam. dict. 1. p. 221.) leaves smooth, ciliated or scabrous with simple or bifid hairs; radical ones on longish stalks, entire, toothed, or lyrate, stem ones oblong-linear, entire or toothed; stem usually branched; pods erectly-spreading; stigma capitate; petals obovate, unguiculate. ♃. H. Native of many parts of Europe, also in the island of Unalaschka.

Var. α, Crantziana (D. C. syst. 2. p. 230.) pod long. A. Crantziàna, Ehrh. herb. 78. A. Thaliàna, Crantz. austr. 1. p. 39. t. 3. f. 2. Native of Austria and Transylvania in fissures of rocks and among stones. Flowers white or purplish.

Var. β, híspida (D. C. l. c.) Sisýmbrium arenòsum, Lin. fl. suec. 233. not of his spec. pl. Oed. fl. dan. t. 386. A'rabis híspida, Lin. fil. suppl. 298. Welch Rocket Cress, Pet. herb. brit. t. 50. f. 3. Cardámine petræ'a, Huds. ang. 293. Native of Scotland and Wales on mountains in fissures of rocks and among stones.

Var. γ, hastulàta (D. C. l. c.) Cardámine hastulàta, Smith, engl. bot. t. 409. Horn. fl. dan. 1462. Native of Britain and Norway, in the fissures of rocks and among stones.

Var. δ, Færoénsis (D. C. l. c.) Cardámine Færoénsis, Horn. fl. dan. 1382. Native of Færo island in the fissures of rocks and among stones.

Var. ε, runcinàta (D. C. l. c.) A. petræ'a, Lam. dict. 1. p. 22. Cardámine petræ'a, Lin. spec. 913. A. runcinàta, Lam. dict. 1. p. 222. Native of Sweden and the Pyrenees, in fissures of rocks and among stones.

Little tufted plants with white flowers.

Alpine *Rock* or Wall-Cress. Fl. June, Jul. Britain. Pl. ¼ foot.

35 A. ambi'gua (D. C. syst. 2. p. 231.) leaves smoothish, radical ones sinuately-lyrate, middle ones oblong-oval, toothed, upper ones oblong-linear, entire; stem almost simple; pods rather erect. ♃. H. Sisýmbrium Tilèsii, Led. in mem. acad. petersb. 5. 1815. p. 548. Flowers white or purplish.

Var. α, glàbra (D. C. syst. 2. p. 231.) leaves and stems smooth. Native of Kamtschatka.

Var. β, intermèdia (D. C. l. c.) leaves smooth; stem hispid at the base. Native of Unalaschka in sandy and grassy places.

Var. γ, scàbra (D. C. l. c.) leaves pilose, scabrous; stem smooth. Native of Siberia.

Ambiguous Wall-Cress. Fl. May, June. Clt. 1824. Pl. ½ foot.

36 A. lyra'ta (Lin. spec. 926.) radical leaves lyrately-pinnatifid, smooth or ciliated, stem ones linear; stem hispid at the base, a little branched; pedicels spreading a little; pods erect. ♃. H. Native of North America in cultivated fields and dry hills, particularly on rocks in Pennsylvania about West Chester, and from thence to Canada, extending westward to the Rocky Mountains, and to the islands of the Polar seas. A'rabis petræ'a, Hook. fl. bor. amer. p. 42. Flowers white.

β, A. Kamtschática (Fisch. in litt.) flowers smaller; petals twice the length of the calyx, not thrice its length, as in the species, and the pods are longer and thicker.

Lyrate-leaved Wall-Cress. Fl. May, Ju. Clt. 1823. Pl. ½ foot.

37 A. areno'sa (Scop. fl. carn. ed. 2. no. 857. t. 40.) leaves villose with forked hairs, radical ones lyrately-pinnatifid, stem ones deeply-toothed; stem branched, hispid, with simple hairs; pedicels and pods spreading. ♂. H. Native of middle Europe, viz. Carniola, Transylvania, Germany, Alsatia, France, Spain, &c. in vineyards in gravelly places and on rocks. Schrank. fl. mon. 3. t. 256. Hook. exot. fl. t. 221. Sisýmbrium arenòsum, Lin. spec. 919. Turritis arenòsa, Lapeyr. abr. 387. Petals obovate, rose-coloured, very rarely white or blueish. Pods linear, spreading.

Var. β, Kamtschática; biennial; stems more numerous from the root, thicker, less branched, and less hairy; flowers much smaller; petals obovate. ♂. H. Native of Kamtschatka. A. arenòsa, Cham. et Schlecht. in Linnæa. 1. p. 17.

Gravel Wall-Cress. Fl. April, July. Clt. 1798. Pl. ½ foot.

38 A. Halle'ri (Lin. spec. 929.) lower leaves lyrate, stalked; terminal lobe ovate; upper leaves lanceolate, cut; stem branched, slender, clothed with soft villi; pedicels and pods spreading. ♃. ♂. H. Native of moist mountainous places near rivulets in Transylvania, Hungary, Piedmont, Switzerland, Austria, even to the confines of Bohemia, &c. &c. Walds. et Kit. hung. 2. p. 126. t. 120. A. stolonífera Clairv. herb. val. 223. Lower branches weak, having the appearance of runners, but not rooting. Petals obovate, white, double the length of the calyx.

Var. β, Kamtschática; flowers smaller. ♃. H. Native of Kamtschatka. A. Hallèri, Cham. et Schlecht. in Linnæa. 1. p. 17.

Haller's Wall-Cress. Fl. May, June. Clt. 1816. Pl. ¾ foot.

39 A. stoloni'fera (Horn. hort. hafn. 618.) radical leaves somewhat lyrate, stalked; terminal lobe cordate, stem leaves oblong, sinuately-toothed; stem stoloniferous at the base, pubescent; pedicels and pods spreading. ♃. H. Native of Carniola. Cardámine stolonífera, Scop. fl. carn. ed. 2. no. 818. t. 39. Like *A. Hallèri*, but much smaller and slenderer, with creeping rooting runners. Flower white. Pods very slender, half an inch long.

Stoloniferous Wall-Cress. Fl. May, June. Clt. 1819. Pl. ½ ft.

40 A. Ovire'nsis (Wulf. in Jacq. coll. 1. p. 196. icon. rar. 1. t. 125.) lower leaves stalked, oval, pectinately-toothed at the base, upper ones oblong, narrowed at the base; stem weak, smooth; pods somewhat spreading, scarcely longer than the pedicels. ♃. H. Native in calcareous rocky moist places in the Alps of Oviro, Carinthia, Transylvania, on the Carpathian mountains in the region of the Pìnus Múghus, &c. Rœm. fl. eur. 7. t. 6. Sturn. deutchl. fl. icon. Nastúrtium Ovirénse, Andrz. ined. Flowers pale, red, rarely white.

Oviro Wall-Cress. Fl. June, July. Clt. 1824. Pl. ½ to ¾ foot.

41 A. O-Waihie'nsis (Cham. et Schlecht. in Linnæa. 1. p. 17.) leaves repand-toothed, rather scabrous, radical ones stalked, lyrately-pinnate, with about 3 pairs of leaflets, stem ones almost wanting; stem ascending, smooth, bearing flowers almost to the base; siliques erectly-spreading, 3-times longer than the pedicels. ♃. H. Native of the Sandwich islands, particularly in O-Wahu. Root thickish. Stem numerous, proliferous at the base. Flowers small, white, with oblong-entire petals, which are hardly longer than the calyx.

O-Wahu Wall-Cress. Pl. 1 foot.

42 A. Cevenne'nsis (D. C. syst. 2. p. 234.) leaves all stalked, ovate, acuminated, grossly-toothed, somewhat velvety with small hairs; pedicels and pods spreading. ♂. H. Native of the Cevennes, in rugged shady places. Hésperis inodòra, Gouan. fl. monsp. p. 167. Flowers pale-violet, almost like those of *A. arenòsa*. Seeds brownish. Deless. icon. sel. 2. t. 26.

Cevennes Wall-Cress. Fl. Ju. Jul. Clt. 1820. Pl. 1 to 2 feet.

43 A. lasio'loba (Link. enum. hort. berl. 2. p. 163.) stem leaves and pods downy with stellate hairs; radical leaves lyrate, upper ones entire. ♂. H. Native of Mexico. Racemes short. Calyx spreading. Style nearly a line long.

Woolly-podded Wall-Cress. Fl. Ju. Jul. Clt. 1826. Pl. 1½ foot.

Sect. II. Lomo'spora (from λωμα, *loma*, a fringe, and σπορα, *spora*, a seed; seeds girded by a membranous wing.) D. C. syst. 2. p. 234. prod. 1. p. 146. Seeds marginate, or girded by a broad membranous wing.

§ 1. *Oblongipétala. Cauline leaves clasping the stem. Petals oblong-linear.*

44 A. TURRI'TA (Lin. spec. 930.) leaves stem-clasping, rather acute, somewhat toothed, pubescent; pedicels length of calyx; pods all on one side, recurved. ♂. H. Native of Spain, France, Switzerland, Italy, Sicily, and Transylvania, on mountains in hedges and coppices, also in Britain, on old walls, but rare, particularly on the college walls of Oxford and Cambridge, and in Scotland on the castle of Cliesh, Kinrosshire. Jacq. fl. austr. t. 11. Smith, engl. bot. 178. Turrìtis ochroleùca. Lam. fl. fr. 2. p. 490. A. umbròsa, Crantz. austr. p. 39. Flowers crowded, cream-coloured. Petals oblong-linear. Pods 3 inches long, all on one side, curved downwards as they ripen. Leaves acuminated.

Var. β, longisíliqua (D. C. syst. 2. p. 235.) A. umbròsa, Steven in litt. Native of Tauria. Pods 4 or 5 inches long.

Var. γ, péndula (Lach. obs. p. 10. but not of Lin.) Poir. suppl. 2. p. 410. exclusive of the synonyms. Turrìtis péndula, Desf. cat. ed. 2. p. 152. Pods much curved when ripe.

Tower Mustard or *Tower* Wall-Cress. Fl. May, June. Britain. Pl. 1½ foot.

45 A. PE'NDULA (Lin. spec. 930.) leaves clasping the stem, toothed, oblong, dilated, cordate at the base; stem furrowed, hispid; pedicels 3 times longer than the calyx; pods drooping. ⊙. H. Native of Siberia near the river Lena.—Jacq. hort. vind. 3. p. 20. t. 34. Petals white, oblong-linear. Pods loose, pendulous.

Var. β, Americàna. A. péndula, Nutt. gen. amer. 2. p. 70. Native of North America on the borders of the river Missouri near Fort Mandan.

Pendulous-podded Wall-Cress. Fl. My. Ju. Clt. 1752. Pl. 1 ft.

46 A. PATRINIA'NA (D. C. syst. 2. p. 236.) leaves oblong, acuminated, somewhat serrated, cordate, stem-clasping, villous; stem round, hispid; pedicels 3 times longer than the calyx; pods pendulous. ♂. H. Native of Siberia at Ufa near Chamanaikha, Deless. icon. sel. 2. t. 27. A. péndula, Patr. herb. Perhaps this is only a var. of *A. péndula.* Seed girded by a narrow wing. Flowers white.

Patrin's Wall-Cress. Fl. June, July. Clt. 1827. Pl. 2 feet.

47 A. OXY'OTA (D. C. syst. 2. p. 236.) leaves scabrous, with branched hairs, cauline ones acutely-sagittate, oblong-linear, a little toothed; stem hispid with simple hairs; pedicels 3 times longer than the calyx. ♂. H. Native of Eastern Siberia. Allied to the two preceding plants. Petals oblong, white.

Sharp-eared-leaved, Wall-Cress. Fl. June, July. Pl. 1 foot.

§ 2. *Cuneipétala. Cauline leaves sessile. Petals oblong or linear-cuneated.*

48 A. HELIO'PHILA (D. C. syst. 2. p. 237.) leaves sessile, linear, entire, hoary with pressed, short, 2-parted hairs; pedicels shorter than the calyx; pods erect. ⊙.? H. Native of the East Indies, Java, &c. Helióphila incàna, Burm. fl. ind. 140. t. 46. f. 2. Helióphila canéscens, Willd. spec. 3. p. 528. Petals linear, very narrow, hardly longer than the calyx.

Sun-loving Wall-Cress. Pl. 1 foot.

49 A. LÆVIGA'TA (D. C. syst. 2. p. 237.) radical leaves obovate, stalked, sinuately-toothed, cauline ones linear, sessile, quite entire; pods erect; seeds margined. ♂.? H. Native of North America on rocks from Pennsylvania to Virginia, but rare; and about Lake Huron. Turrìtis lævigàta, Willd. spec. 3. p. 513. Flowers small, few, white, in corymbose-racemes. Plant smooth, glaucous.

Smooth Wall-Cress. Fl. May, June. Clt. 1821. Pl. 1 foot.

50 A. CANADE'NSIS (Lin. spec. 929.) cauline leaves sessile, oblong-lanceolate, acuminated, remotely serrate-toothed; pedicels 3 times longer than the calyx; pods linear, pendulous, somewhat falcate; seeds with a very broad wing. ♃. H. Native of North America in shady rocky situations, from Canada to Virginia.—Pluk. alm. 136. t. 86. f. 8. Petals white, linear, longer than the calyx.

Var. α, móllis (Raf. amer. monthl. mag. 2. p. 43. but not of Steven.) plant covered with soft down.

Var. β, falcàta (Mich. fl. bor. amer. 2. p. 31.) Pods falcate.

Canadian Wall-Cress. Fl. May, July. Clt. 1768. Pl. 2 feet.

51 A. PU'MILA (Wulf. in Jacq. coll. 2. p. 59. fl. aust. 3. t. 281.) leaves smooth, almost entire, radical ones obovate, stem ones ovate or oblong; racemes nodding; pedicels twice as long as calyx; pods erect, 3 times longer than the pedicels. ♃. H. Native of the Alps from Provence to Transylvania on rocks and among stones. A. bellidifòlia, Crantz. austr. 42. t. 2. f. 3. but not of Jacq. A. ciliàris, Willd. enum. 2. p. 684. A. scàbra, All. ped. 974. A. nùtans, Mœnch. meth. 258. Ait. hort. kew. ed. 2. vol. 4. p. 105. Sims, bot. mag. t. 2219. Turrìtis alpìna, Braun. fl. sal. 2. t. 2. f. 1. Petals oblong-cuneated, white. A tufted plant.

Dwarf Wall Cress. Fl. June, July. Clt. 1658. Pl. ¼ foot.

52 A. BELLIDIFÒLIA (Jacq. obs. 1. p. 22. t. 12. fl. aust. 3. t. 280.) leaves smooth, almost entire, radical ones obovate, stem ones ovate; racemes erect; pedicels 3 times longer than the calyx; pods 4 times longer than their pedicels. ♃. H. Native of the Eastern Pyrenees in stony grassy places, and near fountains and rivulets on the Carpathian mountains. Turrìtis bellidifòlia, All. ped. no. 980. t. 40. f. 1. Petals oblong-cuneated, double the length of calyx. Pods linear. A tufted plant, with white flowers.

Var. β, Turrìtis alpìna, Jacq. in Murr. syst. veg. 502. Willd. spec. 3. p. 545.

Daisy-leaved Wall-Cress. Fl. Ju. Aug. Clt. 1773. Pl. ¼ to ¾ ft.

53 A. CÆRU'LEA (Wulf. in Jacq. coll. 2. p. 56.) leaves smooth, almost entire, radical ones oblong-obovate, cauline ones few, oblong; racemes nodding; pedicels length of calyx; pods erect. ♃. H. Native of the Alps from Provence to Carinthia and Salzburgh, near the limits of perpetual snow. Sturn. deutsch. fl. with a figure. Turrìtis cærùlea, All. ped. no. 981. t. 40. f. 2. Petals oblong, pale or dirty blue. A tufted plant.

Blue-flowered Wall-Cress. Fl. Jul. Aug. Clt. 1793. Pl. ½ foot.

§ 3. *Obovatipétala. Cauline leaves sessile or wanting. Limb of petals spreading, obovate.*

54 A. STELLULA'TA (Bertol. in Desv. journ. bot. 1813. vol. 2. p. 76. amœn. ital. p. 101.) leaves scabrous with stellate-hairs, radical ones obovate, cauline ones oblong, very few; pods twice the length of their pedicels, containing 16 or 20 seeds. ♃. H. Native on the summits of the Appenines. A. pùmila, Pollin. Very like *A. petræ'a var. Crantziana* in habit, but it is evidently different, from the seeds having a broad wing. A pretty little plant, with white flowers.

Starry-haired Wall-Cress. Fl. June, July. Pl. ½ foot.

55 A.? VOCHINE'NSIS (Spreng. pug. 1. p. 46. no. 80.) leaves ciliated, with 2-parted appressed hairs, radical ones obovate, cauline ones few, oblong; pods 4 or 6-seeded, length of their pedicels. ♃. H. Native of the Alps of Carniola about Vochin, also of Carinthia on Mount Selenitz and Mount Cren. Dràba móllis, Scop. carn. no. 789. t. 34. Subulària alpìna, Willd. spec. 3. p. 424. A. serpyllifòlia, Hoppe. Stem prostrate and creeping. Petals white, obovate, narrowed at the base, twice or thrice the length of the calyx.

Vochin Wall-Cress. Fl. July. Clt. 1826. Pl. ½ foot.

56 A. COLLI'NA (Tenore. prod. fl. neap. 39. app. hort. neap. 1815. p. 59.) leaves oblong, sinuately-toothed, hoary with stellate hairs; radical leaves stalked, cauline ones sessile; pods 8 times longer than their pedicels. ♃. H. Native on arid hills about Naples. Petals white, obovate, spreading, double the length of the calyx. Habit of *A. alpìna.*

Hill Wall-Cress. Fl. June, July. Clt. 1823. Pl. ¼ to ½ foot.

† *Species not sufficiently known.*

57 A. Stelle'ri (D. C. syst. 2. p. 242.) plant hispid with 2-forked hairs; lower leaves oblong-spatulate, upper ones half-stem-clasping, oblong, toothed; racemes corymbose; petals cuneated, oblong. ♃. H. Native of Kamtschatka. A. péndula, Steller in herb. Pall. not Lin. Petals white, twice the length of calyx. A. Kamtschàtica, Willd. herb.

Steller's Wall-Cress. Pl. ½ foot.

58 A. lu'cida (Lin. fil. suppl. 298.) leaves shining, clasping the stem. ♃. H. Native of Pannonia. Petals white, linear, entire, narrowed at the base, twice as long as the calyx. This plant comes very near to *A. ciliàta var. glàbra.*

Shining-leaved Wall-Cress. Fl. Ju. July. Clt. 1790. Pl. ½ ft.

59 A. re'ptans (Lam. dict. 1. p. 222.) leaves roundish, quite entire, hairy; runners reptant. ♃. H. Native of sandy fields, from Pennsylvania to Virginia. Pluk. alm. 281. t. 51. f. 5. Habit of *Hieràcium auricula.* Flowers small. Pods small, erect.

Reptant Wall-Cress. Fl. Jun. July. Pl. ¼ foot.

60 A. la'xa (Smith, prod. fl. græc. 2. p. 28.) radical leaves obovate, lyrately-toothed, hispid, cauline ones cordate-stem-clasping, very smooth; pods deflexed. ♃. H. Native of Laconia, in fields. Flowers white. Pods very long and very narrow.

Loose-podded Wall-Cress. Pl. 1½ foot.

61 A. petiola'ta (Bieb. fl. taur. 2. d. 126.) leaves ovate, stalked, smooth; lower ones lobed; upper ones repand; pods striated-angular, spreading. ♂. ♃. H. Native of Siberia. Flowers small, whitish, about the size of those of *Erýsimum cheiránthus.* Pods spreading, 2 or 3 inches long, obscurely 4-sided.

Stalked-leaved Wall-Cress. Fl. Jul. Pl. ¾ foot.

62 A. multiflòra (D. C. syst. 2. p. 243.) leaves sessile, lanceolate, toothed, scabrous; peduncles pressed, many-flowered, pods erect, slender, compressed, crowded; hairs forked. ♂. H. Native of the Pyrenees, on Mount Chatelet. Turrìtis multiflòra, Lapeyr. abr. 386.

Many-flowered Wall-Cress. Pl. ¾ foot.

63 A. integrifòlia (Lapeyr. abr. 385. suppl. p. 93.) hairy; leaves scabrous, lanceolate, quite entire, cauline ones clasping the stem; petals erect, twice the length of the calyx. ♂. ⊙. H. Native of the Pyrenees, at a place called Mail du Cristal.

Entire-leaved Wall-Cress. Pl. ½ foot.

64 A. lyræfòlia (D. C. syst. 2. p. 244.) smooth; stem straight, simple; radical leaves lyrate, stem ones sessile, oblong, acute, toothed; pods sickle-formed. ⊙. H. Native of North America, in woods, at the bottom of the Catskill Mountains. Turrìtis lyràta, Raf. amer. monthl. mag. 2. p. 44.

Lyre-leaved Wall-Cress. Pl.?

65 A. angustifòlia (Lam. dict. 1. p. 220.) radical leaves on long stalks, rhomboid, small, bidentate, cauline ones narrow-lanceolate, very entire.—Native? formerly cultivated in the Paris garden. Perhaps only a variety of *Cardámine alpìna.*

Narrow-leaved Wall-Cress. Pl.?

66 A.? siliculòsa (Lam. dict. 1. p. 221.) radical leaves oblong, on short stalks, smooth, toothed towards the apex; cauline ones few, narrow, entire.—Native of Siberia? Pods flat, narrowed at both ends, 4-lines long, 1 or 2-seeded.

Short-podded Wall-Cress. Pl.?

67 A. dasyca'rpa (Andrz. in litt. D. C. syst. 2. p. 244.) leaves hairy; hairs stellate; cauline leaves sagittate, almost entire; lobes diverging; pods hairy-scabrous, rather erect, with the breadth exceeding twice the length of style.—Native of Podolia. A. récta, Baugm.

Thick-podded Wall-Cress. Fl. Ju. July. Clt. 1828. Pl. ½ to ¾ foot.

Cult. The species of this genus are very proper for rock-work. *A'rabis, álbida, alpìna, arenòsa,* &c. will answer also for the front of flower-borders, as they flower earlier than most border flowers. The perennial species may be either encreased by dividing the plants at the root, by cuttings, or by seeds. The annual and biennial species are mostly weedy-like plants; therefore they are only fit to be preserved in botanical gardens. They should be sown on rock-work, and allowed afterwards to scatter themselves, for by this means they are more likely to be preserved.

XI. OUDNE'YA (to the memory of Dr. Oudney, who found the present plant in many of the Wadeys between Tripoli and Mourzuk, and remarks that camels and mules eat it.) R. Br. in append. to Denh. and Claph. journ. p. 14.

Lin. syst. *Tetradymàmia, Siliquòsa.* Silique sessile, linear, beaked, with flat 1-nerved valves. Funicle adnate to the dissepiment. Seeds in one row. Calyx closed, bisaccate at the base. Filaments distinct, toothless. Stigmas connate, distinct at the apex. A smooth, branched sub-shrub, with quite entire sessile, veinless leaves, lower ones obovate, upper ones almost linear, and bractless terminal racemes of flowers; petals obovate veiny. This genus differs from *A'rabis* in the form of the stigma.

1 O. Africana (R. Br. l. c.) ♄. F. Native between Tripoli and Mourzuk, in the Wadeys. Hésperis nítens, Viv. fl. lib. p. 38. t. 5. f. 3.

African Oudneya. Shrub 1 foot.

Cult. Should this plant be ever introduced into the gardens, it may be grown in pots filled with an equal quantity of sand and peat, and treated as other alpine plants. It may be either propagated by cuttings or by seeds.

XII. MACROPO'DIUM (from μακρος, *makros,* long, and πους ποδος, *pous podos,* a foot; in allusion to the pods standing on long pedicels or foot-stalks.) R. Br. in hort. kew. ed. 2. vol. 4. p. 108. D. C. syst. 2. p. 244. prod. 1. p. 149.

Lin. Syst. *Tetradynamia, Siliquòsa.* Silique linear, pedicellate, with flat 1-nerved valves; seeds orbicular, compressed, flat, girded by a very narrow membrane, disposed in one row in each cell, distant. Perennial or annual, smooth, erect, simple herbs; with ovate-lanceolate, pointed, serrated or jagged leaves, and long terminal racemes, with almost sessile flowers, which are disposed in the form of a spike.

1 M. niva'le (R. Br. in hort. kew. ed. 2. vol. 4. p. 108.) radical leaves ovate, on long stalks, unequally serrated, cauline ones lanceolate, acuminated, narrowed at the base, entire; flowers sessile; petals obovate. ♃. H. Native on the summits of the Altaian Mountains near the limits of perpetual snow. Cardámine nivàlis, Pall. itin. 2. app. no. 113. t. U. ed. gall. 8vo. app. p. 341. t. 68. f. 2. Cleòme nivàlis, Vahl. herb. A'rabis nivàlis, Spreng. syst. 2. p. 893. Root somewhat woody. Flowers white.

Snow Macropodium. Fl. Jun. Sep. Clt. 1796. Pl. 1 foot.

2 M. laciniа'tum (Hook, fl. bor. amer. p. 42.) leaves all stalked, jagged-pinnatifid; flowers on pedicels; petals narrow, linear. ⊙. H. Native of North America, common on dry rocks about Wallawallah, and at Priest's rapid on the Columbia. Flowers white.

Jagged-leaved Macropodium? Fl. June, July. Pl. 2 to 3 ft.

Cult. M. nivale succeeds well in a rich light soil in the open border; and cuttings will strike root freely under a hand-glass: notwithstanding it will sometimes thrive well in open borders, yet it is very apt to damp off in the winter; therefore we would advise a duplicate plant to be kept in a pot as an alpine or frame plant. *M. laciniàtus* being an annual will only require to be sown in the open ground early in spring.

XIII. CARDA'MINE (from καρδια, *kardia*, the heart; δαμαω, *damao*, to subdue; stomachic quality of the plants, or perhaps diminished from καρδαμων, *kardamon*, water-cress; taste similar.) Lin. D. C. syst. 2. p. 245. prod. 1. p. 149.

LYN. SYST. *Tetradynamia, Siliquòsa.* Silique linear; with flat nerveless valves, usually opening with elasticity. Seeds in one series, ovate, not margined. Umbilical cord slender. Cotyledons accumbent. Herbs usually smooth. Roots fibrous or granuliferous. Leaves stalked, entire, lobed, or pinnately-cut, usually very different in the same plant. Racemes terminal, bractless. Flowers white or red.

For the derivation of the English name of the Genus see *C. praténsis.*

§. 1. *Indivisæfòlia. Leaves nearly all undivided.*

1 C. RHOMBOÌDEA (D. C. syst. 2. p. 246.) plant at first hairy-pubescent, but at length smooth; leaves rather fleshy, ovate-rhomboid, obsoletely repand-toothed, smooth, lower ones roundish-cordate, on long petioles, cauline ones ovate, uppermost ones sessile; stem erect, flexuous; root tuberous and fibrous. ♃. H. B. Native of North America, on the borders of rivulets and springs, Rocky Mountains, thence to Hudson's Bay. A'rabis rhomboìdea and tuberòsa, Pers. ench. 2. p. 204. A'rabis bulbòsa, Muhl. cat. no. 104. Cardámine rotundifòlia, Hook. fl. bor. amer. p. 44. Pluk. amalth. t. 435. f. 6. Flowers rose-coloured, about the size of those of *C. praténsis.* The leaves taste like early spring cresses.

Rhomb-like-leaved Lady's-Smock. Fl. May, Jul. Clt. 1825. Pl. ¾ ft.

2 C. ROTUNDIFÒLIA (Mich. fl. bor. amer. 2. p. 30.) leaves rather fleshy, orbicular, somewhat toothed, smooth, stalked; stems weak, procumbent; root fibrous. ♃. H. B. Native of North America, on the borders of rivulets on the highest mountains of Carolina, Virginia, and New Hampshire; also in Pennsylvania, on the border of the river Brandywine, near West Chester. Flowers white.

Round-leaved Lady's-Smock. Fl. May, Jul. Clt. 1823. Pl. ½ foot decumbent.

3 C. SPATULA'TA (Mich. fl. bor. amer. 2. p. 29.) radical-leaves stalked, spatulate, entire, pubescent with 3-forked hairs, stem ones linear; stem decumbent. ♃. H. B. Native of Carolina, on the highest mountains. Pods linear, straight, spreading, somewhat reflexed. Stigma sessile, hardly acute. Flowers white?

Spatulate-leaved Lady's-Smock. Fl. May, Jun. Pl. ½ foot, decumbent.

4 C. ASARIFÒLIA (Lin. spec. 913.) leaves smooth; stalked, cordate-orbicular, somewhat sinuately-toothed; stem erect; pods erect, twice the length of the pedicel. ♃. H. B. Native of Piedmont, Italy, and several other places in Europe, in mountain rivulets. Sims, bot. mag. t. 1735. Flowers white, a little larger than those of *C. amàra.* Pods an inch long.

Var. β, diversifòlia; (D. C. syst. 2. p. 248.) cauline leaves pinnately-ternate; radical ones and upper ones orbicular, undivided. ♃. H. B. Native of Piedmont.

Asaribacca-leaved Lady's-Smock. Fl. Jun. Jul. Clt. 1710. Pl. 1 to 1½ foot.

5 C. I'NDICA (Burm. fl. ind. 140.) leaves ovate, crenulated, stalked, smooth, upper ones oblong-cuneated; stem erect; pods spreading; stigma sessile. ⊙.? S. Native of Java. Flowers small, white. Perhaps a species of *Nastúrtium*, referable to section *Clandestinària.*

Indian Lady's-Smock. Pl. ½ foot.

6 C. STYLÒSA (D. C. syst. 2. p. 248.) cauline leaves sagittate half-stem-clasping; oblong, acute, denticulated, smooth; stem erect; pods spreading, pointed with the style. ♃.? G. B. Native of New Holland. Flowers small, whitish.

Large-*styled* Lady's-Smock. Pl. 2 feet.

7 C. CHENOPODIFÒLIA (Pers. ench. 2. p. 195.) leaves ovate, somewhat sinuately-lobed; stem procumbent; pods erect; stigma sessile. ♃.? S. B. Native of South America, on the margins of rivulets about Monte Video. Poir, suppl. 2. p. 394. Flowers white. Pods smooth, linear, erect, compressed, one inch long.

Goosefoot-leaved Lady's-Smock. Fl. Nov. Pl. 1 foot, trailing.

8 C. BELLIDIFÒLIA (Lin. spec. 913.) leaves smooth, thickish, radical ones stalked, ovate, entire; cauline ones few, entire or somewhat 3-lobed, not eared at the base; pods erect; stigma almost sessile. ♃. H. B. Native of Europe, on the tops of mountains; also of North America, on the summits of the Rocky Mountains, throughout Arctic America but sparingly; islands of Unalaschka and St. Lawrence. C. Lenénsis, Ledeb. Flowers white.

Var. α, petiolàris (D. C. syst. 2. p. 249,) petioles longer than the entire leaf. Oed. fl. dan. t. 20. Smith, eng. bot. 2355.—Lin. fl. lapp. 260. t. 9. f. 2. Native of Lapland, Norway, and Scotland, in fissures of moist rocks.

Var. β, alpìna (D. C. l. c.) petiole rather shorter than the entire leaf. C. bellidifòlia, Crantz. fl. aust. 43. Wulf. in Jacq. misc. 1. p. 148. t. 17. f. 2. C. alpìna, Willd. spec. 3. p. 481. A'rabis bellidifòlia, Scop. carn. 2. p. 31. A. bellidioìdes, Lam. dict. 1. p. 220. Native of the Alps, of Europe, also in Scotland.

Var. γ, subtríloba (D. C. l. c. 250.) the upper leaves are somewhat 3-lobed, sometimes ternate. Native of the Alps and the Pyrenees. C. heterophylla, Baugm.

Daisy-leaved Lady's-Smock. Fl. Apr. Jun. Scotland. Pl. ¼ ft.

§. 2. *Trílobæ. Leaves for the most part 3-lobed.*

9. C. HAMILTONII; smooth; stem erect, branched, flexuous, radical leaves simple, kidney-shaped, repand-crenate, stalked; cauline leaves pinnate; leaflets 5, opposite, roundish, 3-lobed, terminal one large; siliques filiform, straight. ⊙. H. Native of Nipaul, at Narainhetty. C. débilis, D. Don, prod. fl. nep. p. 201. Herb slender, green. Flowers small, white.

Hamilton's Lady's-Smock. Fl. Oct. Pl. ½ foot.

10 C. RESEDIFÒLIA (Lin. spec. 913.) leaves smooth, membranous, stalked, radical ones undivided, stem ones drawn out on both sides at the base into an acute auricle; lower ones of these ternate, and the upper ones pinnately-5-lobed; pods erect, terminated by the style. ⊙. H. Native of Cevennes, Pyrenees, &c. in shady humid places. Sturn. fl. germ. icon. All. ped. no. 950. t. 57. f. 2. Jacq. fl. aust. app. t. 31. A'rabis resedifòlia, Lam. fl. fr. 2. p. 511. Flowers white.

Var. β, integrifòlia (D. C. prod. 1. p. 150.). A. hastulàta, Bertol. ined. Native of the Apennines. Leaves undivided.

Mignonette-leaved Lady's Smock. Fl. July. Clt. 1658. Pl. ¼ to ½ foot.

11 C. UNIFLO'RA (Mich. fl. bor. amer. 2. p. 29.) radical leaves 3-lobed, smooth; scapes 1-flowered. ♃? H. Native of North America on the rocks of Kentucky near Knoxville. Flowers white, smaller than those of *C. amàra.* Petals longer than the calyx. Pods linear, compressed.

One-flowered Lady's Smock. Pl. ⅛ foot.

12 C. MICROPHY'LLA (Adams, mem. soc. nat. mosc. 5. p. 111. Fisch. in litt. icon.) leaves ternate, or pinnately quinate, smooth, floral one simple, 3-toothed; scape few-flowered. ♃? H. Native of Siberia at Cape Bykofskoy-mys. C. minùta, Willd. herb. Pedicel filiform, only equalling the flower in length or rather longer than either flower or pod. Flowers white. Stem ascendant, branched, and rooting.

Small-leaved Lady's Smock. Fl. July. Pl. ⅛ to ¼ of a foot.

13 C. BONARIE'NSIS (Pers. ench. 2. p. 195.) leaves smooth, stalked, trifoliate; leaflets stalked, somewhat repand, middle leaflet 3-lobed; upper leaves simple or 3-lobed; pedicels furnished with bracteas. ♃? S. Native of South America in fields

at Buenos Ayres. C. repánda, Smith, herb. Flowers small, white. Pods slender, erect, compressed.

Buenos-Ayrean Lady's Smock. Pl. ½ foot.

14 C. ANTENIQUA'NA (Burch. cat. geogr. pl. afr. aust. no. 6043.) leaves trifoliate, pilose on the upper surface; leaflets stalked, ovate, toothed; pods erect; stems somewhat decumbent. ♃? G. Native of the Cape of Good Hope in the humid shady regions of Anteniqualand. C. Burchéllii, Spreng. syst. 2. p. 886. Root perpendicular. Flowers white, size of those of *C. parviflòra*. Petals blunt, double the length of the calyx.

Anteniqualand Lady's-Smock. Pl. ½ foot.

15 C. BORBO'NICA (Pers. ench. 2. p. 195.) leaves pilose on both surfaces, trifoliate, rarely pinnate; segments stalked, ovate, accuminated, toothed; pods erect. Native of the island of Bourbon. C. rubifòlia, Smith, herb. Petals white, a little longer than the calyx.

Var. β, *Allèvia* (Comm. ined.) leaves sometimes pinnate; segments 5. C. Africàna. Native of Bourbon. Vahl. symb. 2. p. 77.

Var. γ, *Arábica* (D. C. syst. 2. p. 252.) stem rather villous. C. Africàna. Native of Arabia. Vahl. symb. 2. p. 77.

Bourbon Lady's-Smock. Pl. ½ foot.

16 C. AFRICA'NA (Lin. spec. 914.) leaves smooth, ternate, rarely pinnate; segments stalked, ovate, pointed, toothed; pods spreading. ♃. G. Native of the Cape of Good Hope. Pluk. alm. 252. t. 101. f. 5. Flowers small, white. Pods spreading, linear.

African Lady's-Smock. Fl. May, June. Clt. 1691. Pl. 1 ft.

17 C. NASTURTIOI'DES (D. Don, prod. fl. nep. p. 201.) smooth; lower leaves ternate, terminal leaflet large, round, obsoletely 3-lobed; upper leaves simple, cuneate-ovate, 3-lobed; stem procumbent, branched. ☉. H. Native of Nipaul. Flowers small, white. C. nastúrtii, Spreng. syst. app. p. 241.

Nasturtium-like Lady's-Smock. Pl. ½ foot.

18 B. TRIFO'LIA (Lin. spec. 913.) leaves smoothish, ternate; segments sessile, rhomboidal-roundish, toothed; scape naked; lower branches root-like, creeping. ♃. H. B. Native of Italy, Hungary, Germany, Switzerland, France, &c. on shady parts of mountains. Sturn. deutsch. fl. icon. Jacq. aust. t. 27. Curt. bot. mag. t. 452. Petals white, with a broad cuneated claw, and a broad spreading obovate limb.

Three-leaved Lady's-Smock. Fl. March, May. Clt. 1629. Pl. ¼ to ½ foot.

19 C. BOCCO'NI (Viv. fl. cors. app. in Schlecht. Linnæa 1. p. 502.) cauline leaves alternately pinnate or ternate; pedicels filiform, spreading; leaflets roundish-ovate, 3 or unequally 5-lobed; siliques linear, deflexed. ♃. H. B. Native of Corsica. Bocc. mus. p. 171. t. 118. Flowers white?

Bocconi's Lady's-Smock. Pl. ½ foot.

20 C. CHILE'NSIS (D. C. syst. 2. p. 254.) upper surface of leaves pilose, ternate; segments almost petiolulate, ovate-lanceolate, crenated; stem somewhat ascendant. ♃? G. Native of Chili. Petals oblong, white, longer than the calyx. Pods linear, smooth, slender, ending in the style, which is hardly distinguishable from the pod.

Chile Lady's-Smock. March, April. Clt. 1825. Pl. ¼ foot.

21 C. TUBERO'SA (D. C. syst. 2. p. 254.) leaves smooth, radical ones on long stalks, kidney-shaped, stem ones pinnately-ternate; root tuberous. ♃. G. Native of Chili. Sisýmbrium tuberòsum, Lag. in litt. Petals white? 3-times longer than the sepals; younger pods linear, pointed by the style. Deless. icon. sel. 2. t. 29.

Tuberous-rooted Lady's-Smock. Pl. ½ to 1 foot.

22 C. PURPU'REA (Cham. et Schlecht. in Linnæa 1. p. 20.) plant smoothish; radical leaves and cauline ones trifoliate or quinate; lateral leaflets oval-roundish, acute, terminal one cordate-roundish, 3-toothed; bractea cuneated, 3-toothed, sessile at the base of the lower pedicel; petals reticulately veined; root creeping, slender, fibrous. ♃. H. Native of the island of St. Lawrence. Cape Lisburne at the northern entrance of Kotzebue's Sound. Flower deep purple, in loose racemes.

Purple-flowered Lady's-Smock. Pl. ½ foot.

23 C. ANGULA'TA (Hook. bot. misc. pt. 3. with a figure, fl. bor. amer. p. 44.) leaves all stalked, ternate, rarely quinate: radical ones roundish, cauline ones ovate or lanceolate, angular, or deeply lobed, smooth; root creeping, fibrous. ♃. H. Native of North America on the banks of Columbia River. Flowers pale rose-coloured, disposed in terminal and axillary corymbs.

Angular-leaved Lady's-Smock. Pl. 1½ foot.

§ 3. *Pinnàtæ. Leaves for the most part pinnate-parted.*

24 C. GRANULO'SA (All. auct. p. 16. exclusive of the synonyms of Dalechamp,) radical leaves stalked, ovate, somewhat cordate, stem ones pinnately-parted; lobes oblong, entire; root tuberously-granular. ♃. H. Native on hilly meadows about Turin. Petals obovate, blunt, white, size of those of *C. amàra*.

Granular-rooted Lady's-Smock. Fl. April, May. Clt. 1820. Pl. 1 foot.

25 C. AMA'RA (Lin. spec. 915.) leaves pinnate; segments of the radical ones roundish, of the stem ones angularly-toothed; style filiform, acutish; stems rooting at the base. ♃. H. B. Native throughout northern and middle Europe in watery places by the sides of rivers and brooks; about London in several places between Kew and Mortlake; near Ripon, and in King-street meadows, Norwich, and several other places. Vill. dauph. 3. p. 362. t. 39. Smith, engl. bot. t. 1000. Curt. lond. 3. t. 39. Schkuhr. handb. 2. t. 187. C. parviflòra, Lam. dict. 2. p. 183. C. nasturtiàna, Thuil. fl. par. ed. 2. vol. 1. p. 330. C. melanánthera, Stok. bot. mat. med. 3. p. 445.

Var. β, *plèna* (D. C. eyst. 2. p. 255.) flowers double. Besl. hort. eyst. ord. 1. t. 3. f. 4. This is probably the double variety of *C. praténsis*.

Var. γ, *trisécta* (D. C. l. c.) leaves ternate. C. trifòlia, Wahl. fl. lapp. no. 327. Native of Lapland and Sweden.

Var. ε, *umbròsa* (Lej. fl. spa. 2. p. 63.) stem and leaves villous. C. hirsùta, Oed. fl. dan. t. 148.? Native of Denmark. The flowers of all the varieties are white, cream-coloured, with violet anthers, and the plant before it flowers greatly resembles the *water-cress*, but the taste is bitter and nauseous.

Bitter Lady's-Smock. Fl. Apr. May. Britain. Pl. 1 to 2 ft.

26 C. ULIGINO'SA (Bieb. suppl. p. 438.) leaves pinnate; segments angularly-toothed, bluntish, those of the radical ones roundish, of the stem ones oblong; style very short, hardly narrower than the pod; runners creeping. ♃. H. B. Native of Tauria in wooded mountains about springs, and also in the Ukraine. C. amàra, Bieb. fl. taur. no. 1283. exclusive of the synonyms. Flowers white, like those of *C. amàra*. Pedicels nearly equal in length with the pods.

Bog Lady's-Smock. Fl. May. Clt. 1824. Pl. 1 foot.

27 C. PRORE'PENS (Fisch. in litt. 1819.) leaves pinnate; segments ovate, almost entire, terminal one roundish, somewhat 3-lobed; runners creeping; stem ascending, pubescent; pods hairy, shorter than the pedicels. ♃. H. B. Native of Siberia beyond the Baical, on the banks of the river Ingoda about Doroninsk. C. hirsùta, Pall. C. pubéscens, Stev. C. pilòsa, Willd. C. boreàlis, Andrz. all in litt. Pods erect, slender, hairy. Style filiform, a line long. Flowers white.

Most-creeping Lady's-Smock. Fl. May, June. Clt. 1825. Pl. ½ foot.

28 C. PRATE'NSIS (Lin. spec. 915.) leaves pinnate; segments of the radical ones roundish, of the stem ones linear or lanceolate, entire; style very short, hardly narrower than the pod;

stigma capitate. 4. H. B. Native throughout Europe in humid meadows; plentiful in Britain, also in the north of Asia and in North America about Hudson's Bay, Behring's Straits, in fact, throughout Arctic America. Lam. ill. t. 562. f. 1. Smith, engl. bot. 776. Curt. lond. t. 40. Woodv. med. bot. t. 30. Fl. dan. 1039. Schkuhr. handb. 2. t. 187. Flowers usually pink, sometimes they are to be seen white and purplish. A very common and variable plant. Root tuberous, like those of *Dentària*, which this species greatly resembles in habit.

Var. β, *flòre plèno;* flowers double and pink. Clus. hist. 2. p. 129. f. 1. Bauh. hist. 2. p. 889. f. 2.

Var. γ, *grandiflòra* (C. Bauh. pin. 104.) flowers large, white.

Var. δ, *débilis* (D. C. syst. 2. p. 257.) stem weak; segments of the upper leaves very narrow.

Var. ε, *stolonífera* (D. C. l. c.). C. praténsis monstròsa, Naunburg in Rœm. arch. 2. p. 14. t. 2.

Var. ζ, *angustifòlia* (Hook. fl. bor. amer. 1. p. 45.) leaflets of radical leaves lanceolate, tapering to the base, almost entire. Native of Igloolik and others of the islands in the Arctic sea.

This plant was long ago employed as a diuretic, and it has been again introduced in nervous diseases, such as epilepsy, hysteria, chorea, and asthma, &c. A drachm or two of the powder of the dried flowers is given twice or thrice a-day. It has little sensible operation, except that it sometimes acts as a diaphoretic. The flowers and leaves are agreeably pungent, and may be eaten with other herbs in a salad. They come with the cuckoo, whence one of its English names *cuckoo-flower*, and they cover the meadows as with linen bleaching, which is supposed to be the origin of the other English name, now extended to the whole genus, *Lady's Smock*.

Meadow Lady's-Smock or Cuckoo Flower. Fl. April, May. Britain. Pl. 1 to 1½ foot.

29 C. DENTA'TA (Schult. obs. no. 968.) leaves pinnate; segments stalked, those of the radical leaves are roundish, of the stem oblong and narrowed at the base, the terminal one wedge-shaped; pods obliquely erect, only equalling the breadth of the style. 4. H. B. Native of Galicia, Volhynia, and Podolia in marshes along banks of rivers and brooks. C. Buchtorménsis, Willd. ined. Flowers white like those of *C. amàra* or *C. uliginòsa*. Runners creeping.

Toothed-leaved Lady's-Smock. Fl. April, May. Clt. 1823. Pl. 1 foot.

30 C. PENNSYLVA'NICA (Muhl. cat. p. 60.) leaves pinnate, or pinnately-lyrate; lobes oval, angularly-toothed, blunt; stem erect; petals oblong; stigma minute, almost sessile, linear. 4. H. B. Native of North America in low meadows from New York to Pennsylvania, Poir. suppl. 2. p. 395. Pursh, fl. bor. amer. 2. p. 440. Flowers small, white; petals oblong-linear, a little longer than the calyx.

Pennsylvanian Lady's-Smock. Fl. May, Ju. Clt. 1818. Pl. 1 ft.

31 C. VIRGI'NICA (Lin. spec. 915.) leaves pinnate; segments lanceolate, somewhat auricled; stem erect; pods long, strictly erect. 4. H. B. Native of North America in low meadows from Canada to Carolina. A'rabis Virgínica, Poir. suppl. 1. p. 413.—Pet. gen. t. 105. f. 18. Pluk. alm. 251. t. 101. f. 4. Flowers white?

Virginian Lady's Smock. Fl. May, June. Pl. ¾ foot.

32 C. FLA'CCIDA (Cham. et Schlecht. in Linnæa. 1. p. 21.) stems branched, prostrate, flagelliform, rooting; leaves pinnate; leaflets angular or toothed, stalked; pedicels spreading, lower ones furnished with bracteas; siliques erect. 4. H. Native of Chile in humid grassy places. Flowers small, white, in short racemes. Leaves with 1-2 pair of leaflets and an odd one.

Flaccid-stemmed Lady's-Smock. Pl. creeping.

33 C.? TE'RES (Mich. fl. bor. amer. 2. p. 29.) leaves pinnate-parted, lyrate; lobes oval-oblong, terminal one somewhat 3-lobed; pods short, erect, terete. 4. H. W. Native of North America in inundated places from New England to New York. Flowers unknown. Perhaps a species of *Nastúrtium*.

Terete-podded Lady's-Smock. Fl. May, July. Pl. ¼ foot.

34 C. HIRSU'TA (Lin. spec. 915.) leaves pinnate; segments of the radical leaves stalked, roundish, mucronate, entire or notched; petals oblong; stigmas minute, almost sessile; pods spreading, smooth, but sometimes pilose. ⊙. H. B. Native of waste ground, especially in moist shady places, very frequent throughout Europe, Tauria, and Persia, also of North America; plentiful in Britain. Smith, engl. bot. t. 492. Curt. lond. 4. t. 48. Scop. carn. ed. 2. no. 817. t. 38. Schkuhr. handb. 2. t. 187. Stok. mat. med. 3. p. 445. C. flexuòsa, With. brit. 578. C. parviflòra, Lightf. fl. scot. 1104. C. impàtiens, fl. dan. t. 735. Flowers in corymbs, white. Dr. Hooker considers *C. Pennsylvánica* and *C. Virgínica* to be identical with this species.

Var. β, *máxima* (D. C. syst. 2. p. 260.) C. hirsùta máxima, Fisch. cat. hort. gorenk. 1808. p. 81. Plant large.

Var. γ, *prolífera* (D. C. l. c.). St. Hil. not Orl. p. 35. Calyx 3-flowered.

Hairy Lady's-Smock. Fl. May, June. Brit. Pl. ½ to 1 ft.

35 C. SYLVA'TICA (Link. in Hoffm. phyt. blatt. 1. p. 50.) leaves pinnate; segments regularly sinuate-toothed, mucronate; petals oblong; pods spreading, equalling the breadth of the style, and are as well as branches smooth. ⊙. H. Native throughout Europe in woods in moist places. Perhaps also in Britain, mixed with *C. hirsùta*. Flowers white, a little larger than those of *C. hirsùta*. C. hirsùta, Web. spec. gœt. p. 18. C. muscòsa, Vahl. herb.

Wood Lady's Smock. Fl. May, Ju. Clt. 1822. Pl. ½ to 1 ft.

36 C. UMBRO'SA (Andrz. cruc. ined. D. C. syst. 2. p. 260.) leaves pinnate, cut; segments entire, mucronate; petals oblong; pods rather spreading, twice longer than the breadth of the thick style, which are as well as branches smooth. ⊙. H. B. Native of Cevennes, Volhynia, and perhaps may be found every where mixed with *C. hirsùta* and *C. sylvática* in woods. Very like *C. hirsùta* and *C. sylvática*, but the whole plant is nearly smooth. Perhaps *C. tenélla* of Clark, voy. vol. 2. is identical with this. Flowers white.

Shady Lady's-Smock. Fl. May, Ju. Clt. 1823. Pl. ½ to 1 ft.

37 C. PARVIFLO'RA (Lin. spec. 919.) leaves pinnate-parted; lobes sessile, oblong, or linear, entire, lower ones remote from the stem; petals oblong-linear; pedicels somewhat spreading; pods erect. ⊙. H. B. Native of France about Nantes, Montpelier, in Provence, Transylvania, Russia at Tanaim, from the river Iaico to the Oby in grassy humid places. Gmel. sib. 3. p. 270. no. 37. t. 64. Wrangel, diss. Stockh. 1823. Very like *C. hirsùta*, but more slender and decumbent. Flowers small, white.

Small-flowered Lady's-Smock. Fl. April, May. Clt. 1800. Pl. ¾ foot.

38 C. IMPA'TIENS (Lin. spec. 914.) leaves pinnate; segments oval-oblong, mostly cut, lower stem ones approximate, acute, form of stipulas. ⊙. H. Native of shady, rather moist rocky situations, in many parts of Europe and the north of Asia. In the north of England under the rocks by the river side at Matlock-bath, Derbyshire, and in various parts of Westmoreland and Cumberland; rare in Scotland. Smith, engl. bot. t. 80. Fl. dan. t. 1339. C. parviflòra, var. β, Lam. fl. fr. 2. p. 500. C. apétala, Mœnch. meth. 259. Flowers small, sometimes without petals, sometimes furnished with small white oblong petals. Pods, when ripe, curling up when touched.

β. *eriocárpa* (D. C. syst. 2. p. 262.) pods pilose. C. dasycárpa, Bieb. suppl. 437. ⊙. H. Native of Iberia.

Impatient-podded Lady's-Smock. Fl. May, June. Britain. Pl. 1 to 2 feet.

39 C. LATIFO'LIA (Vahl. symb. 2. p. 7.) leaves pinnate,

smooth; segments 3 or 7, rather orbicular; angularly-toothed; pods erect, a little longer than the pedicels, pointed with the style. ♃. H. B. Native of the south of Europe along the borders of mountain rivulets, particularly in the Pyrenees. C. chelidònia, Lam. dict. 2. p. 183. exclusive of the synonym of Barrelier. C. raphanifòlia, Pourr. act. Toul. 3. p. 310. Flowers purplish, a little larger than those of *C. praténsis.* Herm. par. p. 203. t. 69.

Var. β, *Legionénsis* (D. C. syst. 2. p. 262.) segments of leaves 7. ♃. H. B. Native of Spain in the mountains of Leon.

Var. γ, *Calàbria;* segments of leaves smaller; pedicels shorter. ♃. H. B. Native of the kingdom of Naples near Scylla.

Broad-leaved Lady's-Smock. Fl. June, July. Clt. 1710. Pl. 1 to 2 feet.

40 C. MACROPHY'LLA (Willd. spec. 3. p. 484.) leaves pinnate, somewhat pubescent; segments 5, oval-lanceolate, pointed, unequally serrated. ♃. H. B. Native of Siberia and Altaia near the town of Mangasea. Dentària hirsútula, Andrz. in litt. C. chelidònia, Pall. itin. 3. p. 54.—Gmel. sib. 3. p. 269. t. 62. Flowers about the size and colour of those of *C. praténsis.* Habit of a species of *Dentària.* Branches of roòt creeping.

Long-leaved Lady's-Smock. Fl. June, Aug. Clt. 1820. Pl. 1 or 1½ foot.

41 C. CHELIDO'NIA (Lin. spec. 914.) leaves pinnate, rather smooth; segments stalked, ovate, toothed, lower segments pinnate, into 3 or 4 small segments. ♃. H. B. Native of Naples, Hungary, Croatia, &c. in wooded mountains in moist places. Waldst. et Kit. hung. 2. p. 149. t. 140. Petals oval, purple.

Celandine Lady's-Smock. Fl. March, April. Clt. 1739. Pl. 1 foot.

42 C. PETIOLA'RIS (D. C. syst. 2. p. 264.) leaves on long stalks, smooth, pinnate; segments 9-10, stalked, ovate, toothed, somewhat lobed; pods erect. ♃? H. B. Native of Northern Caucasus near Mosdock. C. chelidònia affìnis, Goldb. in litt. Flowers white, nearly the size of those of *C. thalictroìdes.* Radical leaves almost the length of the flower stems.

Stalked-leaved Lady's-Smock. Pl. ½ foot.

43 C. PECTINA'TA (Pall. herb. & D. C. syst. 2. p. 264.) leaves stalked, smooth, pinnate; segments 7-9, stalked, ovate, pectinately-lobed; pods spreading. ⊙? H. B. Native of Persia. Flowers small, white; petals oblong, bluntish. Herb pale green.

Pectinate-lobed-leaved Lady's-Smock. Fl. July. Pl. ½ foot.

44 C. HEDERA'CEA (D. C. syst. 2. p. 264.) leaves stalked, smooth, pinnate; segments 5, stalked, broad-ovate, and bluntly 3-lobed; pods erect. ♃? H. B. Native of Syria. Flowers small, white. Pods very slender. Deless. icon. sel. 2. t. 30. f. A.

Ivy-like-leaved Lady's-Smock. Fl.? Pl. ¼ to ½ foot.

45 C. GLACIA'LIS (D. C. syst. 2. p. 264.) leaves stalked, pinnate, somewhat ciliated; lower segments sessile, 2 pair, small, terminal one stalked, large, reniform; pods erect. ♃. H. B. Native of Terra del Fuego in moist places which are nearly always covered with snow. Sisýmbrium glaciàle, Forst. comm. Goett. 9. p. 32. Flowers white. Pods almost filiform.

Var. β, (D. C. l. c.) segments of leaves 3.

Icy Lady's-Smock. Pl. ¼ foot.

46 C. DE'BILIS (Banks, mss. and herb.) leaves stalked, smooth, pinnate; segments stalked, ovate, somewhat sinuated, mostly 2 pair, with an odd one which is kidney-shaped; stem weak; pods erect. ⊙? H. B. Native of New Zealand. Sisýmbrium heterophýllum, Forst. prod. p. 64. no. 250. Flowers small, white. Stems almost naked.

Weak-stemmed Lady's Smock. Pl. ¼ foot.

47 C. SARMENTO'SA (Forst. fl. app. p. 92. no. 529.) leaves stalked, smooth, pinnate; segments 5, ovate, cut at the base, lower ones stalked; stem almost naked, bearing runners at the base; pods spreading. ♃. G. B. Native of the island of Teatinos in the South Sea. Flowers small, white; pedicels filiform, at last spreading.

Straggling Lady's-Smock. Pl. ½ foot.

48 C. THALICTROI'DES (All. ped. no. 951. t. 57. f. 1.) leaves stalked, smooth, upper ones pinnate; segments 3-5, stalked, ovate, 3-lobed; stem weak; pods spreading. ♂. H. B. Native of the Alps of Piedmont, Dauphiny, and perhaps in Switzerland, in rugged moist places in woods. C. Plumìerii, Vill. dauph. 3. p. 359. t. 38. exclusive of the synonym of Bocconi. Flowers white, hardly smaller than those of *C. amàra,* with a yellowish throat and claws.

Meadow-Rue-like Lady's-Smock. Fl. Ju. Jul. Clt. 1819. Pl. ¾ ft.

49 C. GLAU'CA (Spreng. in litt. 1819.) leaves stalked, smooth, glaucous, rather fleshy, pinnate; segments 5 or 9, oblong, terminal one 3-lobed; stem diffuse, much branched; pods erect, smooth. ♃. H. Native of Calabria on a mountain near Reggio. Deless. icon. sel. 2. t. 31. C. Bergeriàna, Andrz. in litt. 1820. C. thalictroìdes, Tin. C. corydaloìdes, Cusson. Flowers white, nearly the size of those of *C. amàra.* A tufted plant.

Glaucous Lady's-Smock. Fl. May, Jul. Clt. 1824. Pl. ½ ft.

50 C. MARI'TIMA (Portenschlag, in litt. D. C. syst. 2. p. 266.) leaves stalked, smooth, glaucous, pinnate; segments 5 or 7, obovately cuneated, repand; stem diffuse, much branched: pods erect, smooth. ⊙. H. Native of Dalmatia in the peninsula of Sabioncello, formerly called Hyllis, in sand on the sea-shore. Welden. icon. ined. t. 12. Deless. icon. sel. 2. t. 32. This plant much resembles *Pteroneùrum carnòsum* and also *C. glaúcum,* but differs from them both by its being an annual. Stems purplish. Leaves somewhat fleshy. Flowers white.

Sea-side Lady's-Smock. Pl. ½ foot.

51 C. DIGITA'TA (Richards. in Frankl. 1st journ. ed. 2. app. p. 26.) leaves digitately-pinnate; lobes 7, sessile, linear, quite entire; style short, hardly narrower than the pod; stigma capitate; root creeping. ♃. H. Native in sterile places at the Arctic sea. Plant very smooth, simple, ascendant, creeping at the base. Flowers white, tinged with purple, in loose, many-flowered racemes. Calyx yellow.

Digitate-leaved Lady's-Smock. Fl. June, July. Pl. ¾ foot.

52 C. PURPU'REA (Cham. et Schlecht. Linnæa. 1. p. 20.) leaves radical, few, on long stalks, pinnate, with 2 pair of orbicular, obovate, or elliptical leaflets, and a very large, ovate, roundish, somewhat 3-lobed odd one, which is rather cordate at the base, and tapering into the petiole, all sessile; style a line long. ♃. H. Native of the island of St. Lawrence. Plant beset with a few simple, spreading, stiff hairs. Leaflets running into the rachis, quite entire. Flowers purple, in short 8-10-flowered racemes; petals twice as long as the calyx; anthers white.

Purple-flowered Lady's-Smock. Pl. 1 foot.

† *Species not sufficiently known.*

53 C.? MULTI'FIDA (Banks, herb. Pursh, fl. bor. amer. 2. p. 440.) pubescent, branched; leaves interruptedly-pinnate; segments bi-pinnatifid, the extreme lobes roundish, cut; pods shorter than the pedicels. ♃. H. Native of Eastern Florida. Nastúrtium multífidum, Spreng. syst. 2. p. 885. Perhaps a species of *Brachýlobus.*

Multifid-leaved Lady's-Smock. Pl.?

54 C.? MENZI'ESII (D. C. syst. 2. p. 267.) canescent from stellate hairs; leaves pinnate; segments bi-pinnatifid, lobes small, acute; pods length of the pedicels. Native of the west coast of North America. Nastúrtium Menzíesii, Spreng. syst. 2. p. 883. Perhaps also a species of *Brachýlobus.* Flowers unknown.

Menzies's Lady's-Smock. Pl. 1 foot.

55 C.? GERANIIFÒLIA (D. C. syst. 2. p. 268.) very smooth;

leaves somewhat bipinnate; segments deeply-lobed, acute; pods awl-shaped, erect.—Native of the Straits of Magellan. Sisýmbrum geraniifòlium, Poir. dict. 7. p. 218. Petals white, obovate.

Geranium-leaved Lady's Smock. Pl. 1½ foot.

56 C. scuta'ta (Thunb. in Lin. trans. 2. p. 62.) radical leaves stalked, ternate, cauline ones few, with the terminal lobe roundish. —Native of Japan. C. trifòlia, Thunb. fl. jap. 260. but not of Lin.

Shield-leaved Lady's-Smock. Pl. ¼ foot.

57 C. nemoro'sa (Lejeun. fl. spa. 2. p. 62.) ♃. H. Very villous; leaves pinnate; segments roundish-angular. Native of France in woods about Malmedy and Encival. Flowers terminal, few, corymbose, a little larger and of a more deep purple than those of *C. praténsis*.

Grove Lady's-Smock. Fl. May, June. Pl. 1 foot.

58 C. articulata (Pursh. fl. bor. amer. 2. p. 439.) stem naked; radical leaves lanceolate, deeply-toothed, smooth. ♃. H. Native of North America on the western coast. Pods turgid, somewhat jointed.

Jointed-podded Lady's-Smock. Pl. ½ foot.

59 C. occu'lta (Horn. hort. hafn. suppl. p. 71.) radical leaves roundish; cauline ones pinnate or ternate; flowers without petals. ⊙. H. Native of China. Perhaps a species of *Nastúrtium*.

Hid-petalled Lady's-Smock. Fl. Ju. July. Clt. 1820. Pl. 1 ft.

60 C. heterophy'lla (Lapeyr. abr. pyr. 377.) plant smooth, simple; radical leaves roundish, with toothed petioles, cauline ones lyrate. ♂. H. Native of the Pyrenees, on the top of the mountain called Pic-du-Midi. Perhaps the same as *C. heterophýlla* of Bory. in ann. gen. sc. ph. 3. p. 6.? Petals equal in length with the closed calyx. Pods blunt, with a blunt appendage. Flowers white.

Variable-leaved Lady's-Smock. Pl. ½ foot.

61 C. propi'nqua (Carm. in Lin. soc. trans. 12. p. 507.) plant very smooth; leaves pinnate; segments blunt, toothed, terminal one largest.—Native of Tristan da-Cunha on the sides of mountains. Allied to *C. glaciàlis*.

Allied Lady's-Smock. Pl.?

62 C. bi'color (Presl. fl. cech. 136.) leaves pinnate, stipulate; segments elliptical-lanceolate, sessile; sepals roundish. ♃. H. B. Native of Bohemia in humid fields.

Two-coloured Lady's-Smock. Pl. 1 foot?

63 C. Opi'cii (Presl. fl. cech. p. 136.) leaves pinnate, stipulate; segments repandly-angular, sessile, lower ones roundish. ♃. H. B. Native of Bohemia in moist meadows. There are two varieties of this plant, one with hairy, the other with smoothish petioles.

Opici's Lady's-Smock. Pl.?

64 C. refle'xa (Raf. fl. lud. p. 84. no. 269.) ♃. H. B. Native of North America, near water, particularly in Louisiana. Flowers white. Petals reflexed, longer than the calyx. Perhaps referable to *C. Pennsylvánica*. Leaves smooth, pinnate; segments toothed at the top; racemes elongated.

Reflexed-petalled Lady's Smock. Pl. ¾ foot.

65 C. angustifòlia (Raf. fl. lud. p. 84. no. 270.) leaves pinnate; segments linear, filiform; pods erect. ♃. H. B. Native of Louisiana near water. A small plant.

Narrow-leaved Lady's-Smock. Pl.?

Cult. The greater part of the species require a moist or damp shady situation, but in any kind of soil. Some of the rarer kinds may be planted in pots, and these placed in pans of water. *C. hirsùta*, and several other species, produce young plants from the leaves. All that is necessary is to lay the leaf on a moist grassy surface, or on moss kept moist. The plant propagates itself extensively in this way in moist soils; but the easiest and most certain method is by dividing the perennial species at the root. The annual and biennial kinds only require to be sown in the open border in a damp situation, where they may be allowed afterwards to sow themselves. Many of the perennial kinds are very ornamental plants, but the annual and biennial kinds have a weedy appearance, and therefore they are only proper to be preserved in botanical gardens.

XIV. PTERONEU'RUM (from *πτερον, pteron*, a wing, and *νευρον, neuron*, a nerve; placentas with winged nerves.) D. C. syst. 2. p. 269. prod. 1. p. 154.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique lanceolate, with flat nerveless valves, usually opening with elasticity. Placentas with winged nerves. Funicle dilated. Style 2-edged. Roots fibrous. Leaves pinnate, with stalked segments. Racemes terminal. Pedicels filiform, bractless. Flowers white. Fruit like that of *Dentària*; the rest of the plant like *Cardámine*.

1 P. Java'nicum (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 644.) leaves ternate; leaflets stalked, ovate-oblong, deeply-toothed, lateral ones unequal at the base. ♃. S. Native of Java.

Java Pteroneurum. Pl. 1 foot.

2 P. decu'rrens (Blum. l. c.) leaves pinnate; leaflets usually 5, ovate, repand-toothed, rather ciliated, running into the petiole at the base. ♃. S. Native of Java.

Decurrent-leaved Pteroneurum. Pl. 1 foot.

3 P. carnòsum (D. C. syst. 2. p. 270.) segments of leaves ovate and somewhat emarginate, rather glaucous. ♃. H. Native of Hungary on calcareous mountains among loose stones. Cardámine carnòsa, Waldst. et Kit. hung. 2. p. 137. t. 129. Calyx spreading. Corolla double the length of the calyx. Petals white, obovate. Root and leaves fleshy. Stem purplish at the base.

Fleshy-leaved Pteroneurum. Fl. July, Aug. Clt. 1824. Pl. 1 ft.

4 P. Græ'cum (D. C. syst. 2. p. 270.) segments of leaves stalked, nearly orbicular, dentately-lobed. ⊙. H. Native of Corsica, Sicily, Italy, Greece, and most of the islands in the Archipelago, on shaded mountains. Cardámine Græca, Lin. spec. 915. Gært. fruct. 2. t. 143. Lam. ill. t. 562. f. 2. Smith fl. græc. t. 631. Flowers white, hardly the size of those of *C. amàra*. Herb pale, green, somewhat glaucous, having the appearance of a species of *Fumària* or *Thalictrum*.

Grecian Pteroneurum. Fl. Ju. July. Clt. 1710. Pl. ½ foot.

Cult. These plants succeed best in light sandy soil, and are well adapted for rock-work. The *P. carnòsum* may be increased by dividing the plant at the root or by seeds. The *P. Græ'cum* by seeds, which may be either sown in the rock-work, or in the open boder. The *Java* species will require to be kept in a stove.

XV. DENTA'RIA (from *dens*, a tooth; tooth-like structure of roots; for the same reason it is called *Toothwort* in English.) Tourn. inst. 225. t. 111. Lin. gen. no. 811. Lam. ill. t. 562. Juss. gen. D. C. syst. 2. p. 271. prod. 1. p. 154.

Lin. syst. *Tetradynámia, Siliquòsa.* Silique lanceolate, with flat nerveless valves, usually opening with elasticity. Placentas not winged. Funicle dilated. Seeds ovate, not margined, disposed in one row. Radical trunt fleshy, horizontal, irregularly toothed. Scape erect, bearing the raceme at the top. Radical leaves none or few, on long stalks; cauline one stalked, placed on the middle of the scape, usually in threes, alternate, or in whorles, palmately or pinnately-cut. Pedicels filiform, bractless. Flowers white, cream-coloured or purplish.

§ 1. *Verticillàtæ. Stem leaves whorled. Style long. Valves terminating at the base of the style, hardly acuminated.*

1 D. polyphy'lla (Walds. et Kit. pl. rar. hung. 2. p. 174. t. 160.) leaves 3, in a whorl, or alternate, stalked, pinnate; segments 7 or 9, approximate, lanceolate, acuminated, serrated.

4. H. Native of Hungary in shady moist places of woods. Flowers large, cream-coloured.

Var. β, D. ochroleùca (Gaud. herb.) segments of leaves short, ciliated. Native of Switzerland and Piedmont.

Many-leaved Toothwort. Fl. May, June. Clt. 1817. Pl. 1 ft.

2 D. ENNEAPHY'LLA (Lin. spec. 912.) leaves 3, in a whorl, stalked, ternate; segments ovate-lanceolate, acuminated, serrated; stamens length of petals. 4. H. Native of mountain woods, particularly on the Carpathian mountains among the beech, and even at the height of 4600 feet among the Pinus Mughus, also in Styria, Hungary, Austria, Carniola, Piedmont, &c. Jacq. aust. t. 361. Cardámine enneaphýllos, Crantz. cruc. p. 27. Cardámine enneaphylla, R. Br. in hort. kew. ed. 2. vol. 4. p. 101.—Lob. icon. t. 687.—Morr. oxon. 2. p. 254. sect. 3. t. 10. f. 1. Flowers white, when dry cream-coloured. Herb acrid.

Nine-leaved Toothwort. Fl. April, June. Clt. 1659. Pl. 1 ft.

3 D. GLANDULÒSA (Waldst. et Kit. hung. 3. p. 302. t. 272.) leaves 3 in a whorl, stalked, ternate; segments oval-lanceolate, acuminated, serrated, bearing glands in the axillæ; stamens one-half shorter than the petals. 4. H. Native of Hungary in humid woods; in Transylvania on mount Gætzenberg. Petals purplish, much longer and larger than the calyx.

Glandular Toothwort. Fl. May, June. Clt. 1815. Pl. 1 foot.

4 D. LACINIA'TA (Muhl. cat. 60.) leaves 3 in a whorl, on short stalks, 3-parted; lobes or segments linear, entire or deeply serrated, or jagged. 4. H. Native of North America in mountain woods, from New England to Canada, particularly on the highest mountains of Carolina, also in Pennsylvania about West Chester. D. concatenàta, Michx. fl. bor. amer. 1. p. 30. Flowers large. Petals oblong, rose-coloured, or almost white.

Var. β, mìnor (D. C. syst. 2. p. 273.) plant smaller in all its parts, hardly 3 inches high.

Jagged-leaved Toothwort. Fl. April, June. Clt. 1823. Pl. 1 ft.

5 D. HETEROPHY'LLA (Nutt. gen. amer. 2. p. 66.) cauline leaves 2, opposite, stalked, ternate; segments lanceolate-linear, entire. 4. H. Native of western Pennsylvania under the shade of pine woods; on banks at Wishahikon Bay, not far from Philadelphia. This is the smallest of all the species. Flowers pale-purple, about the size of those of *Cardámine pratènsis*.

Variable-leaved Toothwort. Pl. ½ foot.

§ 2. *Palmatifòlia. Cauline leaves alternate, palmately-cut into 3 or 5 sections.*

6 D. TENE'LLA (Pursh. fl. amer. sept. 2. p. 439.) leaves 2, alternate, sessile, cut in 3 linear-elliptical entire segments. 4. H. Native of North America along the banks of the Columbia river. Flowers purple, about the size of those of *Cardámine praténsis*.

Slender Toothwort. Fl. April, June. Clt. 1826. Pl. ¾ foot.

7 D. DIPHY'LLA (Mich. fl. bor. amer. 2. p. 30.) cauline leaves 2, alternate, on short stalks, cut into 3 ovate-lanceolate grossly and unequally serrate-lobed segments. 4. H. Native of North America from Pennsylvania to Canada, on the higher mountains in shady beech woods. Sims, bot. mag. t. 1465. Dentària bifòlia, Stok. mat. med. 3. p. 443. Petals ovate, white on the inside, and purple on the outside (Sims), pale red, with a tinge of yellow (Pursh), yellowish (Mich.). The roots of this plant have a pungent mustard-like-taste, and are used by the natives in the mountains instead of mustard, where it is generally known by the name of *Pepper-root*.

Two-leaved Toothwort. Fl. May, June. Clt. 1810. Pl. ½ to 1 ft.

8 D. MA'XIMA (Nutt. gen. amer. 2. p. 66.) leaves many, alternate, stalked, cut into 3 broad oval deeply-toothed segments. 4. H. Native of the western parts of Pennsylvania, and in the fields about New York. Flowers pale-purple. Petals oblong-oval.

Largest Toothwort. Fl. May, June. Clt. 1823. Pl. 2 feet.

9 D. TRIFÒLIA (Waldst. et Kit. hung. 2. p. 148. t. 139.) leaves many, alternate, stalked, cut into 3 ovate-lanceolate remotely-toothed segments, bearing glands in the axillæ. 4. H. Native of Hungary in shady valleys. Petals white, obovate, spreading 3 times longer than the calyx.

Three-leaved Toothwort. Fl. May, June. Clt. 1824. Pl. 1 ft.

10 D. DIGITA'TA (Lam. dict. 2. p. 268.) cauline leaves many, alternate, stalked, palmately cut into 5 oblong-lanceolate, pointed, grossly serrated segments. 4. H. Native of France, Germany, Switzerland, upper Italy, and Carniola, &c. in shady mountain woods. Dentària pentaphýllos, Lin. spec. 912. var. β and γ, Scop. carn. no. 814. Sims, bot. mag. t. 2202. Cardámine pentaphýlla, R. Br. in hort. kew. ed. 2. vol. 4. p. 101. —Clus. hist. 2. p. 122. f. 1. Mor. oxon. 2. p. 255. no. 3. sect. 3. t. 10. f. 3.—Taber. icon. p. 323 and 324.—Garid. aix. prov. p. 152. t. 29. Flowers white or rather purplish.

Digitate-leaved Toothwort. Fl. My. Ju. Clt. 1659. Pl. to 1½ ft.

§ 3. *Pinnatifòlia. Cauline leaves pinnate, alternate.*

11 D. PINNA'TA (Lam. dict. 2. p. 268. ill. t. 562. f. 1.) cauline leaves alternate, stalked, pinnate; segments oblong, acuminated, serrate-toothed. 4. H. Native of France, Italy, and Switzerland, in shady mountain woods. Boiss. fl. europ. t. 449. Stok. mat. med. 3. p. 444. D. heptaphýllos, Vill. dauph. 3. p. 364. D. pentaphyllos β, Lam. fl. fr. 2. p. 498. Cardámine pinnàta, R. Br. in hort. kew. ed. 2. vol. 4. p. 101.—Garid. aix. prov. p. 152. t. 28. Swert, floril. 2. t. 23. This plant differs from *D. bulbífera*, to which it is nearly allied, by the superior leaves being never undivided, and also from its not bearing bulbs in the axillæ. Flowers white.

Pinnate-leaved Toothwort. Fl. May, Ju. Clt. 1683. Pl. 1 ft.

12 D. WALLI'CHII; leaflets 9-12, opposite, lanceolate, mucronate, deeply and bluntly serrated, pilose beneath, as well as the stem, which is simple; racemes many-flowered, pubescent. 4. H. Native of Gosaingsthan. Leaves a span in length; leaflets 3 inches in length. Flowers pale purple. This plant differs from *D. pinnàta* in the leaves being furnished with a greater number of leaflets. Cardámine polyphýlla, D. Don. prod. fl. nep. p. 202.

Wallich's Toothwort. Pl. 1½ foot.

13 D. QUINQUEFÒLIA (Bieb. fl. taur. 2. p. 109. suppl. 436.) cauline leaves 3, alternate or whorled, pinnate; segments 5 or 7, oblong-linear, grossly toothed, terminal one not confluent. 4. H. Native of Tauria and Caucasus, and in the Ukraine, and about the town of Lubni in Russia Minor, under trees and in woods. D. Caucásica, Willd. herb. D. pinnàta, Pall. ined. D. pentaphýllos, Guldenst. itin. 1. p. 194. 420. Very like *D. pinnàta Hypánica* and *bulbífera*. Flowers pale-purple? Deless. icon. sel. 2. t. 33.

Five-leaved Toothwort. Fl. April, Ju. Clt. 1823. Pl. 1 foot.

14 D. HYPA'NICA (Besser, in litt. D. C. syst. 2. p. 278.) cauline leaves 3, alternate or in a whorl, pinnate; segments 5-7, oblong-linear, toothed, terminal one confluent. 4. H. Native of Bessarabia and Podolia on the banks of the river Hypanis, sometimes called Bog river. Nearly allied to *D. quinquefòlia*, and easily confused with it; it is principally distinguished from it by the ultimate segment of the leaves being never cut down to the base, but confluent. Flowers pale-purple?

Hypan Toothwort. Fl. April, May. Pl. 1 foot.

15 D. BULBI'FERA (Lin. spec. 912.) cauline leaves alternate, pinnate, upper one undivided, for the most part bearing bulbs in the axillæ. 4. H. Native of Sweden, France, Switzerland, Italy, Germany, Greece, Transylvania, Carniola, Iberia, and

Caucasus, at the base of mountains in shady humid places. In England, near Mayfield, Sussex; in the old park-wood near Harefield, Middlesex, abundantly; in woods between Beaconsfield and Wickham, plentifully; on the north side of the high rocks at Tunbridge Wells, and elsewhere in that neighbourhood. Smith, eng. bot. t. 309. Fl. dan. t. 361. Schkuhr. handb. 2. t. 183. Tratt. arch. 4. t. 188. Stok. bot. mat. med. 3. p. 443. Flowers purple, but they are said to be sometimes white.

Var. β, *ptarmicæfòlia* (D. C. syst. 2. p. 279.) upper leaves more sharply-serrated.—Besl. hort. eyst. œst. ord. 7. t. 12. f. 2. —Mor. oxon. 2. p. 255. f. 6.

Bulb-bearing Toothwort. Fl. April, May. England. Pl. 1½ to 2 feet.

16 D. microphy'lla (Willd. spec. 3. p. 479.) cauline leaves 3, alternate or somewhat verticillate, all pinnate, segments 7-11, linear-lanceolate, entire or somewhat toothed. ♃. H. Native of Caucasus and Iberia, in woods. Bieb. fl. taur. 2. p. 108. Flowers purplish, almost like those of *D. pinnàta*.

Small-leaved Toothwort. Fl. April, May. Pl. ½ foot.

17 D. tenuifòlia (Lebeb. mem. acad. peters. 5. 1815. p. 547.) cauline leaves on short stalks, alternate, some of which are ternate, others pinnately-quinate; segments linear, acute, quite entire; root fibrous, bearing roundish tubers. ♃. H. Native of Siberia, on the banks of rivers, and in humid meadows; also of North America, on the banks of the Columbia. D. trífida, Lam. ill. t. 562. f. 2. D. tuberòsa, Patrin, ined.—Gmel. sib. 3. p. 272. no. 41. t. 65. Flowers rose-coloured or purple, size of those of *Cardámine praténsis*.

Var. β, *incìsa*; segments of leaves deeply notched. ♃. H. Native of the Ural Mountains, in Siberia.

Fine-leaved Toothwort. Fl. May, Jul. Clt. 1825. Pl. ½ foot.

Cult. These plants succeed best in a light sandy soil, in moist shady situations. They may be either increased by dividing the roots, or by seeds. The *D. bulbífera* may be encreased by the bulbs which grow in the axillæ of the leaves. They are all ornamental plants, and deserve to be cultivated.

XVI. PA'RRYA (in honour of Captain William Edward Parry, R. N. formerly commander of the expeditions sent in search of a North-West passage.) R. Br. in Parry's 1st. voy. app. p. 269. t. B. Hook. fl. bor amer. p. 46.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique broad-linear, with flat valves, which are more or less distinctly veined. Seeds disposed in something like 2-rows, edged with a broad wing. Umbilical cord adnate to the dissepiment above. Lobes of stigma approximate. Evergreen perennial herbs with lanceolate or oblong rather fleshy, toothed or entire leaves, and pale rose-coloured flower. Roots thick, woody, fusiform, covered with the vestiges of the old leaves at their neck.

1 P. macroca'rpa (R. Brown, in Parry's 1st. voy. app. p. 270. Hook. fl. bor. amer. p. 47. t. 15.) siliques broad-linear; anthers linear; leaves broad, lanceolate, deeply toothed. ♃. H. Native of North America, to the west of Mackenzie River, frequent on the shores of Kotzebue's Sound, and the adjacent coast, and the Island of St. Lawrence. Originally found in Siberia. Neurolòma arabiflòrum, D. C. prod. 1. p. 156. Hesperis arabiflòra, D. C. syst. 2. p. 454. Neurolòma nudicaúle, D. C. prod. 1. p. 156. A'rabis nudicaúle, D. C. syst. 2. p. 240. Cardámine articulàta, Pursh. fl. sept. amer. 2. p. 439? Cardámine nudicaúlis, Lin. spec. 913. Flowers in corymbs, large, of a purple rose-colour.

Var. α, *áspera* (Hook. l. c.) plant beset with glandular hairs. ♃. H. A'rabis caule nudo, Lin. amœn. acad. 2. p. 358. t. 4. f. 20. A'rabis grandiflòra, Willd. spec. pl. Neurolòma arabiflòrum β, D. C. l. c.

Var. β, *glàbra* (Hook. l. c.) plant quite smooth. Neurolòma arabiflòrum α, D. C.

Long-fruited Parrya. Fl. May, June. Clt. 1798. Pl. ½ foot.

2 P. a'rctica (R. Br. in Parry's 1st. voy. app. p. 269. t. B.) siliques linear oblong; anthers oval; leaves (almost all) quite entire; peduncles quite smooth. ♃. H. Native of North America in the Eastern Arctic Islands, and shores of the continent of Arctic America eastward of the Mackenzie river. Flowers in corymbs, of a pale purple-colour.

Arctic Parrya. Fl. May, June. Clt. 1820. Pl. ¼ foot.

3 P. exsca'pa (Ledeb. ex Hook. fl. bor. amer. p. 48.) pedicels appear to spring from the top of the root without any scape, and by the number and size of the flowers appear to conceal the leaves; siliques 4-inches long; seeds hardly margined; umbilical cord wholly fixed to the dissepiment. ♃. H. Native of the Altaian mountains. Flowers probably rose-coloured.

Scapeless Parrya. Pl. ¼ foot.

4 P. scapígera; pedicels length of calyx; petals rather emarginate; leaves almost all radical, stalked, lanceolate, fleshy, smooth as well as the stem. ♃. H. Native of Siberia, at the mouth of the river Lena, at Cape Bykofskoy, and also at the mouth of the river Volga. Neurolòma scapígerum, D. C. prod. 1. p. 156. Hésperis scapíger, D. C. syst. 2. p. 454. Cheiránthus scapíger, Adam, mem. soc. nat. mosc. 5. p. 112. no. 18. Flowers violet, about the size of those of *Hésperis matronàlis*, disposed in racemose corymbs. Leaves entire or toothed.

Scape-bearing Parrya. Pl. ½ foot.

5 P. intege'rrima; stem suffruticose at the base; radical leaves rather spatulate, quite entire; cauline ones few; racemes at first corymbose. ♄. H. Native of Siberia. Flower beautiful purple, about the size of those of *Cardámine praténsis*, Sweet, brit. fl. gard. icon. ined. but perhaps under a different name.

Very-entire-leaved Parrya. Fl. April, May. Clt. 1827. Pl. ½ foot.

Cult. The species of this genus are well adapted for ornamenting rock-work, but as they are very rare and apt to be killed in the winter, we therefore would recommend a plant or two of each to be planted in pots, and placed among other alpine plants. A mixture of sand, loam, and peat will answer them well; the pots which they are planted in should be well drained with potsherds. They may be increased by dividing the plants at the root, but more readily by seeds or by young cuttings.

Tribe II.

ALYSSI'NEÆ (plants agreeing with Alyssum in some important characters) or PLEURORHI'ZÆ (πλευρα, *pleura*, a side, ριζα, *rhiza*, a root; radicle at side of cotyledons: f. 46. *c.*) LATISE'PTÆ (*latus*, broad, and *septum*, a dissepiment.) D. C. syst. 2. p. 280. prod. 1. p. 156. Silicle opening longitudinally, with a broad oval membranous dissepiment, and flat or concave valves. Seed compressed, usually margined (f. 46. *g. h.*). Cotyledons flat, accumbent, parallel with the dissepiment (f. 46. *c.*; f. 45. *g.*).

XVII. LUNA'RIA (from *luna*, the moon; resemblance in broad silvery dissepiment.) Lin gen. no. 809. Gært. fruct. 2. p. 288. t. 124. Lam. ill. t. 561. D. C. syst. 2. p. 280. prod. 1. p. 156.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle stalked, elliptical or lanceolate, with flat valves. Funicles long, adhering to the dissepiment Calyx somewhat bisaccate. Petals nearly entire. Stamens not toothed. Large somewhat pilose herbs, with round, erect, branched stems, and cordate grossly toothed, alternate or opposite stalked leaves. Flowers large, elegant, lilac. Racemes terminal; pedicels filiform bractless. Dissepiments

permanent, silvery. The English name of the genus, *Honesty*, is given to it on account of the clear brilliant dissepiment.

1 L. REDIVÌVA (Lin. spec. 911.) pods lanceolate, narrowed at both ends. ♃. H. Native of France, Switzerland, Germany, Italy, Transylvania, &c. &c. in mountain woods. Lam. ill. t. 561. f. 1. L. odoràta, Lam. fl. fr. 2. p. 457. L. Ricòtia, Gært. fruct. 2. p. 289. t. 142. L. perénnis, Gmel. fl. bad. 3. p. 48. L. lanceolàta, Stok. bot. mat. med. 3. p. 442. Flowers sweet-scented, purplish.

Var. β, *purpùrea* (D. C. syst. 2. p. 281.) flowers purple.

Var. γ, *alpìna* (D. C. syst. 2. p. 281.) upper leaves less cordate; pods narrower. Tab. icon. 512. Lunària alpìna, Berg. phyt. 3. p. 115.

Perennial Honesty. Fl. May, June. Clt. 1596. Pl. 2 or 3 feet.

2 L. BIE'NNIS (Mœnch. meth. 261.) pods elliptical, blunt at both ends. ♂. H. Native of Sweden, Germany, France, Switzerland, &c. in mountain woods. L. ánnua, Lin. spec. 911. Lam. ill. t. 561. f. 2. Schkuhr. handb. 2. no. 1829. t. 182. L. inodòra, Lam. fl. fr. 2. p. 457. L. redivìva, Gært. fruct. 2. p. 288. t. 142. exclusive of the synonyms. L. ovàlis, Stok. bot. mat. med. 3. p. 441. Flowers violet-lilac, scentless.

In German this plant is named *Mondviole, Mondkraut, Silberblume, Silberblatt, Flittern, Atlasblume, Waldriegel.* In Dutch, *Maankruid, Penningkruid, Zilverbloeme.* In Danish, *Maaneviol, Manefioler.* In French, *La Lunaire, Satinee, Satin blanc, Passe Satin, Medaille, Herbe aux lunettes.*

Var. β, *albiflòra* (D. C. syst. 2. p. 282.) Flowers white.—Morr. oxon. 2. p. 246. no. 2.

Var. γ, *corcyræ'a* (D. C. syst. 2. p. 283.) pods almost orbicular. Native of the island of Corcyra. Perhaps a distinct species.

Biennial Honesty. Fl. May, June. Clt. 1595. Pl. 1½ to 3 ft.

Cult. The species of *Lunària* are large well-known ornamental plants. They thrive well in the open border, in common garden soil. The *L. biénnis* can only be increased by seeds, which should be sown in the border where the plants are intended to remain, or they may be transplanted. The *L. redivìva* may be either increased by dividing the plant at the root, or by seeds.

XVIII. RICO'TIA (Ricot, probably the name of some obscure botanist.) Lin. gen. no. 810. Lam. ill. t. 561. D. C. syst. 2. p. 284. prod. 1. p. 157.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle sessile, elliptical, when ripe losing its dissepiment and becoming 1-celled: valves flat. Funicles long, free. Seeds when young 4, when ripe, solitary and nearly central in the cell. Calyx with two protuberances at the base. Petals entire. Stamens toothless. Smooth, slender, branched, annual herbs, with variable pinnate-lobed, stalked leaves, and filiform bractless pedicels, which are disposed in elongated racemes, bearing pale lilac-coloured flowers about the size and appearance of those of *Cakìle.*

1 R. LUNA'RIA (D. C. syst. 2. p. 284.) leaves almost bipinnate; lobes oblong, sinuated, angular. ☉. H. Native of Syria not far from Saleyeh, also on Mount Carmel near Ptolemy. R. Ægyptìaca, Lin. spec. 912. Lam. ill. t. 561. Ker. bot. reg. 49. Cardámine Lunària, Lin. spec. ed. 1. p. 656. Lunària Ricòtia, Gært. fruct. 2. p. 289. t. 142.—Mill. icon. 2. p. 113. t. 169. Plant twisted, somewhat scandent. Petals lilac, with white claws. Pods ovate lanceolate.

Moon-podded Ricotia. Fl. Jun. Jul. Clt. 1757. Pl. ¾ foot.

2 R. TENUIFÒLIA (Smith. fl. græc. t. 630.) leaves somewhat bipinnatifid; lobes linear. ☉. H. Native of Caramania. Peltària Caramaniénsis, Sibth. in herb. Banks. Stem much branched, twiggy. Flowers lilac. Pods compressed, flat, obovate, blunt.

Fine-leaved Ricotia. Fl. Jun. Jul. Pl. ½ foot.

† *A species not sufficiently known.*

3 R. CANTONE'NSIS (Lour. coch. ed. Willd. 2. p. 482.) leaves oblong, pinnate-cut. Native of China about Canton. Lunària Ricòtia, Desv. journ. bot. 3. p. 174. Pods oblong, compressed, thin, nearly sessile, differing from *Ricòtia* in having yellow flowers and many-seeded pods.

Canton Ricotia. Pl. ¾ foot.

Cult. This genus of pretty annuals is well adapted for ornamenting rock-work, where the seed should be sown, or they may be sown in the open border. A light sandy soil suits them best.

XIX. FARSE'TIA (in honour of Philip Farseti, a noble Venetian botanist.) Turra fars. 1765. Desv. journ. bot. 3. p. 173. D. C. syst. 2. p. 286. prod. 1. p. 157.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle sessile ovate (f. 46. *g.*), or orbicular, with flat valves (f. 46. *g.*). Seed winged (f. 46. *g.*). Calyx bisaccate at the base. Petals entire. Branched, erect herbs or sub-shrubs, which are more or less hoary or downy. Leaves entire, oblong. Racemes terminal; pedicels filiform without bracteas, or furnished sometimes with leafy bracteas. Flowers yellow, or dirty whitish-purple.

SECT. I. FARSETIA'NA (D. C. prod. 1. p. 157. Farsètia, D. C. syst. 2. p. 287.) Petals oblong-linear, entire, whitish-purple. Stamens all toothless. Pods elliptical; dissepiment pierced at the base.

1 F. ÆGYPTI'ACA (Turr. diss. fars. 1765. 4to. p. 1. t. 1.) stems shrubby, erect; leaves linear, pressed, hoary. ♄. G. Native of Egypt, in the desert of Cairo, and about Aleppo; in Mauritania, at the bottom of mountains near Cafza. Cheiránthus Farsètia, Lin. mant. 94. Desf. atl. 2. p. 89. t. 160. Lunària scàbra, Forsk. ægyp. desc. 117. Farsètia cheiranthoìdes, R. Br. in hort. kew. ed. 2. vol. 4. p. 96. Stem much branched.

Egyptian Farsetia. Fl. Ju. July. Clt. 1788. Pl. 1 foot.

2 F. STYLÒSA (R. Br. in append to Denh. and Clapper. journ. p. 12.) plant much branched; silicle oblong, many-seeded; lobes of stigma spreading. ♄. G. Native about Tripoli. Leaves not seen.

Broad-*styled* Farsetia. Pl. 1 foot?

SECT. II. CYCLOCARPÆ'A (from κυκλος, *kyklos*, a circle, and καρπος, *karpos*, a fruit; orbicular pods.) D. C. syst. 2. p. 287. prod. 1. p. 157. Petals oblong, somewhat emarginate. Smaller stamens furnished with a tooth. Pods orbicular, smooth, with an entire dissepiment.

3 F. SUFFRUTICÒSA (D. C. syst. 2. p. 287.) stems at base somewhat shrubby, erect; leaves lanceolate, downy. ♄. G. Native of Persia, between Hamadan and Casbin, and at Mount Elwend. Lunària suffruticòsa, Vent. cels. t. 19. Flowers rather drooping, scentless, of a violet-lilac colour. Sepals velvety.

Suffruticose Farsetia. Fl. Apr. May. Clt. 1830. Pl. 1 foot.

SECT. III. FIBÍGIA (derivation unknown.) D. C. syst. 2. p. 288. Med. gen. 1. p. 90. t. 2. f. 23. D. C. prod. 1. p. 157. Laminæ of petals ovate or oval, yellow, entire, smaller stamens furnished each with a tooth. Pods elliptic: dissepiment entire, bounded by narrow linear areolæ. This section is considered by Mr. Brown sufficient to constitute a genus.

4 F. LUNARIOÌDES (R. Br. in hort. kew. ed. 2. vol. 4. p. 96.) stems suffruticose, ascendant; leaves oblong-obovate, stalked, and are as well as the pods downy-hoary. ♃. H. Native of the islands in the Archipelago. Lunària Græ'ca, Willd. enum.

2. p. 675. Lunària perénnis, Mill. dict. no. 4. Alyssum lunarioìdes, Willd. spec. 3. p. 461.—Tourn. itin. ed. gall. 1. p. 242. t. 30. Flowers yellow; limb of petals ovate; sepals whitish.

Lunaria-like Farsetia. Fl. Ju. July. Clt. 1731. Pl. 1 foot.

5 F. eriocá'rpa (D. C. syst. 2. p. 288.) stems erect, shrubby at the base; leaves oblong; pods densely clothed with silky-hairs. (f. 46. *g*.) ♄.G. Native of the island of Cyprus. Very like *F. clypeàta*, but differs in the pods being clothed with long, simple, crowded white hairs, not with short hairs. Deless. icon. sel. 2. t. 34. Flowers not seen.

Woolly-podded Farsetia. Pl. 1 foot.

6 F. clypea'ta (R. Br. in hort. kew. ed. 2. vol. 4. p. 96.) stems herbaceous, erect; leaves oblong, repand; pods velvety from short down; stigma capitate. ♂. H. Native of rocky hills and mountains in the south of Europe, on mounts Maronis and Lebanon in Sicily; frequent in Asia-Minor, Tauria, and in Iberia, about Tiflis, &c. Sweet, fl. gard. icon. Alýssum clypeàtum, Lin. spec. 909. Schkuhr. handb. 2. no. 1815. t. 181. Dràba clypeàta, Lam. dict. 2. p. 328. Lunària clypeàta, All. ped. 1. p. 245. no. 899. Lunària canéscens, Willd. enum. 2. p. 675.—Lob. icon. t. 323. f. 1. Petals yellow, oblong, bluntly truncate.

Var. α, *ebracteàta* (Bœrh. ined. alt. 2. 6. no. 7.) pedicels without bracteas.

Var. β, *bracteàta* (Bœrh. ined. alt. 2. 7. no. 10.) pedicels furnished with bracteas.

Buckler-podded Farsetia. Fl. Ju. Jul. Clt. 1596. Pl. 1 to 2 ft.

7 F. cheiranthifòlia (Desv. journ. 3. p. 173.) stem erect, herbaceous; leaves lanceolate, hairy, quite entire; pods velvety with short down; stigma bifid. ♂. H. Native of the Levant. Alýssum cheiranthifòlium, Willd. spec. 3. p. 468. Very like *F. clypeàta*, but the leaves are less hoary. Flowers yellow.

Wall-flower-leaved Farsetia. Pl. 1 foot.

8 F. triqué'tra (D. C. syst. 2. p. 290.) stems at base suffruticose; branches triquetrous, ascendant; leaves downy, radical ones obovate, stalked, cauline ones oblong-lanceolate; style long, deciduous; stigma simple. ♄. F. Native of Dalmatia, on rocks. Welden. icon. ined. t. 11. Pods elliptical. Flowers yellowish. Stamens toothless.

Triquetrous-branched Farsetia. Fl. April, May. Pl. ¼ decumbent.

Cult. The green-house kinds of this genus thrive well in a mixture of sandy loam and peat; and young cuttings strike root readily in the same kind of soil, under a hand-glass, or they may be raised from seeds, which sometimes ripen in abundance. The hardy perennial kinds are well adapted for rock-work or for the front of flower-borders; or they may be grown in small pots, in a mixture of loam and peat, and placed among other alpine plants, so as to be protected by a frame during severe weather; they are readily increased by seeds, or by cuttings planted under a hand-glass. The biennial species are also well adapted for rock-work, or the front of flower-borders; they should be sown where they are intended to remain, or they may be transplanted.

XX. KONI'GA (*Konig* of Adauson, and in honour of Charles Konig, F.R.S. F.L.S. superintendant of the natural history department in the British Museum.) R. Br. in append. Denh. and Clapp. exp. afr. p. 9.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle somewhat ovate, with flattish valves and 1 or many-seeded cells. Funicle adhering to the base of the dissepiment. Seeds usually margined. Calyx spreading. Petals quite entire. Glands 8, hypogynous. Filaments all toothless. Annual or perennial herbs white from appressed forked down. Leaves quite entire, almost linear. Racemes terminal, sometimes leafy at the base. Flowers white.

1 K. mari'tima (R. Br. l. c.) cells 1-seeded. ♄. G. ⊙. H. Native along the Mediterranean Sea, in the sand, and in other parts of the south of Europe. Alýssum halamifòlium, Lin. spec. 907. Curt. bot. mag. t. 101. A. mínimum, Lin. spec. 908. Clypèola marítima, Lin. mant. 426. A. marítimum, Lam. dict. 1. p. 98. Dràba marítima, Lam. fl. fr. 2. p. 461. Lepídium fràgrans, Willd. in Ust. bot. mag. 11. p. 37. Lobulària marítima, Desv. journ. bot. 3. p. 62.

Var. β, *Canariénsis*; stems longer; cells usually 2-seeded. ♄. G. Native of the Islands of Teneriffe and Grand Canary.

Var. γ, *variegàta*; leaves edged with white or yellow. ♄. G.

Sea-side Koniga. Fl. Jun. Nov. Britain. Pl. procumbent or erect.

2 K. Líbyca (R. Br. l. c.) cells many-seeded, usually six. ♄. F. or ⊙. H. Native of Africa near Tripoli. Lunaria Líbyca, Viv. fl. lib. spec. p. 34. t. 16. f. 1.

Libyan Koniga. Fl. Jun. Nov. Pl. erect.

Cult. These plants will grow freely if sown in the open border as other hardy annuals. The striped variety of *K. marítima* should be kept as a green-house shrub, and it should be increased by cuttings, which strike root readily if planted under a hand-glass.

XXI. BERTERO'A (in honour of Charles Joseph Bertero, a pupil of Balbis and friend of De Candolle, who speaks in high terms of his merit.) D. C. syst. 2. p. 290. prod. 1. p. 158.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle sessile, elliptical or obovate, with flat or concave valves. Calyx equal at the base. Petals 2-parted. Smaller stamens toothed. Seeds oval, flat, with narrow margins. Erect, branched herbs or sub-shrubs, hoary with branched hairs. Leaves oblong-linear, entire or somewhat sinuated. Racemes opposite the leaves and terminal, many-flowered, corymbose, at length becoming elongated; pedicels filiform, erect, bractless. Flowers small, white.

1 B. inca'na (D. C. syst. 2. p. 291.) pods pubescent, somewhat ventricose. ♂. H. Native of many parts of Europe among rubbish, sandy, and uncultivated places, exposed to the sun. Alýssum incànum, Lin. spec. 978. Horn. fl. dan. t. 1461. Dràba cheirifòlia, Berg. phyt. icon. Dràba cheiranthifòlia, Lam. dict. 2. p. 328. Mœnchia incàna, Roth. fl. germ. 1. p. 273. Farsètia incàna, R. Br. in hort. kew. ed. 2. vol. 4. p. 97. Stevènia incàna, Andrz. cruc. ined. Pods oval, oblong, with membranaceous convex valves which are, when ripe, smooth. The whole plant hoary with pressed stellate hairs, but in moist ground it becomes smooth. Flowers white.

Var. β, *prolífera* (D. C. syst. l. c.) each calyx bearing three flowers instead of one, the 2 lateral ones sessile, the middle one stalked. Native of Tauria.

Hoary Berteroa. Fl. May, Oct. Clt. 1640. Pl. 1 to 2 feet.

2 B. muta'bilis (D. C. syst. 2. p. 292.) pods compressed, flat, elliptical, smooth. ♃. H. Native of the island Corcyra. Alýssum mutábile, Vent. cels. t. 85. Farsètia mutábilis, R. Br. in hort. kew. ed. 2. vol. 4. p. 96. Dràba mutábilis, Desv. journ. 3. p. 172. Very nearly allied to *B. incàna*, but the stems are evidently shrubby at the base, and permanent, and the plants less hoary. Petals when young white, adult ones pale rose-coloured, with yellowish claws, bluntly bifid.

Changeable-flowered Berteroa. Fl. July, Aug. Clt. 1802. Pl. 1 to 2 feet.

3 B. obli'qua (D. C. syst. 2. p. 292.) pods flat, elliptical, pubescent. ♃. H. Native of Rome, Naples, Sicily, and Calabria, in fields. Alýssum oblìquum, Smith, fl. græc. t. 623. Farsètia oblìqua, Spreng. syst. 2. p. 870. An intermediate plant between the two preceding species, differing from *B. incàna* in the valves

of the silicles being flat, and from *B. mutábilis* in the silicles being downy. Flowers white; petals bifid.

Oblique Berteroa. Fl. July, Aug. Clt. 1824. Pl. 1 to 2 feet.

4 B. ORBICULA'TA (D. C. syst. 2. p. 293.) pods flat, obovately orbicular, pubescent. ♄. H. Native in the sand at Xerxis Channel. Alỳssum orbiculàtum, D. Urv. Farsètia orbiculàta, Spreng. syst. 2. p. 870. Leaves and stems hoary with stellate hairs. Flowers white; petals bifid.

Orbicular-podded Berteroa. Fl. Jul. Aug. Pl. 1 ft. decumbent.

5 B. PERUVIA'NA (D. C. syst. 2. p. 293.) pods ovate-oblong, scabrous with small hairs; pedicels bracteate. ♃. ♄. G. Native of Peru in the coldest places. Farsètia Peruviàna, Spreng. Petals obcordate, twice the length of the calyx. Leaves and stems scabrous with distant stellate hairs.

Cult. As the species of this genus ripen seed in abundance, it is the best method of increasing them. They only require to be sown in the open border, but, however, young cuttings of the shrubby sorts planted under a hand-glass will root freely. Not worth cultivating except in botanic gardens.

XXII. AUBRIE'TIA (in honour of M. Aubriet, a famous French botanical draughtsman.) Adams, fam. 2. p. 420. D. C. syst. 2. p. 293. prod. 1. p. 158.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle oblong, with convex valves. Seeds not margined. Calyx bisaccate at the base. Petals entire. Smaller stamens toothed. Small evergreen pilose herbs, with ovate or oblong entire, or angularly-toothed leaves, which are covered with simple and branched hairs. Racemes opposite the leaves and terminal, lax, few-flowered. Pedicels filiform, bractless. Flowers purplish, seldom white.

1 A. DELTOI'DEA (D. C. syst. 2. p. 294.) pedicels longer than the calyx. ♃. H. Native of Naples near Aversa, of Sicily on the Nebrodes and near Palermo, on mount Lebanon, and of Greece, &c. &c. on rocky mountains. Alýssum deltoìdeum, Lin. spec. 908. Curt. bot. mag. t. 126. Smith, fl. græc. t. 628. Farsètia deltoìdea, R. Br. in hort. kew. ed. 2. vol. 4. p. 97. Vesicària deltoìdea, Poir. dict. 8. p. 572. Stem prostrate, ascendant. Leaves with 1 or 2 large teeth on each side, therefore they are rhomboidal, not truly deltoid, scabrous, with short branchy stellate hairs. Petals twice the length of the calyx, with long claws, purplish.

Deltoid-leaved Aubrietia. Fl. March, May. Clt. 1710. Pl. prostrate.

2 A. PURPU'REA (D. C. syst. 2. p. 294.) pedicels shorter than the calyx. ♃. H. Native of Bithynia on the top of mount Olympus. A'rabis purpùrea, Smith, fl. græc. t. 643. Dràba hesperidifòlia, Lam. dict. 2. p. 328. A small tufted plant, with oblong entire or toothed leaves, which are hispid with stellate or branched down as well as the younger stems. Flowers about the size, colour, and form of *A. deltoìdea.*

Purple-flowered Aubrietia. Fl. March, May. Clt. 1821. Pl. 2 or 3 inches.

Cult. These very ornamental plants thrive well in a dry soil; they are well adapted for ornamenting rock-work or the front of flower-borders, where they will flower nearly all the season; they are readily increased by dividing the plants at the root, or cuttings planted under a hand-glass will root readily; seeds also ripen frequently, by which they may be raised in plenty.

XXIII. VESICA'RIA (from *vesica*, a blister or bladder; inflated pods.) Lam. ill. t. 559. D. C. syst. 2. p. 295. prod. 1. p. 159.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle globose, inflated, with hemispherical valves. Seeds many, generally beyond 8, usually margined. Petals entire. Stems shrubby at the base, branched, round. Leaves oblong or linear entire, or somewhat sinuated. Racemes terminal. Pedicels bractless, filiform. Flowers yellow.

SECT. I. VESICA'RIANA (D. C. syst. 2. p. 296. prod. 1. p. 159.) silicles globose, with membranous inflated valves.

1 V. UTRICULA'TA (Lam. ill. t. 559.) calyx bisaccate at the base; leaves oblong, quite entire, smooth; lower ones ciliated, somewhat spatulate. ♄. H. Native of Greece, Italy, France, Piedmont, &c. on calcareous rocks. Alýssum utriculàtum, Lin. mant. 92. Curt. bot. mag. t. 130. Waldst. et Kit. hung. 2. p. 215. t. 196. Alỳssum Oedèri β, Durand, fl. bourg. 1. p. 161. Myàgrum utriculàtum, Berg. phyt. univ. icon. Flowers yellow, almost like those of *Wall-flower.*

Bladder-podded Vesicaria. Fl. Ap. Ju. Clt. 1730. Pl. 1 ft.

2 V. RETICULA'TA (Lam. ill. t. 559. f. 2.) calyx? leaves oblong-linear, smooth, radical ones rosulate, toothed, cauline ones entire. ♃. H. Native of Armenia between Baitbout and Conac; of Syria near Damascus. Alỳssum vesicària, Lin. spec. 910. Flowers small, yellow, in short racemes. Root perpendicular.

Reticulated-podded Vesicaria. Fl. June. Clt.? Pl. ½ foot.

3 V. LUDOVICIA'NA (D. C. syst. 2. p. 297.) calyx equal at the base, somewhat spreading; leaves linear-spatulate, entire, hoary with stellate-tomentum; stem at the neck somewhat shrubby; pods globose, downy; style slender. ♃. H. Native of Louisiana on the banks of the river Missouri. Myàgrum argénteum, Pursh. Alỳssum Ludoviciànum, Nutt. gen. amer. 2. p. 63. Flowers yellow, a little larger than those of *Alýssum saxátile.*

Louisiana Vesicaria. Fl. May, June. Clt. 1825. Pl. ½ foot.

4 V. SINUA'TA (Poir. dict. 8. p. 570.) calyx equal at the base, somewhat spreading, and is velvety as well as the oblong, entire, or sinuately-toothed leaves; stem herbaceous. ♂. H. Native of Spain in cultivated places, and on the road-side to Castello; also by the sea-side in Istria and Illyria, &c. Alỳssum sinuàtum and Créticum, Lin. spec. 910. Schkuhr. handb. 2. no. 1816. t. 181. Petals yellow, emarginate, at length becoming white. Seeds 6 in each cell, while the rest have only 4.—Morr. oxon. 2. p. 247. sect. 3. t. 9. f. 6.

Sinuated-leaved Vesicaria. Fl. Ap. Ju. Clt. 1596. Pl. 1 foot.

5 V. GLOBO'SA (Desv. journ. bot. 3. p. 171 and 184.) leaves lanceolate, acute, entire, smoothish; pods spherical, somewhat villous. ♄.? H. Native of North America in arid places. Pods small, terminated by the filiform style; cells many-seeded. Flowers yellow.

Globose-podded Vesicaria. Pl. ½ foot.

6 V. FRUTICULÒSA (Desv. journ. bot. 3. p. 171 and 184.) leaves somewhat spatulate, quite entire, white with down; pods somewhat globose, inflated, smooth. ♄. H. Perhaps a native of some of the islands in the Archipelago. Flowers yellow.

Fruticulose Vesicaria. Pl. 1 foot.

7 V.? PHYSO'PHORA (Andrz. cruc. ined. in D. C. syst. 2. p. 300.) leaves oblong, blunt, crowded, downy; pods sub-globose, somewhat pubescent; style very short.—Native of?

Bladder-bearing Vesicaria. Pl. ¾ foot.

8 V. A'RCTICA (Richards. in Frankl. 1st journ. ed. 2. app. p. 26.) radical leaves obovately-spatulate, the rest somewhat linear, quite entire, hoary with starry tomentum; pods orbicular, inflated, smooth, longer than the thickish style; calyx equal; stem suffruticose. ♄. H. Native of Amanak in Greenland; also of North America, but mostly confined to the Arctic shores and islands eastward of the Mackenzie River. Alýssum árcticum, Horn. fl. dan. t. 1520. Flowers large, yellow.

Arctic Vesicaria. Fl. April, June. Pl. ½ foot.

9 V. arenòsa (Richards. l. c.) lower leaves somewhat rhomboidal, obsoletely sinuate-toothed, grey with stellate down; stem round, suffruticose at the base; pods globose, pubescent. ♄. H. Native of North America on hills and dry prairies on the Arctic shore, at Saskatchawan, and at Carlton House. V. árctica, Hook. in bot. mag. t. 2882. var. β. Hook. fl. bor. amer. p. 48. Flowers yellow, smaller than those of the preceding. Stems spreading or ascendant.

Sand Vesicaria. Fl. April, June. Pl. ½ foot?

10 V. didymoca'rpa (Hook. fl. bor. amer. t. 16.) plant beset with forked hairs; leaves spatulate, slightly toothed, or entire; stems decumbent; pods didymous, inflated about the length of the slender style, beset with forked hairs; root fusiform. ♃. H. Native of North America in the Arctic regions. Flowers yellow, disposed in racemose corymbs. Calyx equal at the base.

Twin-fruited Vesicaria. Pl. ½ foot.

11 V. cochlearioi'des (Spreng. syst. 2. p. 872.) herbaceous; leaves oblong, obtuse, sinuately-toothed, rather fleshy, smooth; calyx permanent, inflated when in fruit. ♃. H. Native of the East Indies. Alýssum cochlearioìdes, Roth.

Scurvy Grass-like Vesicaria. Pl. 1 foot.

Sect. II. Alyssoi'des (plants with the habit of Alýssum.) D. C. syst. 2. p. 298. prod. 1. p. 159. Silicles ovate, with concave stiffish valves.

12 V. Cre'tica (Poir. dict. 8. p. 570.) calyx deciduous; leaves oblong, entire or repand, waved, covered with hoary down. ♄. or ♃. H. Native of Crete. Alýssum Créticum, Lin. spec. 910? Willd. spec. 3. p. 460.—Alp. exot. p. 117 and 118. icon. Pods ovate-globose, hoary. Seeds girded by a membranous margin. Flowers yellow.

Cretan Vesicaria. Fl. May, Aug. Clt. 1739. Pl. ¾ foot.

13 V. vesti'ta (Desv. jour. bot. 3. p. 171 and 184.) calyx permanent; leaves linear, acute, downy, entire. ♄. H. Native of Persia near Hamadan. Flowers yellow. Seeds not margined. Deless. icon. sel. 2. t. 35.

Clothed Vesicaria. Pl. ¾ foot.

14 V. paniculata (Desv. jour. bot. 3. p. 171.) leaves obovate, entire, smooth; pods ovate, somewhat inflated. ♄. H. Native of Crete. Alýssum paniculàtum, Desf. cor. Tourn. p. 67. t. 50. Flowers unknown.

Panicled-flowered Vesicaria. Pl. ¾ foot.

Cult. The species of this genus are well adapted for ornamenting rock-work or the front of flower borders: young cuttings planted under a hand-glass will soon strike root; but the best and most general method of increasing them is by seed, which ripen in abundance. They thrive best in a dry situation, in any kind of soil. Some of the rarer kinds should be planted in pots, so that they may be protected by a frame during severe weather.

XXIV. SCHIWERE'CKIA (in honour of Andr. Schivereck, a famous Polish botanist, formerly a friend of Marschall Bieberstein's.) Andrz. Cruc. ined. in D. C. syst. 2. p. 300. prod. 1. p. 160.

Lin. syst. *Tetradynàmia Siliculòsa.* Silicle ovate, with convex valves, which are somewhat depressed lengthways in the middle. Seeds numerous, without margins. Calyx equal at the base. Petals entire. Larger stamens toothed. A little evergreen perennial herb, white from stellate down. Radical leaves rosulate, oval-oblong, toothed, cauline ones few, stem-clasping. Racemes terminal; pedicels filiform, bractless. Flowers white. Ovaries and siliques grey from short soft down.

1 S. Podo'lica (Andrz. et Bess. in litt. D. C. syst. l. c.) ♃. H. Native of Podolia, Volhynia, and the Ural mountains in Siberia. Deless. icon. sel. 2. t. 36. Sweet, brit. fl. gard. t. 77. Alýssum Podólicum, Bess. cat. hort. crim. 1816. p. 8.

Podolian Schiwereckia. Fl. May, July. Clt. 1817. Pl. ¼ foot.

Cult. This pretty little plant thrives well in rock-work, or to be grown in small pots in light sandy soil, and placed among other alpines. It may be either increased by seed or dividing the plant at the root.

XXV. ADYSE'TON (meaning unknown.) Scop. carn. 2. p. 13, Alýssum, sect. 1. Adysèton, D. C. syst. 2. p. 301. prod. 1. p. 160. Alýssum, spec. Lin.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicles obovate or elliptical, with flat valves. Seeds 1-2-4 in each cell, compressed, usually girded by a membranous wing. Calyx equal at the base. Petals entire. Stamens all or some of them toothed. Small evergreen herbs or sub-shrubs, grey from soft starry-hairs or down. Leaves oblong, linear, or obovate, entire. Racemes opposite the leaves or terminal, elongating as they grow old; pedicels filiform, bractless. Flowers yellow.—The authorities given for the species are under *Alýssum.*

Sect. I. Disodóntea (from δις, *dis*, double; οδους οδοντος, *odous odontos*, a tooth; stamens furnished with a tooth on each side.) Flowers yellow. Stamens all or the larger ones furnished with a tooth on each side. Seeds 1-2 in each cell.

1 A. saxa'tile (Lin. spec. 908.) stems suffruticose at the base, somewhat corymbose; leaves lanceolate, entire, clothed with hoary tomentum; pods obovate, orbicular, 2-seeded; seeds margined. ♄. H. Native of Russia at the falls of Boristhen, and in Podolia. Curt. bot. mag. t. 159. Aurìnia saxátilis, Desv. jour. bot. 3. p. 162. A very common plant in gardens. Called in France *Corbeille d'or.*

Rock Adyseton. Fl. April, May. Clt. 1710. Pl. 1 foot.

2 A. Gemone'nse (Lin. mant. 92.) stems suffruticose at the base, panicled; leaves lanceolate, entire, greyish-velvety from stellate down; pods nearly orbicular, 2-4-seeded; seeds margined. ♄. H. Native on walls about the town of Gemona in Italy, and in Austria, Carinthia, and Transylvania, on rocky mountains. Jacq. icon. rar. 3. t. 503. Alýssum saxátile, Crantz. austr. p. 16. Vesicària Gemonénsis, Poir. dict. 8. p. 571.

Gemona Adyseton. Fl. April, May. Clt. 1710. Pl. 1 foot.

3 A. orienta'le (Ard. specim. 2. p. 32. t. 15. f. 1.) stems suffruticose at the base, panicled; leaves lanceolate, repandly-toothed, waved, downy; pods almost orbicular, transversely-oval, 4-seeded; seeds margined. ♄. H. Native of Crete on the mountains; at the Euxine sea on the sandy shore near Fanar. On rocks in the island of Cois, and also in the south of Italy. Smith fl. græc. t. 625. Clypèola tomentòsa, Lin. mant. 92.

Oriental Adyseton. Fl. May, June. Clt. 1820. Pl. 1 foot.

4 A. spathula'tum (Steph. in Willd. spec. 3. p. 465.) stems suffruticose at the base; leaves spatulately-obovate, stalked, greyish-velvety; pods orbicular, a little longer than the style; seeds margined. ♄. H. Native of Siberia on mountains; also in cretaceous ground at the river Lena. Alỳssum cretàceum, Adams, soc. nat. mosc. 5. p. 109. Deless. icon. sel. 2. t. 37. Petals emarginate, double the length of calyx.

Spatulate-leaved Adyseton. Fl. Ap. May. Clt. 1821. Pl. ½ ft.

5 A. arge'nteum (Vitm. summ. 4. p. 30.) stems suffruticose at the base, hoary with stellate down; leaves oblong-spatulate, silvery on the under surface; pods ovate-orbiculate, compressed, velvety; seeds slightly margined. ♄. H. Native of the lower Alps of Piedmont, on rocks exposed to the sun. Lunària argéntea, All. ped. no. 901. t. 54. f. 3.

Silvery-leaved Adyseton. Fl. May, June. Clt. 1819. Pl. 1 ft.

6 A. Bertolònii (Desv. jour. bot. 3. p. 172 and 185.) stems

suffruticose at the base, grey with stellate down; leaves oblong-obovate, silvery on the under surface; pods elliptical, compressed, greyish; seeds not margined. ♄. H. Native of Italy on hills and rocks exposed to the sun, about Sarzena and elsewhere. A. argénteum, Bertol. amœn. ital. p. 34. exclusive of the synonyms. Savi. bot. etr. p. 185. no. 569. Very like *A. argénteum*.

Bertoloni's Adyseton. Fl. May, June. Clt. 1825. Pl. 1 foot.

7 A. MURA'LE (Waldst. et Kit. hung. 1. p. 5. t. 6.) stems suffruticose at the base, grey from stellate down; leaves oblong, acutish, under surface white; pods ovate, rather velvety; seeds not margined. ♄. H. Native of Transylvania on the old walls about Deva, and on mount Vulkany towards Abrudhanya. Very like the two preceding plants.

Wall Adyseton. Fl. July, Aug. Clt. 1801. Pl. 1 foot.

8 A. SAVRA'NICUM (Andrz. ex Spreng. syst. 2. p. 858.) stems diffuse, ascending; leaves spatulately-linear, clothed with starry pubescence, densely tomentose beneath; flowers minute; silicles hoary, with pubescence. ♄. H. Native of Podolia.

Savranic Adyseton. Fl. May, June. Shrub ½ foot.

9 A. OBTUSIFÒLIUM (Steven. in litt. D. C. syst. 2. p. 305.) stems suffruticose at the base, pubescent with stellate down; leaves obovate-spatulate, blunt, silvery on the under surface; pods ovate-orbicular, rather velvety; seeds not margined. ♄. H. Native of southern Tauria, and in Siberia. Deless. icon. sel. 2. t. 38. A. muràle, Bieb. fl. taur. 2. p. 103. but not of Kit.

Blunt-leaved Adyseton. Fl. June, Aug. Clt. 1812. Pl. ¾ foot.

10 A. ATLA'NTICUM (Desf. atl. 2. p. 71. t. 149.) stems suffruticose at the base, hoary, erect; leaves lanceolate, hoary and pilose; racemes simple; pods orbicular, hoary; valves rather convex in the middle. ♄. H. Native of Crete on rocks, and on the top of Mount Atlas, near Tlemsen.

Atlantic Adyseton. Fl. June, July. Clt. 1820. Pl. ½ to 1 foot.

11 A. SERPYLLIFÒLIUM (Desf. atl. 2. p. 70.) stems suffruticose, erect, hoary; leaves hoary, lower ones obovate, upper ones lanceolate; racemes corymbose; pods obovately-cuneated, hoary, with flat valves. ♄. H. Native of Algiers, near Tlemsen; also in Spain about Aranjuez.

Wild-thyme-leaved Adyseton. Fl. May, July. Clt. 1820. Pl. ½ to 1 foot.

12 A. RE'PENS (Baumg. fl. trans. 2. p. 237.) stems suffruticose at the base, younger ones decumbent, adult ones erect; leaves rather pilose, lower ones oblong-obovate, narrowed into the petiole; upper ones oblong; pedicels hispid; style rather hairy, longer than the 2-ovulate ovary. ♄. H. Native of Transylvania on calcareous rocks. Root creeping. Pods orbicular, 1-seeded.

Creeping-rooted Adyseton. Fl. April, June. Pl. ½ foot.

13 A. VERNA'LE (Horn. ex Schrank, hort. mon. t. 96.) stems ascendant; leaves lanceolate, narrowed downwards, almost entire, greyish from stellate down; petals emarginate; pods inflated, covered with stellate hairs. ♃. H. Very near to *A. rèpens*, but the pods are said to be inflated.

Vernal Adyseton. Fl. April, May. Clt. 1823. Pl. ¼ to ½ ft.

14 A. TORTUO'SUM (Waldst. et Kit. hung. 1. p. 94. t. 91.) stem suffruticulose at the base, twisted, diffuse, hoary; leaves hoary, somewhat lanceolate; racemes corymbose; pods elliptical, greyish-velvety, with flat valves. ♄. H. Native of Hungary on very dry sandy declivities of hills, also in Transylvania and southern Podolia.

Var. β, orientàle (D. C. syst. 2. p. 306.) stems more shrubby at the base, and the leaves more hoary. Native of Armenia and on calcareous hills in Tauria and Iberia about Tanaim. A. subalpìnum, Pall. ined. A. serpyllifòlium, Bieb. fl. taur. 2. p. 103. suppl. 432.

Twisted-stemmed Adyseton. Fl. Ju. Jul. Clt. 1804. Pl. ½ ft.

15 A. ALPE'STRE (Lin. mant. 92.) stems suffruticose at the base, diffuse, greyish; leaves obovate, hoary; racemes simple; pods obovate-oblong, greyish, with flat valves. ♄. H. Native of the Alps of Provence, Piedmont, Vallais, Portugal, France, Transylvania, Greece, &c. on rocks exposed to the sun. All. ped. no. 888. t. 18. f. 2. Smith, fl. græc. t. 624. A. minútulum, Schleich. pl. helv. A tufted plant.

Alp Adyseton. Fl. June, July. Clt. 1777. Pl. ¼ foot.

16 A. NEBRODE'NSE (Tineo, pug. pl. sicul. p. 12. no. 10.) stems suffruticulose, ascendant, canescent; leaves obovate, hoary; racemes corymbose; pods elliptical-obovate, hoary, with flat valves. ♄. H. Native of Sicily on the Nebrodes.

Nebrode Adyseton. Fl. June, July. Pl. ½ to 1 foot.

17 A. MARSCHALLIA'NUM (Andrz. cruc. in D. C. syst. 2. p. 308.) stems suffruticose, erect, and are as well leaves hoary; lower leaves obovate, upper ones oblong-linear; racemes simple; pods elliptical, grey, with somewhat convex valves. ♄. H. Native of Eastern Caucasus and Tauria among broken stones. A. alpéstre, Bieb. An intermediate plant betwen *A. Atlánticum* and *A. alpéstre*.

Marschall-Bieberstein's Adyseton. Fl. May, Jul. Clt. 1817. Pl. ½ foot.

18 A. LENE'NSE (Adams, mem. soc. nat. mosc. 5. p. 110.) stems somewhat herbaceous, diffuse, and are as well as the imbricated lanceolate leaves grey or hoary; racemes simple, short; pods ovate, emarginate, pubescent. ♃. H. Native of Siberia on the banks of the river Lena, about Yachutzk. A. imbricàtum, Schlecht. in herb. Willd. Petals obovate, emarginate.

Lena Adyseton. Pl. ½ foot.

19 A. LANI'GERUM (D. C. syst. 2. p. 308.) stems suffruticose at the base, tufted, and are as well as obovate leaves woolly; racemes corymbose; pods elliptical, velvety, nearly equal in length with the style. ♄. H. Native of Persia between Kermancha and Amadan. Flowers small; petals obovate.

Wool-bearing Adyseton. Pl. ½ foot.

20 A. MONTA'NUM (Lin. spec. 907.) stems rather herbaceous, diffuse, pubescent; leaves somewhat hoary, lower ones obovate, upper ones oblong; racemes simple; pods orbicular and somewhat emarginate, grey. ♃. H. Native nearly throughout all Europe on hills and low mountains in calcareous situations exposed to the sun. Jacq. vind. 358. Curt. bot. mag. t. 419. Jacq. fl. aust. t. 37. Clypèola montàna, Crantz. austr. 19. Petals twice the length of the calyx.

Var. β, albéscens (Schlecht. in herb. Willd.) A. montànum, Bieb. fl. taur. 2. p. 104. Plant larger and flowers smaller.

Var. γ, arenàrium (Lois. fl. gall. p. 401.) leaves rounder.

Mountain Adyseton. Fl. May, Sept. Clt. 1713. Pl. ⅛ ft.

21 A. CUNEIFO'LIUM (Ten. fl. nap. prod. p. 37. app. cat. neap. 1815. p. 58.) stems somewhat herbaceous, diffuse; pubescent; leaves rather hoary, obovately-cuneated; corymbs simple; pods ovate, somewhat emarginate, nearly equal in length with the style. ♃. H. Native of Abruzzo in Naples, on the tops of the mountains. Easily confounded with *A. montànum*.

Wedge-leaved Adyseton. Fl. May, Aug. Clt. 1820. Pl. ¼ ft.

22 A. DIFFU'SUM (Ten. app. hort. neap. 1815. p. 58.) stems somewhat herbaceous, diffuse, grey; leaves hoary, lower ones somewhat obovate, the rest linear-lanceolate, narrowed at both ends; racemes simple; pods ovate, somewhat emarginate, nearly equal in length with the style. ♃. H. Native of Naples with the preceding. Very like the preceding.

Diffuse Adyseton. Fl. May, Aug. Clt. 1825. Pl. ¼ foot.

23 A. WULFENIA'NUM (Willd. enum. suppl. 44.) stems somewhat herbaceous, diffuse, grey; leaves dotted, grey, narrowed at the base, lower ones obovate, upper ones lanceolate; racemes simple; pods elliptical, somewhat emarginate, twice the length of the style. ♃. H. Native of Carinthia on mountains. Differs

from *A. montànum*, to which species it is nearly allied in the pods being elliptical, not orbicular.

Wulfen's Adyseton. Fl. May, Sept. Clt. 1821. Pl. $\frac{1}{4}$ foot.

24 A. Sibi'ricum (Willd. spec. 3. p. 465.) stems herbaceous, ascendant, branched at the top, corymbose; leaves and pods obovate, blunt, dotted with stellate hairs; style 3-times shorter than the pod. ♃. H. Native of Siberia. Flowers small.

Siberian Adyseton. Pl. $\frac{1}{4}$ foot.

25 A. fischeria'num (D. C. syst. 2. p. 311.) stems herbaceous, ascendant, and are as well as the leaves grey, lower leaves obovate, upper ones oblong; racemes simple; pods orbicular, hoary, twice the length of the style. ♃. H. Native of Siberia about Nerschtinsky-savod. Petals double the length of the calyx.

Fischer's Adyseton. Pl. $\frac{1}{4}$ foot.

26 A. gnaphalo'des (D. C. syst. 2. p. 311.) stems suffruticose, dwarf; leaves elliptical, covered with velvety down, those of the branches linear; racemes simple; calyx closed, longer than the pedicel; pods elliptical, velvety, twice the length of the style. ♄. H. Native of Persia on Mount Elwend. Petals obovate, with filiform claws.

Woolly Adyseton. Fl. May, Oct. Pl. $\frac{1}{2}$ foot.

27 A. petalo'des (D. C. syst. 2. p. 312.) stems suffruticose, erectish, hairy; leaves oblong, narrowed at the base, hairy, lower ones toothed; racemes simple; calyx closed, longer than the pedicel; pods ovate, with a velvety margin. ♄. H. Native of Syria. Claws of petals longer than the calyx.

Long-clawed-*petalled* Adyseton. Fl. May, Aug. Pl. $\frac{1}{4}$ foot.

Sect. II. Odontoste'mon (from *οδους οδοντος, odous odontos*, a tooth; *στημων, stemon*, a stamen; each large stamen furnished with one tooth). Flowers white. Larger stamens furnished with a tooth. Stems herbaceous. This section may probably form a distinct genus.

28 A. hyperbo'reum (Lin. spec. 910.) stems herbaceous, tufted; leaves elliptical, grossly and acutely toothed, rather hairy; pods elliptical. ♃. H. Native of the western coast of North America among rocks. Dràba hyperbòrea, Desv. journ. bot. 3. p. 172. Krasch. nov. comm. acad. Petrop. 1. ann. 1750. p. 388. t. 15. f. 1. A tufted, somewhat glaucous plant with the habit of Neurolòma arabiflòrum. Petals white, with yellow claws. Seed kidney-shaped, margined, 3 in each cell.

Northern Adyseton. Fl. April, May. Pl. 2 inches.

† *Species not sufficiently known.*

29 A. obcorda'tum (D. C. syst. 2. p. 324.) leaves linear-lanceolate, toothed, woolly-pubescent; pods smooth, roundish-obcordate. Native? Aurìnia obcordàta, Desv. journ. 3. p. 162. & 174. Seeds girded with a broad membrane, only one in each cell.

Obcordate-podded Adyseton. Pl. $\frac{1}{2}$ foot.

30 A. denta'tum (Nutt. gen. amer. 2. t. 63.) radical leaves somewhat runcinately-toothed; cauline ones linear-lanceolate; pods elliptical, pubescent. ♃. H. Native of Virginia near Harper's Ferry, on declivities of slate rocks. Dràba arabìsans, Pursh, fl. amer. sept. 2. p. 434. but not of Mich. Flowers unknown.

Toothed-leaved Adyseton. Pl.?

31 A.? du'bium (Bory. ann. sc. phys. 3. p. 4.) stem shrubby, branched; leaves obovate-lanceolate, downy; pods ovate, acute, 1-seeded. ♄. H. Native of Spain among the rocks of Sierra Nevada. A. purpùreum, Lag. ann. 5. p. 275.

Doubtful Adyseton. Pl. 2 or 4 inches.

Cult. The whole of the species of *Adysèton* are very proper for ornamenting rock-work, or the front of flower-borders. Some of the rarer species may be kept in pots, and placed among other alpine plants. They may be increased by cuttings, planted under a hand-glass, or by dividing the plants at the roots as well as by seed. A dry light soil suits them best.

XXVI. ALY'SSUM (from α, priv. and λυσσα, *lyssa*, rage; the *Alỳssum* passed among the ancients as a plant possessed of properties of allaying anger). R. Br. in app. to Denh. and Clapp. trav. p. 6. Alyssum spec. Lin. D. C. syst. 2. p. 301. prod. 1. p. 162.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle roundish, with the valves convex in the disk, retuse at the apex; cells 2-seeded. Seeds girded by a membranous wing. Funicle adhering to the dissepiment, permanent. Petals emarginate. Stamens all or some of them toothed. Annual branched herbs, grey from stellate down. Racemes terminal. Flowers small, yellow.

1 A. umbella'tum (Desv. journ. bot. 3. p. 173. and 184.) stem diffuse, leaves linear, rather hairy; racemes somewhat umbellate; pods elliptical, pilose with stellate hairs. ⊙. H. Native of Tauria in gravelly places. A. brachystàchyum, Bieb. suppl. 434. Flowers small, sulphur-coloured.

Umbellate-racemed Madwort. Fl. Ju. Jul. Clt. 1817. Pl. $\frac{1}{4}$ ft.

2 A. rostra'tum (Stev. mem. acad. petersb. 3. p. 295. t. 15. f. 1.) stem erect; floriferous branches panicled; leaves lanceolate, rather hairy; pods orbicularly-elliptical, pilose, grey, hardly longer than the style, disposed in long racemes. ⊙. H. Native of Bessarabia, on the edges of fields about Bender; on the calcareous rocks at the river Tyra; about Odessa, and in the mountains of Tauria. Petals spatulate, dark yellow, twice the length of the calyx.

Var. β, A. vernàle; Kit. from Horn. hort. hafn. p. 601. leaves linear, about a line in breadth.

Beaked Madwort. Fl. May, Jul. Clt. 1818. Pl. $\frac{1}{2}$ to 1 ft.

3 A. micrope'talum (Fisch. in D. C. syst. 2. p. 313.) stem erect; leaves lanceolate, hairy; pods hairy, orbicular, twice as long as the style, disposed in long racemes. ⊙. H. Native of Iberia near Tiflis. Deless. icon. sel. 2. t. 39. A. parviflòra, Bieb. suppl. p. 434.

Var. β, procúmbens (Bieb. l. c.) stems diffuse, procumbent, and much smaller.

Small-petalled Madwort. Fl. May, Jul. Clt. 1820. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

4 A. hirsu'tum (Bieb. fl. taur. 2. p. 106.) stem erect; leaves lanceolate, hairy; pods orbicular, tuberculately-hairy, thrice as long as the style, disposed in long racemes. ⊙. H. Native of Tauria and Iberia in dry fields. A. Dràba, Willd. enum. p. 672. Very like *A. campéstre*. Deless. icon. sel. 2. t. 40.

Hairy Madwort. Fl. May, Jul. Clt. 1817. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

5 A. campe'stre (Lin. spec. 909.) stems diffuse; leaves lanceolate or somewhat linear, hairy; pods orbicular, tubercularly-hairy, six times longer than the style, disposed in long racemes. ⊙. H. Native of Spain, Tauria, south of France, Vallais, Italy, Transylvania, Greece, &c. in sandy fields. Smith, fl. græc. t. 626. Mœ'nchia campéstris, Roth. fl. germ. 1. p. 274. Petals longer than the calyx, somewhat emarginate.

Var. β, simplex (Rud. in Schrad. journ. 2. p. 291.).

Field Madwort. Fl. June, Aug. Clt. 1768. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

6 A. calyci'num (Lin. spec. 908.) stems diffuse; leaves linear-lanceolate, canescent; calyx permanent; pods orbicular, somewhat emarginate, downy, 4-times as long as the style. ⊙. H. Native in dry fields both in South and middle Europe. Jacq. vind. 114. fl. austr. t. 338. A. alyssoides, Gouan. hort. 321. A. campéstre, Hoffm. germ. 4. p. 43. Schkuhr. handb. 2. t. 181. Petals, when old, whitish.

Large-*calyxed* Madwort. Fl. June, Aug. Clt. 1740. Pl. $\frac{1}{2}$ ft.

7 A. minu'tum (Schlecht. in herb. Willd. from Steven. D. C. syst. 2. p. 316.) stems erectish, somewhat hispid; radical leaves oval, stalked, cauline ones oblong-linear; calyx pilose, slowly

deciduous; pods ovate-orbicular, smooth. ⊙. H. Native of Siberia on rocks. Flowers small; petals almost linear.

Minute Madwort. Fl. May, June. Clt. 1827. Pl. 1 inch.

8 A. mi'nimum (Willd. spec. 3. p. 464. exclusive of Lin. syn.) stems diffuse; leaves linear-lanceolate, hoary; pods orbicular, emarginate smooth. ⊙. H. Native in dry sandy fields and on hills about Vienna, also of Podolia, and Tauria, &c. Tratt. thes. p. 8. t. 35. Very like *A. calycìnum*, but the calyx is deciduous.

Smallest Madwort. Fl. April, May. Clt. 1791. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

9 A. glomera'tum (Burch. cat. geog. pl. afri. austr. extratrop. no. 1204.) stems ascendant; leaves lanceolate, blunt, villous; racemes crowded; calyx permanent; pods orbicular, smooth. ⊙. H. Native of the Cape of Good Hope in Rogeweld, near Riet river. Petals oblong, a little longer than the calyx.

Glomerate-racemed Madwort. Pl. $\frac{1}{4}$ foot.

10 A. densiflo'rum (Desf. cor. Tourn. p. 65. t. 48.) leaves narrow-lanceolate; flowers crowded into dense cylindrical racemes; pods orbicular, pubescent, 1-2-seeded. ⊙. H. Native of Armenia. Flowers small, white.

Dense-flowered Madwort. Pl. $\frac{3}{4}$ foot.

11 A. stri'ctum (Willd. spec. 3. p. 464.) leaves linear-lanceolate, downy; flowers crowded into dense cylindrical racemes; pods elliptical, downy. ⊙. H. Native of Armenia. Differing from *A. densiflòrum*, in the pods being elliptical and downy, not orbicular, and pubescent.

Upright Madwort. Pl. $\frac{1}{4}$ foot.

12 A. strigo'sum (Russ. in Schrad. journ. 1. p. 426.) stems herbaceous, hispid with starry hairs; leaves obovate, entire; calyx permanent. ⊙. H. Native about Aleppo.

Strigose-stemmed Madwort. Pl. $\frac{1}{4}$ foot.

13 A. fulvescens (Smith. prod. fl. græc. 2. p. 13.) stems ascendant; radical leaves stalked, obovate, grey, upper ones oblong; calyx permanent; pods ovate-globose, smooth. ⊙. H. Native of the Morea and in the islands of Cyprus and Scio. Petals obcordate, when dry brownish.

Brownish-petalled Madwort. Pl. $\frac{1}{4}$ foot.

Cult. Inconspicuous annual plants, the seed of which will grow under any circumstances and in any kind of soil.

XXVII. ANODO'NTEA (from *a, priv. οδους οδοντος, odous odontos*, a tooth; stamens without teeth). D. C. syst. 2. p. 317. prod. 1. p. 163. as a section of *Alýssum*.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle ovate, roundish or obovate, somewhat inflated, with convex valves, crowned by the permanent style; cells 1-2-seeded (f. 46. *h.*). Seeds girded by a membranous wing. Petals obovate, entire, or bifid. Stamens all toothless. Annual herbs or sub-shrubs, hoary from stellate down. Flowers yellow or white, racemose. The authorities given for the species are under *Alýssum*.

Sect. I. Vesica'ria (*vesica*, a bladder; inflated pods). Flowers yellow. Silicles somewhat inflated. Species intermediate between *Adysèton* and *Vesicària*. Annual or biennial plants.

1 A. ede'ntula (Waldst. et Kit. hung. 1. p. 95. t. 92.) stem erect; leaves oblong, somewhat sinuated, velvety, upper ones linear; calyx spreading; petals bifid; pods ovate, smooth. ♂. H. Native of Bosnia on calcareous rocks. Vesicària edéntula, Poir. dict. 8. p. 572. Petals twice as long as calyx, bifid at the top. Seeds 2 in each cell.

Toothless-stamened Anodontea. Fl. Ju. Jul. Clt. 1819. Pl. 1 ft.

2 A. dasyca'rpa (Steph. in Willd. spec. 3. p. 469.) stems erect; leaves oblong, canescent; pedicels shorter than the calyx; pods nearly double the length of the style. ⊙. H. Native of Siberia at the rivers Kuma and Volga, at lake Inderkoi, and also about Astracan. Vesicària dasycárpa, Poir. dict. 8. p. 571. A. Sibíricum, Trev. in ges. nat. fr. berl. mag. 1816. p. 151. t. 2. f. 14. et 17. but not of Willd. Flowers small, yellowish.

Thick-podded Anodontea. Fl. Jul. Clt. 1820. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

Sect. II. Lobula'ria (D. C. syst. 2. p. 318. prod. 1. p. 164.) Flowers white. Seeds usually solitary in the cells. Stems fruticulose, at least at the base.

3 A. rupe'stris (Tenore, fl. nap. t. 60.) stem suffruticose at the base, rather erect; radical leaves oblong-lanceolate, acute, silvery, cauline ones few, linear; pods obovate, flocculose, mucronated with a short style. ♄. H. Native of the south of Italy on rocks. Flowers larger than those of *Konìga marítima*.

Rock Anodontea. Fl. May, Sept. Clt. 1824. Pl. $\frac{1}{2}$ foot.

4 A. arena'ria (Presl. ex. Spreng. syst. app. p. 239. under Alyssum.) stem suffruticose, procumbent; leaves linear-lanceolate, acute, rather hoary; silicles elliptical, somewhat inflated, rather pilose, 1-seeded, mucronate by the short style. ♄. H. Native of Sicily.

Sand Anodontea. Fl. June, July. Pl. procumbent.

5 A. halimifo'lia (Willd. spec. 3. p. 460.) stems suffruticose, ascendant; leaves oblong, blunt, narrowed at the base, covered with scaly hairs; pods orbicular, smooth, twice as long as the style. ♄. H. Native of Italy, Piedmont, about Nice, &c. on rocky mountains exposed to the sun. Lunària halimifòlia. All. ped. no. 900. t. 54. f. 1.—Bocc. mus. 45. t. 39. Flowers like those of *A. spinòsum*.

Halimus-leaved Anodontea. Fl. Ju. Sept. Clt. 1820. Pl. $\frac{1}{2}$ ft.

6 A. spino'sa (Lin. spec. 907.) stem shrubby, old branches and peduncles spiny; leaves oblong-linear, silvery; pods orbicular, smooth, terminated by the short style. ♄. F. Native of Arragon and south of France on calcareous rocks exposed to the sun.—Barrel. icon. t. 808. Dràba spinòsa, Lam. fl. fr. 2. p. 461. Flowers a little larger than those of *Konìga marítima*. Seeds 2 in each cell. A little tufted shrub.

Spiny Anodontea. Fl. June, Aug. Clt. 1683. Pl. $\frac{1}{2}$ foot.

7 A. macroca'rpa (D. C. syst. 2. p. 321.) stem shrubby; branched, somewhat spiny; leaves oblong, blunt, silvery; pods obovate-orbicular, somewhat emarginate, smooth, pointed with the style, containing 8 ovula (f. 46. *h.*). ♄. H. Native of the south of France, especially in the Cevennes, on calcareous rocks. Very like *A. spinòsa halimifòlia* and *A. Pyrenaìca*, but different. Deless. icon. sel. 2. t. 41. Seeds 2 in each cell.

Large-podded Anodontea. Fl. Ju. Sept. Clt. 1828. Pl. $\frac{3}{4}$ ft.

8 A. Pyrena'ica (Lapeyr. abr. pyr. 371. suppl. 91.) stem shrubby, branched, not spiny; leaves obovate, narrowed at the base, hoary; pods elliptical, rather villous, pointed with the style. ♄. F. Native of the Eastern Pyrenees on rocks, particularly on Mount Conat, about Font de Combs. A. halimifòlium *β*, D. C. fl. fr. 5. p. 594.

Pyrenean Anodontea. Fl. June, Aug. Pl. $\frac{3}{4}$ foot.

9 A. cane'scens (D. C. syst. 2. p. 322.) stem shrubby, ascendant; leaves oblong-linear, hoary; pods elliptical, velvety, crowned with the long style. ♄. F. Native of Siberia, Tauria, Kamtschatka, on rocky mountains.

Var. a, abbreviàta (D. C. syst. l. c.) racemes short, corymbose. A. montànum and A. minùtum, Patrin. herb.

Var. β, elongàta (D. C. syst. l. c.) racemes more elongated. Leaves more hairy. A. Daùricum. Schlecht. in herb. Willd.

Canescent Anodontea. Fl. April, Sept. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

10 A. tenuifo'lia (Steph in Willd. spec. 3. p. 460.) stem fruticulose, erect; leaves linear, acute, clothed with starry villi; pods oval, hairy, crowned by the style. ♄. F. Native of Siberia about Doroninsk. Petals obovate, blunt, spreading, with filiform claws.

Slender-leaved Anodontea. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

Cult. The whole of the species of this genus are very proper

for ornamenting rock-work or the front of flower-borders; they are all very easily increased by seeds, which ripen in abundance. The shrubby kinds are also easily increased by dividing the plants at the root or by cuttings planted under a hand-glass, which root readily. The annual sorts should be sown in the open border or on rock-work.

XXVIII. DISCO'VIUM (from *δισκος, discos*, a disk; valves of pods keeled, in the disk?) Rafin. in journ. phyt. vol. 89. anno. 1819. p. 96. D. C. prod. 1. p. 236.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle lenticular with an entire dissepiment and keeled valves; cells many-seeded. Style permanent, crowned by a blunt stigma. Calyx closed. An annual, erect, simple slender herb, with distant sessile, oblong, obtuse, entire leaves. Petals yellow, entire, wedge-shaped, about equal in length with the calyx. An intermediate genus between *Alýssum* and *Thláspi.*

1 D. Ohiote'nse (Rafin. l. c.) ⊙. H. Native of North America, on the banks of the Ohio.

Ohio Discovium. Pl. $\frac{1}{2}$ foot.

Cult. An inconspicuous annual plant, the seed of which only require to be sown in the open border.

XXIX. MENIO'CUS (from *μηνη, mene*, the moon, and *οκκος, okkos*, an eye; shape of seeds?) Desv. journ. bot. 3. p. 173. D. C. syst. 2. p. 325. prod. 1. p. 165.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle sessile, elliptical, with flat valves. Seeds not margined, 6 or 8 in each cell. Calyx at the base equal. Petals entire. Larger stamens toothed. An annual herb, but nevertheless it is frutescent at the base; much branched, erect, greyish-velvety from stellate short hairs. Leaves linear, entire. Racemes terminal; pedicels filiform, bractless. Flowers small, white. This genus is hardly distinct from *Adysèton*, unless that there are never fewer than 6 seeds in each cell, not 2 or 4 as in that genus, and with smooth silicles.

1 M. linifòlius (D. C. syst. 2. p. 325.) leaves linear, bluntish, quite entire. ⊙. H. Native about Astracan among rubbish, and in cultivated land; in Tauria and Caucasus, near Tanaim; in Syria, between Aleppo and Mossul; in Podolia and Illyria; in Spain, in the province of Valentia, in several places, &c. Deless. icon. sel. 2. t. 42. Alýssum linifòlium, Steph. in Willd. spec. 3. p. 467. A. mínimum, Pall. itin. 3. p. 741. Meniòcus serpyllifòlius, Desv. l. c. A. Dràba, Bieb. from Desv. journ. l. c. A. Illýricum, Willd. enum. suppl. p. 44. A. linearifòlium, Lag. elench. hort. madr. 1815. p. 9. Farsètia linifòlia, Andrz. cruc. ined. Petals white, a little longer than the calyx.

Flax-leaved Meniocus: Fl. May, Jul. Clt. 1819. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

Cult. This little annual will answer well for rock-work, where the seeds should be sown.

XXX. CLYPE'OLA (from *clypeus*, a buckler; in allusion to the form of the silicles.) Gært. fruct. 2. p. 283. t. 141. f. 6. D. C. syst. 2. p. 326. prod. 1. p. 165. Clypèola spec. Lin. and Juss.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle orbicular, 1-celled, 1-seeded, with flat valves. Calyx equal at the base. Petals entire. Stamens toothed. Seeds compressed. Small annual herbs with the habit of *Alýssum* and *Biscutélla*, erect or diffuse, greyish from short stellate hairs. Leaves oblong-linear, entire. Racemes terminal, erect; pedicels filiform, short, bractless. Flowers small, yellow, or when old, whitish.

Sect. I. Ionthla'spi (from *ιον, ion*, a violet, and *θλαω, thlao*, to compress; that is to say, flat-seeded violet.) D. C. syst. 2. p. 326. prod. 1. p. 165. Silicles with ciliated margins, and smooth or pubescent disks.

1 C. Ionthla'spi (Lin. spec. 910.) stems diffuse, or ascendant. ⊙. H. Native of Spain; south of France; Avergne; Lower Vallais; Italy; Sicily; Arcadia; Iberia, near Tiflis; and in Persia, near Lenckeran, &c. &c.: growing on walls and in sandy places; also on gypsaceous and calcareous sterile hills. Cav. icon. 1. p. 22. t. 32. f. 2. Boiss. fl. europ. t. 455. Desv. journ. bot. 3. p. 161. t. 25. f. 7. Lam. ill. t. 560. f. 1. Fosselìnia ionthláspi, All. ped. no. 901. Clypèola monospérma, Lam. fl. fr. 2. p. 462 and 484. Alýssum ionthláspi, Clairv. herb. val. 216. Flowers small, yellow. Ovary 1-seeded.

Flat-seeded Violet, or Common Treacle-Mustard. Fl. May, Jul. Clt. 1710. Pl. 2 or 3 inches.

Sect. II. O'rium (from *ora*, a brim or margin; silicles toothed on the margins.) D. C. syst. 2. p. 327. prod. 1. p. 165. Silicles with toothed margins, and clothed with long, soft hairs.

2 C. erióphora (Cav. from Lag. in litt. D. C. syst. 2. p. 327.) stem erect, almost simple; calyx permanent. ⊙. H. Native of Spain, on hills, at Aranjuez. O'rium lanuginòsum, Desv. journ. bot. 3. p. 162. t. 25. f. 10. Alýssum erióphorum, Pourr. in Willd. enum. 2. p. 671. Vesicària lanuginòsa, Poir. dict. 8. p. 572. Flowers small, when dry, whitish. Petals spreading, permanent, hardly longer than the calyx.

Wool-bearing-Treacle-Mustard. Fl. May, Jul. Clt. 1820. Pl. $\frac{1}{2}$ foot.

Sect. III. bergere'tia (John Pyramus Bergeret, who wrote a Flora of the Pyrenees.) D. C. syst. 2. p. 328. prod. 1. p. 165. Silicles with toothed margins, and echinated disks.

3 C. echina'ta (D. C. syst. 2. p. 328.) stem erect; calyx deciduous. ⊙. H. Native of the Levant. Clypèola lasiocárpa, Pers. ench. 2. p. 193. Bergerètia echinàta, Desv. journ. bot. 3. p. 161. t. 25. f. 9. Flowers small, yellow. Pods 1-seeded.

Var. β, ramosissima (D. C. l. c.) stem much branched; leaves oblong, covered with short stellate hairs.

Echinated-podded Treacle-Mustard. Fl. May, Jul. Pl. $\frac{1}{4}$ foot.

Cult. These are pretty little curious annual plants; well adapted for rock-work, or the front of flower borders. They only require to be sown where they are intended to remain.

XXXI. PELTA'RIA (from *πελτη, pelte*, a small buckler; in allusion to the form of the silicles.) Lin. gen. no. 1083. Gært. fruct. 2. p. 383. t. 141. Desv. journ. bot. 3. p. 161. t. 24. D. C. syst. 2. p. 328. prod. 1. p. 166. Bohátschia, Crantz, aust. p. 5. t. 1. f. 1.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle orbicular, 1-celled, 1-(f. 46. *i.*) 4-seeded, with flat valves. Calyx equal at the base. Petals entire. Stamens toothless. Seeds pendulous, and often solitary from abortion. Smooth, erect, perennial herbs, with stalked, ovate, entire, radical leaves, and sessile sagittate stem-clasping, cauline ones. Racemes many, almost disposed in corymbs; pedicels bractless, filiform, erect, at the time of flowering, and when in fruit spreading or somewhat recurved. Flowers small, white.

1 P. allia'cea (Lin. spec. 910.) stem-leaves sagittate, stem-clasping; pods flat, smooth. ♃. H. Native of Austria, Croatia, Transylvania, and Piedmont about Fenestrelles, &c. in shady places. Jacq. fl. aust. t. 123. Boiss. fl. eur. t. 446. Clypèola alliàcea, Lam. dict. 2. p. 55. Clypèola perénnis, Ard. spec. 26. t. 6. The whole plant when bruised smells strongly of garlic.

Garlic-scented Peltaria. Fl. May, Jul. Clt. 1601. Pl. 1 to 2 ft.

2 P. angustifòlia (D. C. syst. 2. p. 329.) lower stem-leaves

stalked, upper ones linear; pods flat, short. ♃. H. Native about Damascus, on a mountain called Dgebel-cher. Pods ovate-orbicular, compressed, 2-ovulate, 1-seeded from abortion.

Narrow-leaved Peltaria. Fl. May, July. Pl. 1 foot.

3 P. GLASTIFÒLIA (D. C. syst. 2. p. 330.) cauline leaves sagittate, stem-clasping; pods flattish, rather rough, leathery. 1-seeded (f. 46. *i.*). ⊙.? H. Native of Syria, between Aleppo and Mossul.

Woad-leaved Peltaria. Fl. Jun. Jul. Clt. 1823. Pl. 1 foot.

Cult. The species of this genus will thrive well in any common garden soil; they are readily increased by seeds.

XXXII. PETROCA'LLIS (from *πετρον*, *petron*, a rock, and *καλος*, *kalos*, beautiful; in allusion to the plant growing on the rocks, which it enlivens with the beautiful tufts of rose-coloured blossoms.) R. Br. in hort. kew. ed. 2. vol. 4. p. 93. D. C. syst. 2. p. 330. prod. 1. p. 166.

LIN. SYST. *Tetradynàmia*, *Siliculòsa*. Silicle sessile, oval, with flattish valves. Seeds not margined, 2 in each cell. Funicles adhering to the dissepiment. Cotyledons oval, obliquely accumbent. A small ever-green, branched, tufted herb. Leaves cuneated at the base, but cleft at the apex into 3-5 divisions. Racemes short, somewhat corymbose, few-flowered, bractless. Flowers rose-coloured. Plant having the appearance of a species of *Saxífraga* when not in flower.

1 P. PYRENA'ICA (R. Br. l. c.) ♃. H. Native of the Pyrenees, Provence, Piedmont, Switzerland, Austria, Transylvania, Carniola, and many other parts of the south of Europe, on rocks, between stones, in places exposed to the sun at the height of 2100 and 4100 feet. Lod. bot. cat. t. 635. Sweet, brit. fl. gard. icon. Dràba Pyrenàica, Lin. spec. 896. Jacq. fl. aust. t. 228. Curt. bot. mag. t. 713. Flowers elegant rose-coloured. Leaves cuneate, 3 or 5, cleft at top.

Pyrenean Petrocallis. Fl. May, June. Clt. 1759. Pl. ¼ foot.

Cult. This pretty little plant is well adapted for ornamenting rock-work, or it may be grown in little pots, in a mixture of peat, loam, and sand, and placed among other alpine plants. It is easily increased by seeds, or dividing the plant at the root.

XXXIII. DRA'BA (from *δραβη*, *drabe*, acrid, biting, according to Linnæus; taste of leaves. It is to be suspected that the name *Dràba* was not originally given to this genus.) D. C. syst. 2. p. 331. prod. 1. p. 166. Draba, spec. Lin. Juss. R. Br.

LIN. SYST. *Tetradynàmia*, *Siliculòsa*. Silicle sessile, oval or oblong (f. 46. *j.*), with flat or convex valves (f. 46. *j.*). Seeds many, not margined (f. 46. *j.*). Calyx equal at the base. Petals entire. Stamens all toothless. Perennial or annual branched herbs, which are sometimes tufted, sometimes elongated, smooth or pilose, or usually velvety from soft branched hairs. The leaves are either linear, oblong or ovate, entire or toothed. Racemes terminal; pedicels filiform, bractless. Flowers yellow or white.

SECT. I. AIZÒPSIS (from *αει*, *aei*, always, *ζωος*, *zoos*, *alive*, and *οψις*, *opsis*, resemblance; plants always green, like *D. Aizoon*.) D. C. syst. 2. p. 332. prod. 1. p. 166. Little evergreen, tufted, perennial plants with naked scapes, and ciliated stiff leaves. Flowers yellow, with filiform styles, which vary in length. (A proper genus, according to Andrz. in litt.)

1 D. AIZOÌDES (Lin. mant. 91.) scapes naked, smooth; leaves lanceolate-linear, keeled, ciliated; stamens about the length of the petals; style almost as broad as the pod. ♃. H. Native on walls, rocks, and gravelly places of mountains, in France, Germany, Switzerland, North of Italy, Carpathian Mountains, Transylvania, and Britain in South Wales; near Whormshead, 16 miles west of Swansea; about Pennard Castle, near Swansea, abundantly, in inaccessible spots. Jacq. fl. aust. t. 192. Smith, eng. bot. t. 1271. Dràba alpìna, Crantz, aust. 1. p. 13. Alýssum ciliàtum, Lam. fl. fr. 2. p. 479. Dràba montàna, Berg. phyt. univ. icon. Mœ'nchia aizoìdes, Roth. germ. I. p. 273.

Var. β, mìnor (D. C. syst. 2. p. 333.) distinguished by its smaller stature, very short leaves, and smooth pods. Dràba ciliàris, D. C. fl. fr. ed. 3. vol. 4. p. 697.

Var. γ, diffùsa (D. C. l. c.) stems elongated, diffuse. Dràba ciliàris, Lin. mant. 91.—Ger. gallopr. p. 344. t. 13. f. 1.

Aizoon-like or Sea-Green Whitlow-Grass. Fl. March, April. Wales. Pl. 2 or 3 inches.

2 D. BRACHYSTE'MON (D. C. syst. 2. p. 334.) scapes naked, smooth; leaves elongated, linear, keeled, ciliated; stamens hardly equal in length with the calyx. ♃. H. Native of.....? Dràba aizoìdes, Curt. bot. mag. t. 170.—Mill. icon. 1 p. 14. t. 20. f. 2. Dràba ciliàris, Lin. mant. p. 91?

Short-stamened Whitlow-Grass. Fl. March, April. Clt.? Pl. 2 or 3 inches.

3 D. AIZÒON (Wahlenb. fl. carp. p. 193. in a note.) scapes naked, smooth; leaves linear, acutish, keeled, stiff, ciliated; style as broad as the hairy pod, but one half shorter. ♃. H. Native of Bavaria, Austria, Hungary, Transylvania, and Carpathian mountains, particularly on Mount Chocsz; on rocks on the lower mountains. Dràba ciliàris, Schrank. bav. 2. p. 177. Pods the length of pedicels, always hispid with short hairs.

Aizoon or Evergreen Whitlow-Grass. Fl. April, May. Clt. 1819. Pl. ¼ foot.

4 D. CUSPIDA'TA (Bieb. suppl. 424.) scapes naked, villous; leaves linear, acutish, keeled, ciliated; pods lanceolate, hispid, a little longer than the style. ♃. H. Native of Tauria, Apennines, Spain, &c. on mountains, on rocks in places exposed to the sun. Dràba aizoìdes, Pall. ined taur. Bieb. fl. taur. 2. p. 92. but not of Lin. Dràba áspera, Bertol. amœn. ital. p. 92. but not of Adams. D. alpìna, Cav.

Pointed-leaved Whitlow-Grass. Fl. April, May. Clt. 1821. Pl. ¼ foot.

5 D. RI'GIDA (Willd. spec. 3. p. 423.) scape naked, smooth, leaves oblong, stiff, blunt, keeled, sparingly ciliated, older ones reflexed; petals length of calyx; style not equalling the breadth of the smooth pod. ♃. H. Native of Iberia, on rocks. Petals roundish, nearly the length of the calyx.

Rigid-leaved Whitlow-Grass. Fl. April, May. Pl. ¼ foot.

6 D. BRYOÌDES (D. C. syst. 2. p. 335.) scapes naked, smooth; leaves oblong, small, keeled, sparingly ciliated, much crowded; petals and stamens twice the length of the calyx; style hardly equalling the breadth of the smooth pod. ♃. H. Native of Caucasus and Iberia, in alpine, rocky situations. Dràba rígida, Bieb. fl. taur. 2. p. 93. suppl. 426. Dràba cæspitòsa, Hoffm. hort. mosc. 1808. no. 1225. not of Willd. Petals oblong, twice the length of the calyx. Plant emulating *Saxífraga bryoìdes*.

Green-Moss-like Whitlow-Grass. Fl. March, May. Clt. 1821. Pl. 2 inches.

7 D. OLY'MPICA (Sibth. in herb. Banks. D. C. syst. 2. p. 336.) scapes naked, velvety; leaves linear, keeled, much crowded, ciliated; pods ovate, hoary-villous; style very short. ♃. H. Native on Mount Olympus. Dràba Aizoìdes, Smith, prod. fl. græc. 2. p. 4. but not of Lin. Pods ovate, scarcely compressed.

Olympus Whitlow-Grass. Fl. April, May. Pl. 2 or 3 inches.

8 D. BRUNIÆFÒLIA (Stev. in mem. sc. nat. mosc. 3. p. 268.) scapes naked, pubescent; leaves linear, somewhat keeled, ciliated, acute, loosely rosulate; petals twice the length of the calyx and stamens; pods oval, pubescent; style very short. ♃. H. Native of Eastern Caucasus, on Mount Schahdagh. Petals twice the length of the calyx. Plant loosely tufted.

Brunia-leaved Whitlow-Grass. Fl. Jun. Clt. 1825. Pl. ¼ ft.

9 D. ERICÆFÒLIA (Stev. mem. sc. nat. mosc. 3. p. 268.) scapes

naked, smooth; leaves linear, somewhat keeled, ciliated? acute, loosely rosulate; petals twice the length of the calyx and stamens; pods oblong-elliptical, smooth; style very short. ♃. H. Native of Caucasus, on Mount Schadagh, among stones near the limits of snow. Very like *D. bruniæfòlia*.

Heath-leaved Whitlow-Grass. Fl. June. Clt. 1823. Pl. ¼ foot.

10 D. PILÒSA (Adams, from Fisch. in litt. D. C. syst. 2. p. 337.) scape naked, smooth, 2 or 3-flowered; leaves linear, keeled, loosely rosulate, ciliated; calyx pilose; petals twice the length of the calyx and stamens; pods roundish-ovate, smooth. ♃. H. Native of the north of Siberia, at the river Lena.

Pilose-calyxed Whitlow-Grass. Fl. May, June. Clt. 1825. Pl. ¼ foot.

11 D. A'SPERA (Adams, from Fisch. in litt. D. C. syst. 2. p. 337.) scapes naked, smooth; leaves linear, keeled, stiff, ciliated; calyx smooth; stamens hardly the length of the calyx; pods oblong; style very short. ♃. H. Native of the most northern part of Siberia, at the mouth of the river Lena. Habit of *D. aizoìdes*.

Rough-leaved Whitlow-Grass. Fl. May, June. Pl. 2 inches.

12 D. SAUTE'RI (Hopp. ex. Spreng. syst. app. 240.) leaves spatulate, stiff, ciliated; scape smooth; stamens shorter than the corolla; silicle ovate, smooth, crowned by the short style. ♃.H. Native of Switzerland on the Alps.

Sauter's Whitlow-Grass. Pl. ¼ foot.

SECT. II. CHRYSODRA'BA (from χρυσος, *chrysos*, gold, and *Dràba*; that is to say golden Drabas; flowers yellow.) D. C. syst. 2. p. 337. prod. 1. p. 167. Small perennial tufted plants with the leaves neither stiff nor keeled. Flowers yellow, with scarcely any, or very short styles. Silicles oval-oblong.

13 D. A'LGIDA (Adams, from Fisch. in litt. D. C. syst. 2. p. 337.) scapes naked, pilose; leaves oblong, flat, and are pilose with simple hairs, as well as calyxes; pods oblong; style very short; stigma 2-lobed. ♃. H. Native of the north of Siberia; on the shores of the Icy-Sea towards the mouth of the river Lena, and the Bay of St. Laurence. Habit of *Dràba alpìna*, but from it, as well as all the rest of the *Chrysodrabas*, it differs in the hairs being simple, not branched; it is also sometimes smooth.

Var. β, subcarinàta (D. C. syst. l. c.) middle nerve of leaves rather prominent on the under surface.

Var. γ, brachycárpa (D. C. l. c.) pods ovate, shorter.

Algid Whitlow-Grass. Pl. ¼ foot.

14 D. ALPI'NA (Lin. spec. 896. exclusive of the synonyms.) scapes naked, pubescent; leaves lanceolate, flat, pilose with branched hairs; pods oblong; style very short. ♃. H. Native of Lapland, on dry rocks in the Alps, and of Norway in the Alps about Dover; also of North-America, in the Bay of St. Laurence, and the island of St. Laurence. Wahl. fl. lapp. p. 173. no. 316. t. 11. f. 4. Œder. fl. dan. t. 56. Flowers golden yellow, a little smaller than those of *Dràba aizoìdes*. The middle nerve of the leaf in the American plant runs even to its apex, with one tooth on each side, which is not the case in the European plant. Perhaps a distinct species.

Alpine Whitlow-Grass. Fl. April, May. Clt. 1816. Pl. 3 inch.

15 D. GLACIA'LIS (Adams, mem. soc. nat. mosc. 5. p. 106.) scapes naked, covered with starry pubescence; leaves linear-lanceolate, entire, hispid with stellate hairs; pods ovate, smooth; stigma almost sessile. ♃. H. Native of Siberia, at the shore of the Icy Sea, at the promontory called Bykofskoy-mys, and at the river Lena, not far from a place called Shigansk. Differing from *D. a'lgida*, to which it is nearly allied, by the leaves being narrower, pods ovate, and the calyx more villous.

Icy Whitlow-Grass. Fl. May, June. Clt. 1825. Pl. 2 inches.

16 D. RE'PENS (Bieb. fl. taur. 2. p. 93. exclusive of the synonyms of Gmelin. suppl. p. 427.) scapes naked, smoothish; leaves lanceolate, entire, pilose with 2-parted appressed hairs; runners creeping; pods oblong, smooth. ♃. H. Native of Iberia in meadows, between the towns Kasbeck and Koby, also on the Caucasian Alps. Petals obovate, blunt, twice the length of the smooth calyx.

Creeping Whitlow-Grass. Fl. May, Ju. Clt. 1825. Pl. ¼ foot.

17 D. GMELI'NI (Adams in mem. soc. nat. mosq. 5. p. 107.) scapes naked, somewhat hispid; leaves lanceolate, hispid, pilose with stellate hairs; runners not creeping; pods oblong, smooth. ♃. H. Native of Siberia, from the river Yenessei to the eastern sea even to the banks of the river Lena about Shigansk; also on the Ural mountains.—Gmel. sib. 3. p. 255. t. 56. This species is very like *D. repens*, and is sometimes confused with it.

Var, β, porrécta (Trin.) runners very long, but not rooting.

Var. γ, cæspitòsa (Willd. herb.) runners shorter, but the scapes are longer.

Gmelin's Whitlow-Grass. Fl. May, June. Clt. 1823. Pl. ¼ foot.

18 D. TRIDENTA'TA (D. C. syst. 2. p. 339.) scapes naked, smooth; leaves obovate, narrowed at the base into the petiole, 3-toothed at the apex, hairy; pods oblong, smooth. ♃. H. Native of the Alps of Caucasus. D. híspida, Bieb. fl. taur. 2. p. 94. exclusive of the synonyms, suppl. p. 428. About the height of *D. rèpens*, but it is destitute of runners. Differing from *D. híspida* by its larger stature and flowers, and longer pods.

Three-toothed-leaved Whitlow-Grass. Pl. ¼ foot.

19 D. HÍSPIDA (Willd. spec. 3. p. 426.) scapes naked; leaves obovate, somewhat toothed, hispid from bifid hairs; pods oval. ♃. H. Native of Cappadocia. Petals yellow, twice the length of the calyx. Style very short. Plant with the habit of *Erópphila vérna*.

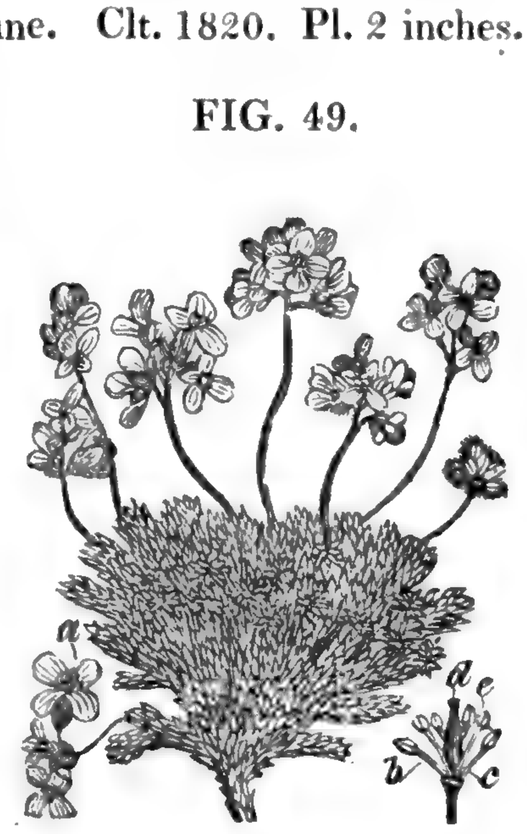
Hispid Whitlow-Grass. Pl. 2 inches.

20 D. INCO'MPTA (Stev. in mem. soc. mosc. 3. p. 268.) scapes velvety, 3-times longer than the leaves; leaves oblong, greyish-velvety from starry-hairs; pedicels shorter than the flowers. ♃. H. Native of the Eastern Caucasus on rocks on Mount Tyfendagh. Habit of *Arètia Vitaliàna*. Flowers yellow. Petals twice the length of the velvety calyx. Deless. icon. sel. 2. t. 44.

Undecked Whitlow-Grass. Fl. June. Clt. 1820. Pl. 2 inches.

21 D. MOLLI'SSIMA (Stev. in mem. soc. nat. mosc. 3. p. 268.) scapes smooth, naked, much longer than the leaves; leaves imbricate, oblong, hoary-velvety with stellate hairs; pedicels longer than the flowers. ♃. H. Native of Eastern Caucasus on Alp. Schadagh. Deless. icon. sel. 2. t. 45. Flowers yellow, about the size of those of *D. aizoìdes*. (f. 49.)

FIG. 49.



Softest Whitlow-Grass. Fl. Ju. Pl. 1 to 2 inches.

22 D. JORULLE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 78.) stem leafy, villous; radical leaves oblong-elliptical, stalked, somewhat velvety; pods elliptical, pubescent. ♃. F. Native of Mexico on the burning mount Jorullo. Petals obovate, hardly longer than the calyx.

Jorullo Whitlow-Grass. Pl. ¼ to ½ foot.

23 D. TOLUCCE'NSIS (H. B. et Kth. nov. spec. amer. 5. p. 78.) stems leafy, smoothish; radical leaves oblong, somewhat hoary; pods elliptical, smooth. ♃. F. Native of colder parts of Mexico, particularly near the town of Tolucco at the height

of 2140 feet. Very like *D. Jorullénsis.* Flowers unknown. Pods elliptical, pointed by the short style. Trunk of root woody.

Tolucco Whitlow-Grass. Pl. $\frac{1}{4}$ foot.

Sect. III. Leucodra'ba (from λευκος, *leucos*, white, and *Draba*, that is to say, *Draba* with white flowers.) D. C. syst. 2. p. 342. prod. 1. p. 168. Small perennial tufted plants, with white flowers, and blunt or emarginate petals; leaves flaccid, not stiff.

24 D. borea'lis (D. C. syst. 2. p. 342.) scape hairy, bearing 1 ovate leaf, the rest of the leaves are oblong and narrowed at the base, entire, velvety with branched hairs; pods ovate. ♃. H. Native of the island of St. Paul. Petals white, oblong-cuneated, twice the length of the calyx.

Northern Whitlow Grass. Pl. $\frac{1}{4}$ foot.

25 D. oblonga'ta (R. Br. in Ross's voy. append.) scapes naked, somewhat hairy with floccose down; leaves rosulate, oblong-linear, entire, ciliated and velvety; pods oblong-elliptical, velvety. ♃. H. Native of North America in the polar regions, particularly at Baffin's Bay. Style very short.

Oblong-podded Whitlow-Grass. Fl. May, June. Clt. 1820. Pl. $\frac{1}{4}$ foot.

26 D. corymbòsa (R. Br. in Ross's voy. append.) scapes naked, rather hispid; leaves densely rosulate, oblong, narrowed at the base, ciliated, and somewhat hispid; pods elliptical, corymbose, rather hispid. ♃. H. Native of the polar regions of North America, particularly at Baffin's Bay. Pods elliptical; Style very short, and terminated by the somewhat capitate stigma.

Corymbose Whitlow-Grass. Fl. May, June. Clt. 1820. Pl. $\frac{1}{4}$ ft.

27 D. Wormskio'ldii (Fisch. ex Spreng. syst. 2. p. 874.) leaves oblong, with one tooth on each side; scape 1-leaved, and is, as well as the leaves, beset with branched pili; flowers in corymbs; silicles oblong, smooth. ♃. H. Native in the extreme eastern parts of Siberia. Flowers white.

Wormskiold's Whitlow-Grass. Pl. $\frac{1}{4}$ foot.

28 D. murice'lla (Wahl. fl. lapp. 178. no. 318. t. 11. f. 2.) scape naked, velvety; leaves oblong, entire, greyish-velvety with stellate hairs; pods oblong-lanceolate, smooth. ♃. H. Native of Norway, Lapland, on dry hills, and perhaps on the western coast of North America and Labrador. D. hírta, Oeder. fl. dan. t. 214. D. Liljeblàdii of Wallm. D. nivàlis, Liljebl. nov. act. ups. 6. p. 47. t. 2. f. 2. Flowers small, whitish. Pods oblong-lanceolate, acute at both ends, and very smooth.

Var. β, *cæ'sia* (Adams, in mem. soc. nat. mosc. 5. p. 268.) differing from the species in the flowers being sulphur-coloured, not whitish, and with the leaves rarely toothed. ♃. H. Native of the north of Siberia at the mouth of the river Lena, at the promontory called Bykofskoy-mys.

Little-hispid Whitlow-Grass. Fl. May, Ju. Clt. 1825. Pl. $\frac{1}{4}$ ft.

29 D. hi'rta (Lin. spec. 897.) scapes puberulous, bearing 2 dentate leaves; radical leaves oblong, nearly entire, puberulous; pods oblong, and are, as well as the pedicels, smooth. ♃. H. Native of Lapland, Norway, and Greenland, on dry shaded rock in the lower mountains. Wahl. fl. lapp. p. 175. no. 319. t. 11. f. 3. A very polymorphous plant, which is often confused with *D. rupéstris.*

Var. β, *apícola* (Wahl. l. c. t. 11. f. 1.) more stiff and dwarfer habit, and the hairs are more stellate than in the other varieties. ♃. H. Native on the higher mountains of the above mentioned countries.

Var. γ, *Norvégica* (Gunn. fl. norv. 2. p. 106. no. 846.) radical leaves larger, somewhat cuneated, acute, toothed, crowded. ♃. H. Draba Pyrenàica, Oed. fl. dan. t. 143. but not of Lin. Native of the Alps of Norway, especially near Port Olaus.

Var. δ, *siliquòsa* (Cham. et Schlecht. Linnæa. 1. p. 23.) plant with a more lose habit; siliques longer. ♂. H. Native of Unalaschka. Leaves broader and more toothed. Sepals beset with simple and forked hairs towards the apex. Siliques 9-lines long.

Hairy Whitlow-Grass. Fl. May, July. Clt. 1817. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ and even $\frac{3}{4}$ foot.

30 D. rupe'stris (R. Br. in hort. kew. ed. 2. vol. 4. p. 91.) scapes puberulous, naked or bearing one leaf; leaves lanceolate, pilose, almost entire; pods lanceolate, and are, as well as the pedicels, pubescent. ♃. H. Native on rocks near the summit of Ben Lawers in Scotland, also on rocks in the mountains of Norway; North America, in the Bay of St. Lawrence, also in the islands of Unalaschka and St. Lawrence. Dràba hírta, Smith, fl. brit. 2. p. 677. engl. bot. t. 1338. but not of Lin. Dràba stellàta, With. fl. brit. 565. Pods lanceolate, hairy-pubescent with very short simple or forked hairs, sometimes but very rarely smooth.

Rock Whitlow-Grass. Fl. May, June. Scotland. Pl. 2 or 3 in.

31 D. niva'lis (Willd. spec. 3. p. 427.) scapes naked or one leaved, smooth; leaves oblong-linear, ciliated, and somewhat pilose; pods elliptic-oblong, and are, as well as pedicels, smooth. ♃. H. Native of Lapland, Norway, Switzerland, Savoy, and Dauphiny, in rocky places on the higher alps. D. stellàta, Oed. fl. dan. t. 142. Pods elliptical-oblong, quite smooth.

Snow Whitlow-Grass. Fl. April, Ju. Clt. 1820. Pl. 1 or 2 in.

32 D. Lappo'nica (Willd. herb. from Stev. obs. ined. D. C. syst. 2. p. 344.) scapes naked, very smooth; leaves lanceolate, quite entire, rather pilose; pods elliptical-oblong, and are as well as the pedicels very smooth. ♃. H. Native on rocks in the Alps of Lapland and Greenland; North America in the Bay of St. Lawrence. D. Androsàcea, Wahl. fl. lapp. 174. no. 317. t. 11. f. 5. exclusive of the synonyms. D. Wahlenbérgii, Hartm. More loose in habit than *D. nivàlis.*

Lapland Whitlow-Grass. Fl. May, Ju. Clt. 1824. Pl. 2 or 3 in.

33 D. Helve'tica (Schleich. pl. dr. Switz. D. C. syst. 2. p. 345.) scapes naked, very smooth; leaves lanceolate, ciliated; pods oval, and are, as well as pedicels, very smooth. ♃. H. Native of Switzerland near the limits of snow on the rocky top of Wendigletscher about Engelberg. D. ciliàris, Wahl. helv. p. 122. no. 671. but not of Lin.

Swiss Whitlow-Grass. Fl. May, July. Clt. 1819. Pl. 1 inch.

34 D. Fladnize'nsis (Wulf. in Jacq. misc. 1. p. 147. t. 17. f. 1.) scapes 2 or 3-leaved, smooth; leaves oblong-linear, stiffly-ciliated; pods oblong, and are, as well as the pedicels, very smooth. ♃. H. Native of Croatia, Carniolia, and Carinthia, on rocks in the higher mountains above Fladniz; also in Transylvania. D. Androsàcea, Willd. spec. 3. p. 428. D. ciliàta, Scop. carn. no. 787. t. 33. D. ciliàris, Hort. syn. 354. Flowers few, approximate; sepals green, oval.

Fladniz Whitlow-Grass. Fl. July. Clt. 1819. Pl. 1 inch.

35 D. tomentòsa (Clairv. herb. val. p. 217? Wahl. fl. helv. p. 123. no. 672. t. 3.) scape 1 or 2-leaved, velvety; leaves oval-oblong, downy with short stellate-tomentum; pedicels pubescent; pods oval, ciliated. ♃. H. Native throughout the higher Alps of Switzerland in the chinks of dry rocks on Gemmy and Stockhorm; central Pyrenees at Valley d'Aure, on the mountain called Penne-blanque; also on the tops of the Carpathian mountains at the height of 6200 feet. D. dùbia, Sut. Petals white, 3 times longer than the calyx. Pods pointed by the punctiform stigma. D. hírta, Towns. itin. hung. 490.

Tomentose Whitlow-Grass. Fl. May, Jul. Clt. 1819. Pl. 1-2 in.

36 D. chamissòni; scapes 2-3-leaved, clothed with stiff short tomentum, as well as the leaves; leaves oval-oblong; pedicels usually exceeding the length of the silicle; silicles pubescent, acute; stigma evidently 2-lobed. ♃. H. Native of North America in the island of Unalaschka and the Bay of St. Lawrence. D. stellàta, Cham. et Schlecht. Linnæa. 1. p. 22. This plant

has a much more loose habit than *D. stellàta*, with longer pedicels and longer styles.

Chamisso's Whitlow-Grass. Pl. 3 to 4 inches.

37 D. stella'ta (Jacq. vind. 113. obs. no. 54. t. 4. f. 3.) scapes 1-leaved, pubescent; leaves oval-oblong, downy with stellate short hairs; pedicels puberulous; pods oblong (f. 46. *j*.) ♃. H. Native in fissures of rocks in very high places exposed to the sun, in the Pyrenees; also in the same sort of places in the Alps of Provence, Dauphiny, Piedmont, Savoy, Switzerland, Austria, Salzburg, Styria, Transylvania, &c. &c. Deless. icon. sel. 2. t. 46. f. B. D. hírta, Jacq. austr. t. 432. D. Austrìaca, Crantz. austr. p. 12. t. 1. f. 4. Flowers very small and white. Pods oblong, usually very smooth.

Var. β, hebecárpa (D. C. syst. 2. p. 346.) pods velvety with down.

Stellate-haired Whitlow-Grass. Fl. May, July. Clt. 1819. Pl. 1 to 3 inches.

38 D. læ'vipes (D. C. syst. 2. p. 346.) scapes naked, or bearing 1 leaf, pubescent; leaves ovate, downy with short stellate hairs; pods elongated, linear, and are as well as the pedicels very smooth. ♃. H. Native of the Pyrenees on rocks. Deless. icon. sel. 2. t. 46. f. A. Very like the two preceding plants.

Smooth-pedicelled Whitlow-Grass. Fl. May. Pl. 2 inches.

39 D. siliquòsa (Bieb. fl. taur. 2. p. 94. suppl. p. 428.) scapes 2-leaved, somewhat pubescent; leaves linear-lanceolate, somewhat toothed, villous with branched hairs; pods linear, and are as well as pedicels smooth. ♃. H. Native of the Alps of Caucasus. Petals white, oblong, hardly emarginate. Pods linear.

Long-podded Whitlow-Grass. Fl. May, July. Pl. 2 inches.

40 D. la'ctea (Adams, mem. soc. nat. mosc. 5. p. 194.) scapes naked, smooth; leaves oblong-linear, acute, very entire, pilose; pods oblong-elliptic, pointed by the short style, and are as well as the pedicels smooth. ♃. H. Native of the north of Siberia on the shores of the Arctic sea, about the mouth of the river Lena. Petals cream-coloured, with short claws.

Milk-coloured-flowered Whitlow-Grass. Fl. July. Pl. 2 inch.

41 D. calyci'na (Desv. jour. bot. 3. p. 185.) scapes naked, smoothish, 1-flowered; leaves oblong, narrowed at the base, pilose, entire; pods linear, smooth. ♃. G. Native of Peru. Petals white, oblong, a little longer than the calyx. Root long, perpendicular.

Large-*calyxed* Whitlow-Grass. Pl. 2 or 3 inches.

Sect. IV. Hola'rges (meaning unknown.) D. C. syst. 2. p. 348. prod. 1. p. 170. Plants annual or biennial. Style short. Flowers white, very rarely yellow.

42 D. inca'na (Lin. spec. 897. Cham. et Schlecht. Linnæa. 1. p. 23.) stems numerous from the root, naked or clothed with the vestiges of the leaves of the preceding year, usually branched emulating stolons, terminated in a tuft of leaves at the top, from which the floriferous branches emerge; leaves elliptical, quite entire, rarely toothed, tapering into the petiole; cauline leaves ovate, acute, toothed; pods elliptical, acute at both ends, beset with simple or branched hairs. ♃. H. Native of the islands of Kamtschatka, Unalaschka, and St. Paul. Flowers white, with emarginate petals, at first corymbose, but at length racemose. Plant pubescent, when young tomentose, but when in fruit it is smooth.

Var. β, Kamtschática; plant more pubescent with starry down, mixed with larger simple hairs. ♃. H. Native of Kamtschatka. Plant more slender and more tufted. Pods narrower. Seeds elliptical, not acute.

Var. γ, Redowskiàna; plant slender, clothed with dense cinereous pubescence; siliques densely-pubescent, twisted; peduncles length of pods; stigma 2-lobed.

Hoary Whitlow-Grass. Pl. $\frac{1}{8}$ foot.

43 D. conto'rta (Ehrh. beitr. 7. p. 155.) stem leafy, branched, velvety with stellate down; leaves ovate, toothed, hoary; pods oblong, smooth, somewhat twisted. ♂. H. Native of Britain on Alpine limestone rocks, particularly on the summits of mountains in Wales, Westmoreland, and Scotland; upon the top of Ingleborough, Yorkshire; upon Ben Lawers, Loch-na-gair, and Cairn-gorm, Scotland; on heaths on the east coast of Sunderland near Wilk-house; also in the Pyrenees, Caucasus, Greenland, Unalaschka, and Labrador. D. incàna, Smith, engl. bot. t. 388. Flowers white; petals bluntly emarginate. D. incàna β, Willd. spec. 3. p. 430.

Var. β, linearifòlia (D. C. syst. 2. p. 348.) stem much branched; leaves linear, hardly toothed; pods a little longer than those of the species. ♂. H. Native of Greenland. Perhaps a proper species.

Twisted-podded Whitlow-Grass. Fl. May, June. Britain. Pl. $\frac{1}{4}$ to 1 foot.

44 D. confu'sa (Ehrh. beitr. 7. p. 155.) stem leafy, somewhat branched, velvety with short stellate down; leaves oblong, somewhat toothed, hoary; pods oblong, pubescent, longer than the pedicels. ♂. H. Native of Norway, Finmark, Sweden, Vallais, also on the Caucasian Alp called Schahdagh, and on the Altaian mountains, in dry fields and on hills. D. incàna, Fl. dan. t. 130. Differing from *D. contórta*, in the pods being terminated by a longer style, pubescent, rarely twisted.

Var. β, paucifòlia (D. C. syst. 2. p. 348.) leaves fewer on the stem. ♂. H. Native of Kamtschatka and Labrador.

Confused Whitlow-Grass. Fl. May, July. Clt.? Pl. $\frac{1}{4}$ to 1 ft.

45 D. cine'rea (Adams, mem. soc. nat. mosc. 5. p. 103.) stem simple, leafy, somewhat pubescent; leaves oblong-linear, entire; pods oblong, pubescent, shorter than the pedicels. ♂. H. Native of sterile mountainous places in the north of Siberia, at the mouth of the river Dschulamda in the Lena, near the town called Schigansk or Sayansk. Very like *D. confùsa*, but differing in the stem being more lax and weaker, and less leafy. Stem leaves 5 or 6 entire, scattered.

Cinereous Whitlow-Grass. Fl. Ju. July. Clt. 1820. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

46 D. Magella'nica (Lam. dict. 2. p. 328.) stem simple, leafy, velvety; leaves oblong, entire; pods oblong, velvety, longer than the pedicels. ♂. H. Native of the Straits of Magellan at the edges of mountain woods. Nearly allied to *D. confùsa*, but differing in the stem being simple, not branched, and in the leaves being entire, not toothed. Flowers white.

Magellan Whitlow-Grass. Fl. Aug. Dec. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

47 D. arabi'sans (Mich. fl. bor. amer. 2. p. 28.) stem leafy, somewhat branched, and rather pubescent; leaves lanceolate, acute, toothed; pods linear, smooth, longer than the pedicels. ♂. H. Native of North America on rocks by river sides. In New England and at lake Champlain. Dràba A'rabis, Pers. Habit of *A'rabis*. Pods erect, twisted, pointed by the style, about 5 lines long. A tufted plant, with short sterile stems, and elongated, flowering ones. Flowers white.

Arabis-like Whitlow-Grass. Fl. May, June. Pl. $\frac{1}{4}$ foot.

48 D. Dau'rica (D. C. syst. 2. p. 350.) stem leafy, branched, somewhat pubescent; leaves ovate, toothed, pubescent; pods oblong, smooth, longer than the pedicels. ♂. H. Native of Dauria in the mountains, called Yablonoi Chrebet. Petals white, somewhat emarginate, narrowed at the base, twice the length of the calyx. Stigma capitellate.

Daurian Whitlow-Grass. Fl. May, Ju. Clt. 1824. Pl. $\frac{1}{2}$ foot.

49 D. Unalaschkia'na (D. C. syst. 2. p. 350.) stem leafy, simple, pubescent; leaves ovate-oblong, entire, pubescent; pods oblong, hairy. ♂. H. Native of the island of Unalaschka. Petals obovate, emarginate, twice the length of the calyx. Flowers 4 or 6, disposed in a racemose-corymb. Stems rather decumbent.

Unalaschka Whitlow-Grass. Fl. May, Ju. Pl. ¼ to ½ foot.

50 D. au'rea (Vahl. from Horn. fl. œcon. ed. 2. p. 599. fl. dan. t. 1460.) stem leafy, somewhat branched, velvety; leaves oblong-linear, acute, entire, pubescent; pods linear, puberulous, twice or thrice the length of the pedicels. ♂. H. Native of Greenland. Hook. bot. mag. 2924. This is the only species in this section with yellow flowers, the rest being all white. Petals obovate, blunt, clawed.

Golden-flowered Whitlow-Grass. Fl. May, June. Clt. 1824. Pl. ½ foot.

Sect. V. Drabe'lla (a diminutive of Draba.) D. C. syst. 2. p. 351. prod. 1. p. 171. Annual or biennial plants. Style none. Flowers small, yellow, or white.

51 D. lu'tea (Gilib. fl. lith. in Ust. del. op. 2. p. 357.) stem branched, leafy, pubescent; leaves oval, denticulated, pubescent; pods elliptical-oblong, smooth, containing from 20 to 40 seeds. ⊙. H. Flowers racemose, small, yellow. Petals blunt, almost elliptical, longer than the calyx.

Var. α, brévipes (D. C. syst. 2. p. 351.) pedicels hardly twice the length of the pods. ⊙. H. Native of Armenia or Cappadocia. Dràba Póntica, Desf. cor. Tourn. p. 67. t. 51. ann. du. mus. 11. p. 381. t. 38.

Var. β, lóngipes (D. C. l. c.) pedicels three or four times longer than the pod. ⊙. H. Native of the north of Caucasus in grassy places and on hills; about Grodno, Dorpath, Moscow, Petersburgh; also in the Ural mountains and Dauria. D. lùtea, Gilib. l. c. D. muràlis, Steph. fl. mosc. p. 29. Bieb. fl. taur. no. 1246. suppl. p. 428.

Yellow-flowered Whitlow-Grass. Fl. May, Aug. Clt. 1825. Pl ½ foot.

52 D. nemora'lis (Lin. spec. ed. 1. p. 643. Houtt. pfl. syst. 4. t. 60. f. 1.) stem branched, leafy, pubescent; leaves ovate, tooths, pubescent; pods elliptical-oblong, containing from 32 to 36 seeds, velvety with small hairs. ⊙. H. Native of Japan by way-sides; in Russia in groves; in Tauria and Caucasus in fields; in Transylvania in shady mountains; in the Carpathian mountains and the Pyrenees. It is said also to grow in Sweden and North America. Dràba muràlis, Thunb. fl. jap. 259. Flowers yellow, differing but little from *D. lùtea*, unless that the pods are pubescent, not smooth.

Grove Whitlow-Grass. Fl. May, June. Clt. 1759. Pl. ½ foot.

53 D. mura'lis (Lin. spec. ed. 1. p. 643.) stem branched, leafy, pubescent; leaves ovate, toothed, somewhat cordate, stem-clasping, rather hairy; pods elliptical-oblong, smooth, containing 12-16 seeds. ⊙. H. Native of England on the shady sides of limestone mountains, but rare. In several parts of Craven, Yorkshire, about Malham Cove; at old Malton on walls, on the Wardon hills, Bedfordshire, on dry banks at Emborough, Somersetshire, naturalised on the walls of Chelsea Botanic Garden, as likewise about the old Botanic Garden, Edinburgh. It is also to be found throughout the whole of Europe on the shady sides of walls, rocks, and mountains. Smith, engl. bot. t. 912. Lam. ill. t. 556. f. 2. Hook, fl. lond. t. 64. D. nemoròsa, All. ped. no. 897. D. ramòsa, Gater. fl. montaub. 114. D. nemoràlis, Delarb. fl. auv. ed. 2. vol. 1. p. 371. Flowers small, white; petals obovate, entire.

Wall Whitlow-Grass. Fl. April, May. Engl. Pl. ½ to 1 ft.

54 D. Carolinia'na (Walt. fl. carol. 174.) stem leafy at the base and hispid, smooth at the top and naked; leaves ovate-roundish, entire, hispid; pods linear, smooth, longer than the pedicels. ⊙. H. Native of North America in sandy fields from Pennsylvania to Carolina, and on the banks of the river Missouri, Virginia, New York, &c. &c. Dràba hispídula, Mich. fl. bor. amer. 2. p. 28. Flowers small, white.

Carolinian Whitlow-Grass. Fl. March, April. Pl. 1 or 2 in.

† *Species, the generic characters of which are doubtful, or not sufficiently known.*

55 D. pumi'lio (R. Br. in D. C. syst. 2. p. 353.) scapes naked, 1-flowered; radical leaves ovate, entire, stalked; pods ovate. ⊙. H. Native of Van Diemen's Land. Flowers small, white. Calyx spreading. Root perpendicular.

Dwarf Whitlow-Grass. Plant hardly 1 inch.

56 D. vesica'ria (Desv. journ. bot. 3. p. 186.) scapes naked, covered with stellate hairs; leaves crowded, oblong, velvety with stellate down, and ciliated with simple hairs; pods ovate, inflated, hairy. ♃. H. Native of Palestine on rocks and mountains, and of Syria on Mount Lebanon. A little tufted plant with yellow flowers.

Bladder-podded Whitlow-Grass. Pl. 1 inch.

57 D. pulche'lla (Willd. herb. from Stev. obs. ined. D. C. syst. 2. p. 354.) scapes naked; leaves lanceolate, quite entire, covered with stellate down on both surfaces; pods ovate, smooth. Native of Persia on the alps in the province of Ghilan.

Pretty Whitlow-Grass. Pl. 1 inch.

58 D. aretioi'des (H. B. et Kth. nov. spec. amer. 5. p. 77. t. 435.) scapes naked; leaves oblong, blunt, villous, imbricated; pods ovate, villous. ♃. G. Native of South America on the Andes of Quito, in the valleys of Mount Antisana at the height of 3400 feet. Arètia càna, Willd. herb. from Kunth. Androsàce càna, Rœm. et Schult. syst. 5. p. 786. Flowers small, yellow.

Aretia-like Whitlow-Grass. Pl. 1 inch.

59 D. viola'cea (D. C. syst. 2. p. 354.) stem suffruticose, branched, diffuse; leaves opposite, ovate, downy; pods oblong. ♄. G. Native of South America in very cold snowy places on Mount Assuay in Quito at the height of 3740 feet. Dràba Bonplandiàna, H. B. et Kth. nov. spec. amer. 5. p. 78. Petals ovate, violet.

Violet-flowered Whitlow-Grass. Fl.? Pl. ½ to 1 foot.

60 D. alyssoi'des (H. B. et Kth. nov. spec. amer. 5. p. 79.) stem shrubby, branched, and is tomentose as well as ovate-oblong, scattered, serrated leaves; pods ovate-lanceolate, tomentose. ♃. G. Native of South America in the province of Pasto near Zapayes Guachucal and Quarchu at the height of 2500 or 2800 feet. Hook, bot. misc. 2. p. 126. t. 32. A frutescent herb with white flowers.

Alyssum-like Whitlow-Grass. Pl. 1 or 2 feet.

61 D. ramosi'ssima (Desv. jour. bot. 3. p. 186.) stem branched, trailing, smooth; leaves spatulate, remotely toothed, smooth. ♃. H. Native of North America. Pods smooth, compressed, not margined, often oblique, bearing a long style.

Much-branched Whitlow-Grass. Pl. trailing.

62 D. glabe'lla (Pursh, fl. amer. sept. 2. p. 434.) scape erect, generally bearing 2 leaves; leaves spatulate-lanceolate, smoothish; racemes crowded with flowers; pods ovate-lanceolate, acute. ⊙. H. Native of North America at Hudson's Bay. Flowers probably white.

Bald Whitlow-Grass. Pl. 1 inch.

63 D.? læviga'ta (Cham. et Schlecht. Linnæa. 1. p. 25.) stem leafy, simple, smooth, straight; radical leaves and lower cauline ones stalked, ovate, tapering to the base, rather fleshy, with obsoletely ciliated margins; pods oblong-lanceolate, smooth, 4 or 6-times longer than the pedicel. ♃. H. Native of the island of St. Lawrence. A plant of peculiar habit from being deficient of the tufts of leaves. Root thick, descending. Flowers white, at first corymbose, but at length racemose. Petals unguiculate, obovate.

Smoothed Whitlow-Grass. Fl. June. Pl. ½ foot.

Cult. The whole of the species of this genus are pretty little plants, particularly the species contained in the two first sections; they are well adapted for ornamenting rock-work, but as

many of them are apt to damp off in the winter in this kind of situation, unless taken great care of, therefore the safest way to preserve them is to keep a plant or two of each of the perennial kinds in small pots among other alpine plants; they thrive best in a mixture of sand, loam, and peat, and the pots should be well drained with potsherds; they are easily increased by dividing the plants at the roots, or by seed. The annual and biennial kinds, having rather a weedy appearance, are only fit for botanic gardens; they should be sown in the open border or on rock-work. *D. nemoràlis* and *D. muràlis* require to be sown in a shady situation.

XXXIV. ERO'PHILA (from ερ, *er*, the spring, and φιλεω, *phileo*, to love; in allusion to the time of flowering). D. C. syst. 2. p. 356. prod. 1. p. 172.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval or oblong, with flat valves. Seeds many, not margined. Calyx equal at the base. Petals 2-parted. Stamens not toothed. Small annual vernal plants, with oval or oblong leaves, which are rosulate at the neck, and naked, erect scapes. Pedicels bractless, often elongated. Flowers small, white. Hairs on leaves few, simple, or sometimes branched.

1 E. America'na (D. C. syst. 2. p. 356.) pods oblong, shorter than the pedicels; scapes 5 or 10-flowered. ⊙. H. Native of North America in fields and among rubbish in places exposed to the sun. Dràba vérna Americàna, Pers. ench. 2. p. 190. Dràba Caroliniàna, var. Bart. fl. phil. 2. p. 58. Differing from *Eróphila vulgàris* in the pods being oblong, not elliptical, nearly 3-times as long as broad.

American Whitlow-Cress. Fl. March, April. Clt. 1820. Pl. 1 to 3 inches.

2 E. vulga'ris (D. C. syst. 2. p. 356.) pods elliptical, shorter than the pedicels; scapes 5-15-flowered. ⊙. H. Native throughout the whole of Europe, on walls, banks, and dry waste ground, abundant in Britain. Dràba vérna, Lin. syst. 896. Smith, engl. bot. t. 586. Schkuhr. handb. 2. no. 1764. t. 179. Fl. dan. t. 983. Leaves either entire or notched.

Common Whitlow-Cress. Fl. Mar. Ap. Britain. Pl. 1 to 3 in.

3 E. præ'cox (D. C. syst. 2. p. 357.) pods somewhat orbicular, hardly shorter than the pedicels; scapes 3-5-flowered. ⊙. H. Native of the Eastern Caucasus near Gandsha. Dràba præ'cox, Stev. mem. soc. nat. mosc. 3. p. 269. Dràba vérna, var. Bieb. suppl. 428.

Early Whitlow-Cress. Fl. Feb. Apr. Clt. 1827. Pl. 1 inch.

4 F. minuti'ssima (D. C. syst. 2. p. 357.) pods?; scape naked, generally 3-flowered; leaves elliptical, stalked. ⊙. H. Native near Constantinople. Dràba minutíssima, Willd. herb. from Stev. obs. ined.

Minutest Whitlow-Cress. Fl. Mar. April. Pl. $\frac{1}{2}$ to 1 inch.

5 E. musco'sa (D. C. syst. 2. p. 358.) pods elliptical, a little longer than the pedicels; scapes 3 or 4-flowered. ⊙. H. Native of Peru among moss and small herbs. Petals semibifid, longer than the calyx. Plant having the appearance of a moss.

Moss-like Whitlow-Cress. Pl. 1 inch.

Cult. These pretty little annual plants should be sown in the autumn in the sunny parts of rock-work, where they should be allowed afterwards to scatter themselves. Being very early flowering plants, therefore very desirable.

XXXV. COCHLEA'RIA (from *cochlear*, a spoon; the leaves of most of the species are hollowed like the bowl of a spoon). Tourn. inst. 215. t. 101. Lin. gen. no. 803. Lam. illust. t. 558. D. C. syst. 2. p. 358. prod. 1. p. 172.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicles sessile, ovate-globose or oblong, with ventricose valves. Seeds many, not margined. Calyx equal at the base, spreading. Petals entire. Stamens toothless. Annual or perennial herbs, usually smooth and fleshy, but sometimes they are puberulous, with scattered, short, simple, or 3-forked hairs. Form of leaves very variable; radical ones usually stalked; cauline ones often auriculately-sagittate. Racemes terminal; pedicels bractless, spreading, filiform, or somewhat angular. Flowers white, except in one species which is lilac. The sections of this genus may constitute as many distinct genera.

Sect. I. Kerne'ra (from κερνος, *kernos*, an earthen vessel; shape of leaves?). D. C. syst. 2. p. 359. prod. 1. p. 172. Silicles globose, somewhat 4-sided at the base, with rather stiff valves. Dissepiment bounded by narrow linear areolæ. Filaments 4, jointed at their middle. Style short; stigma 2-lobed. This section is considered of sufficient importance by Mr. Brown to constitute a distinct genus.

1 C. saxa'tilis (Lam. fl. fr. 2. p. 471.) pods pea-formed, smooth; radical leaves oblong, toothed, pilose, cauline ones linear-oblong. ♃. H. Native of France, Switzerland, Italy, Transylvania, and the Carpathian mountains, on calcareous rocks and in rugged places. Myàgrum saxátile, Lin. spec. 894. Jacq. austr. t. 128. Vind. t. 257. Nastúrtium saxátile, Crantz. austr. 1. p. 14. t. 1. f. 2. Alýssum alpìnum, Scop. carn. ed. 2. no. 793. Alýssum myagroìdes, All. ped. no. 887. Kernèra myagroìdes, Medik. in Ust. new. ann. 2. p. 42. Camelìna saxátilis, Pers. ench. 2. p. 191. Alýssum rupéstre, Willd. enum. 2. p. 612. but not of Tenore. Camelìna myagroìdes, Moretti in giorn. fis. pav. 1820. bim. 1. Flowers white.

Var. β, *incìsa* (D. C. syst. 2. p. 360.) leaves lyrate or pinnatifid.—Mor. hist. 2. p. 293. no. 11. sect. 3. t. 17. fig. ult. Myàgrum saxátile β. D. C. suppl. 597.

Rock Scurvy-Grass. Fl. May, July. Clt. 1775. Pl. $\frac{1}{2}$ ft.

2 C. auricula'ta (Lam. dict. 2. p. 165.) pods pea-formed, smooth; radical leaves oblong, toothed, pilose; cauline ones cordate-sagittate. ♃. H. Native on the mountains of Auvergne, Savoy, Cevennes, and the Pyrenees; on calcareous rocks. Myàgrum montànum, Berg. phyt. 3. p. 140. icon. Myàgrum saxátile β, Willd. spec. 3. p. 410. M. alpìnum, Lapeyr. abr. p. 362. Cheiránthus auriculàtus, Lapeyr. abr. 362. Myàgrum auriculàtum, D. C. suppl. 597. Differing from *Cochl. saxátilis* in the cauline leaves being cordate-sagittate at base, with acute auricles, not sessile. Flowers white.

Eared-leaved Scurvy-Grass. Fl. May, Ju. Clt. 1820. Pl. $\frac{1}{2}$ ft.

3 C.? alyssoi'des (D. C. prod. 1. p. 172.) pods globose, inflated with the calyx; leaves oblong, blunt, sinuately-toothed, thickish, radical ones stalked, upper ones half-stem-clasping. Native of the East Indies. Alýssum cochlearioìdes, Roth. nov. pl. spec. 322. Perhaps a species of *Vesicària*.

Alyssum-like Scurvy-Grass. Pl. 1 foot.

Sect. II. Armora'cia (a name of Celtic origin, from *ar*, near, *mor*, the sea, *rich*, against, that is to say, a plant growing near the sea). D. C. syst. 2. p. 360. prod. 1. p. 172. Silicle elliptical or oblong. Style short, filiform; stigma capitate, nearly disciform. Leaves large, oblong. Flowers white.

4 C. armora'cia (Lin. spec. 904.) pods ellipsoid; radical leaves large, oblong, crenated, cauline ones elongated, lanceolate, toothed, or cut; root large, fleshy. ♃. H. Native of Europe in watery mountainous places. In England about Alnwick, and elsewhere in Northumberland; in several parts of Craven in Yorkshire. Common in waste ground, about orchards and farmyards from the refuse of gardens. In France in Dauphiny, at a place called Roxans; also in Switzerland, Germany, and Transylvania, Woodv. med. bot. 3. p. 406. t. 150. Smith, engl. bot. t. 2223. Schkuhr. handb. 2. p. 229. t. 181. Cochl. rusticàna, Lam. fl. fr. 2. p. 471. Armoràcia lapathifòlia, Gilib. fl. lith. in Ust. del. op. 2. p. 359. Flowers with a spreading calyx. The *horse-radish* is

called upon the Continent *Cran*, *Cran de Bretagne*, *Le Grand Raifort*, (Fr.) *Reeredyck*, (Germ.) *Ramolaccio*, (Ital.) The root of this plant has a pungent smell, and a penetrating acrid taste; and it also contains a sweet juice, which sometimes exudes upon the surface. Einhoff has discovered that the acrimony of *horse-rádish* is owing to a volatile oil of a pale yellow colour, and which has the consistence of oil of cinnamon. The liquid obtained from the root gave traces of sulphur by distillation. The tincture deposits crystals of sulphur, which are of a yellow colour, and when exposed to flame exhale a peculiar sulphuric flavour; this is no doubt the case with all cruciferous plants. Both water and alcohol extract its virtues by infusion. By drying it loses all its acrimony, becoming first sweetish, and afterwards almost insipid; if kept in a cool place, such as a shed or cellar, covered with sand or dry earth, it retains its pungency for a considerable time. It is an extremely penetrating stimulus. It excites the solids, and promotes the fluid secretions. It has frequently been of service in some kinds of scurvy and other chronic disorders, and is sometimes recommended in dropsies, particularly those which sometimes follow intermittent fevers. It is said also to excite appetite when the stomach is weakened or relaxed. Taken in considerable quantities, it provokes vomiting. Thomas Bertholini extols its virtues in the stone from experience: he affirms the juice of *horse-radish* dissolved a calculus of stony concretion that was taken out of a human body. An infusion of it in cold milk makes one of the safest and best cosmetics. The root scraped into shreds is a well-known accompaniment of English roast beef.

Two excellent modes of cultivating the *horse-radish* have lately been described in the Horticultural Society's Transactions by Knight and Judd. Both agree in trenching the soil to a considerable depth, and putting the manure at the bottom of the trench; but Knight plants the sets on the surface, and calculates on the root that strikes down to the dung for produce. Judd, on the other hand, makes holes quite to the bottom of his trenched soil, and in each drops a set, filling up the hole with wood-ashes, rotten tan, or sand, calculating for produce on the shoots made from the set at the bottom of the hole up through the sand or ashes to the surface. Either mode will do extremely well.

The following excellent instruction is given by J. Knight in Hort. Trans. 1. p. 207.

"Horse-radish thrives best in deep, soft, sandy loam, that is not very dry in summer nor inundated in winter; the situation must be open. During winter trench the ground three feet deep, and in the following February procure the sets, in the choice of which take the strongest crowns or leading buds, cutting them about two inches long. Mark out the ground, four feet beds, and one foot alleys, then take from the first bed nine inches of the top soil, laying it upon the adjoining bed, after which take out an opening at one end of the bed, in the common way of trenching, 15 inches deep from the present surface, then level the bottom, upon which plant a row of sets across the bed at nine inches apart each way, with their crowns upright; afterwards dig the next trench the same width and depth, turning the earth into the first trench over the row of sets, thus proceeding trench after trench to the end for as many beds as are wanted. The plants must be kept clear of weeds during summer, and as soon as the leaves decay in autumn, let them be carefully raked off with a wooden-toothed rake; in the following February 18 inches of the earth of the unplanted bed must be laid as light as possible and equally over the beds that are planted, then trench and plant the vacant beds as before directed. The following autumn the first planted *horse-radish* may be taken up by opening a trench at one end of the bed to the bottom of the roots, so that the sticks or roots of *horse-radish* may be taken up entire and sound, which for size and quality will be such as have not been seen. The following February the one year old crop will require additional earth as before directed, which must of course be taken from those beds which are now vacant, which when done, if the ground appears poor or unlikely to produce another vigorous crop, they must have a coat of manure." "Upon every alternate bed, which is not planted, a dwarf annual crop may be grown, such as *spinach* or *radishes*." A moist soil increases its bitter and alkaline flavour.

Common *Horse-radish*. Fl. May, June. Britain. Pl. 2 feet.

5 C. macroca'rpa (Waldst. et Kit. hung. 2. p. 101. t. 184.) pods ellipsoid; radical leaves large, oblong, crenated, cauline ones lanceolate-toothed; teeth cartilaginous; root fleshy; sepals erect. ♃. H. Native of Hungary and Transylvania in humid meadows or marshes. Armoràcia macrocárpa, Baumg. fl. transyl. 2. p. 240. Cochl. crassifòlia, Willd. herb. Flowers and fruit a little larger than those of *Cochl. armoràcia*, and the taste of the root is less acrid. It may be used in the same manner.

Large-podded Horse-radish. Fl. May, July. Clt. 1806. Pl. 2 ft.

6 C. microca'rpa (D. C. syst. 2. p. 362.) pods globose; leaves oblong, auriculately-stem-clasping at the base, toothed. ♃. H. Native of Siberia at Krivoluka. C. armoràcia? Pall. herb. C. Altàica, Schlecht. in herb. Willd. from Stev. obs. ined. Habit of *Myàgrum Austrìacum* or *Lepídium Dràba*. Stem branched. Pods small.

Small-podded Horse-radish. Pl. 1 foot.

Sect. III. Co'chlear (for derivation see genus; form of leaves). D. C. syst. 2. p. 362. prod. 1. p. 176. Silicles of various forms, but never emarginate at the top. Style very short or wanting altogether. Spreading plants, with usually kidney-shaped hollow leaves. Flowers white or tinged with purple.

7 C. glastifo'lia (Lin. spec. 904.) silicles somewhat globose; cauline leaves cordately-sagittate, stem-clasping, acuminated, entire. ♂. H. Native about Ratisbon, in Dauphiny in fields, in the gardens of Corsica, in Portugal on the banks of Douro. Schkuhr. handb. 2. no. 1804. t. 181.—Lob. icon. t. 321. f. 2.—Mor. oxon. 2. p. 312. sect. 3. t. 21. f. 3. A smooth, branched, glaucous herb.

Woad-leaved Scurvy-Grass. Fl. May, July. Clt. 1648. Pl. 1 to 3 feet.

8 C. oblongifo'lia (D. C. syst. 2. p. 363.) pods roundish one-half shorter than the pedicels; cauline leaves oblong, entire, sessile, upper ones with very short auricles. ♃. H. Petals twice the length of the calyx.

Var. α, Dràba cochlearioìdes (Langsdorf, from Fisch. in litt.) Native of the islands of St. Paul, St. Laurence, and Unalaschka.

Var. β, Cochleària A'nglica e Kamtschátka (Pall. in herb. Willd.) Cochl. Kamtschática, Schlecht. in herb. Willd. Native of Kamtschatka. A smooth, branching, fleshy herb. Leaves more narrowed towards the base. Flowers smaller.

Oblong-leaved Scurvy-Grass. Fl. April, May. Pl. ¼ foot.

9 C. A'nglica (Lin. spec. 903.) pods ovate, sub-globose, netted with veins, twice as short as the pedicels; radical leaves stalked, ovate, entire, cauline ones oblong, toothed. ⊙. H. Native of Britain, Norway, Lapland, &c. on the muddy sea-shore, and about the mouths of large rivers. Oed. fl. dan. t. 329. Smith, eng. bot. 552. Cochl. Groenlándica, Gun. norv. no. 196. Cochl. ovalifòlia, Stok. bot. mat. med. 3. p. 436.

English Scurvy-Grass. Fl. May. Britain. Plant variable in size.

10 C. officina'lis (Lin. spec. 903.) pods ovate-globose, twice as short as the pedicels; radical leaves stalked, cordate, cauline ones ovate, toothed, angular. ♂. H. Native on the sea-coast, in stony or muddy situations, abundantly throughout North Europe; plentiful in Britain. Oed. fl. dan. t. 135. Woodv. med. bot. 1. p. 86. t. 29. Smith, eng. bot. t. 551.

Savi, mat. med. tosc. p. 25. t. 18. Tratt. arch. 5. t. 236. C. renifòlia, Stok. bot. mat. med. 3. p. 435.

Var. β, mìnor (Smith, fl. brit. 2. p. 688.) C. Dánica, Gun. norv. no. 197. from Vahl. Many of the stem leaves have long stalks, which are also more cordate than those of the species. Native on the tops of the Scotch and Welsh mountains, in watery places.

Var. γ, rotundifòlia (Smith, l. c.) C. Groenlándica, With. brit. but not of Lin. Leaves rounder than those of the species. Native on the tops of the Scottish and Welsh mountains.

A branched plant, varying much in size. It is called in France, *Cranson officinal;* in Germany, *Löffelkraut.* The Common *Scurvy-Grass* when fresh has a peculiar smell, especially when bruised, and a kind of acrid bitter taste, which it loses completely by drying, but which it imparts by distillation to water or alcohol. It also furnishes an essential oil, with sulphuretted hydrogen, the smell of which is extremely pungent. The fresh plant is a gentle stimulant and diuretic, and is chiefly used for the cure of sea scurvy. It may be eaten in substance, in any quantity, like the water-cress, or the juice may be expressed from it, or it may be infused in wine, beer or water, or its virtues may be extracted by distillation. The juice is recommended as a gargle in scorbutic affections of the gums and mouth. The whole of this section *Cochlear* possess more or less of the above virtues. When this plant is to be cultivated for use, sow the seeds in July, in drills eight inches apart, and when the plants are up thin them to six inches apart; those thinned out may be planted into new beds. In the following spring the succulent leaves will be fit for use.

Officinal or Common Scurvy-Grass. Fl. May, June. Britain. Pl. 2 inches to 1 foot.

11 C. Pyrena'ica (D. C. syst. 2. p. 365.) pods obovate; somewhat globose, length of pedicels; radical leaves cordately reniform, entire, cauline ones few, ovate, toothed. ♂. H. Native along the sides of rivulets, on the upper valleys of the Central Pyrenees. Deless. icon. sel. 2. t. 48. C. officinàlis, Lapeyr. abr. pyr. p. 368. Intermediate between *C. officinàlis* and *C. Groenlándica.*

Pyrenean Scurvy-Grass. Fl. Jul. Aug. Clt.? Pl. ¼ to ½ foot.

12 C. Groenla'ndica (Lin. spec. 904.) pods ovate, length of pedicels; radical leaves stalked, kidney-shaped, entire; cauline ones almost wanting. ♂. H. Native of Greenland, Norway, and Iceland. In Scotland, on the hills of Clova, Angusshire, and at Loch-na-Gare. Lod. bot. cab. 1. t. 45. Smith, eng. bot. t. 2403. Plant very small in its place of natural growth. Flowers white, tinged with purple.

Greenland Scurvy-Grass. Fl. July, Aug. Scotland. Pl. 1 to 3 inches.

13 C. Da'nica (Lin. spec. 903.) pods elliptical, netted with veins, length of pedicels; leaves all stalked, and triangular. ⊙. H. Native throughout the north of Europe, also in Kamtschatka, on the coast, in a muddy soil. In England but rare. In Walney Island, Lancashire; Anglesea; at Wells, Norfolk; on several parts of the south coast from Portland to the Land's end. Oed. fl. dan. t. 100. Smith, eng. bot. t. 696. Stems spreading or prostrate. Flowers pure white.

Var. β, integrifòlia (D. C. syst. 2. p. 366.) cauline leaves very few, radical ones kidney-shaped, entire. Native of Ireland, on the Giant's Causeway.

Danish Scurvy-Grass. Fl. May, June. England and Ireland. Pl. ¼ foot.

14 C. Lene'nsis (Adams, from Fisch. in litt.) pods ovate; 3-times shorter than the pedicels; radical leaves stalked, somewhat kidney-shaped, blunt, cauline ones oblong, almost entire. ♂. H. Native of Siberia, at the river Lena. *C. Groenlándica,* Willd. herb. from Stev. obser. ined. Flowers small.

Lena Scurvy-Grass. Fl. May, June. Pl. ¼ foot.

15 C. A'rctica (Schlecht. in herb. Willd. from Stev. obs. ined.) pods ovate-oblong, a little shorter than the pedicels; radical leaves stalked, ovate, somewhat toothed; cauline ones sessile, furnished with one tooth on each side. ♂. H. Native of the north of Siberia, and Kamtschatka.

Arctic Scurvy-Grass. Pl. ½ foot.

16 C. tridactyli'tes (Banks, herb. D. C. syst. 2. p. 367.) pods ovate-globose; cauline leaves somewhat 3-lobed from a deep tooth on each side. ♂. H. Native of Labrador. Like *C. Lenénsis* and *C. A'rctica.* Pods the size of those of *C. officinàlis.*

Three-fingered-leaved Scurvy-Grass. Pl. ¼ foot.

17 C. fenestra'ta (R. Br. in app. voy. Ross.) pods elliptical, twice as short as pedicel, with an elongated, perforated dissepiment; radical leaves stalked, ovate; cauline ones oblong. ♃. H. Native of North America, in the Polar regions, on the Western Coast, at Baffin's Bay, and near Possession Bay. C. alpìna, Hook.

Windowed Scurvy-Grass. Fl. April, June. Clt. 1819. Pl. ¼ to ½ foot.

18 C. sisymbrioi'des (D. C. syst. 2. p. 368.) pods oblong, twice as short as pedicels; petals oblong; lower leaves pinnatifid, superior ones ovate-lanceolate, entire, or toothed, clasping the stem at the base. ♃. H. Native of Siberia, on the shores of the Icy Sea, and at the river Lena. C. heterophýlla, Schlecht. D. C. prod. 1. p. 375. Flowers largish, white, with oblong sepals, which are membranous at their margin. Gmel. fl. sib. 3. t. 57.

Sisymbrium-like Scurvy-Grass. Pl. 1 foot.

19 C. grandiflòra (D. C. syst. 2. p. 368.) pods oblong; petals large, obovate; cauline leaves ovate-lanceolate, bluntish, grossly toothed, and bluntly auricled at the base.—Native of Siberia, at Nertchinsky-Sawod. Flowers white, larger than those of any of the other species. Leaves large, membranous.

Great-flowered Scurvy-Grass. Pl. 1 foot.

20 C. integrifòlia (D. C. syst. 2. p. 369.) pods oblong; petals obovate-oblong; cauline leaves entire, lower ones stalked, ovate, upper ones nearly sessile, lanceolate.—Native of the Altaian mountains. Very like the two preceding plants. Flowers white, smaller than those of *Cochl. Sisymbrioides.*

Entire-leaved Scurvy-Grass. Pl. 1 foot.

21 C. sa'lsa (Schlecht. in. herb. Willd. from Stev. obs. ined.) pods lanceolate, terminated by the conical style, one half shorter than the pedicel; cauline leaves oblong-lanceolate, cordate, stem-clasping, and are, as well as the stem, pubescent.—Native of Siberia? in salt marshes. Dràba sálsa, Spreng. syst. 2. p. 876. Flowers white, size of those of *C. A'nglica.*

Salt Scurvy-Grass. Pl. ½ foot.

22 C. spathula'ta (Schlecht. in Willd. herb. from Stev. obs. ined. D. C. syst. 2. p. 369.) stem branched, leafy, puberulous; pods lanceolate, pointed, with the short style, a little shorter than the pedicels; leaves spatulate, deeply-toothed, pubescent. ⊙. H. Native of the Aleutian islands of St. Paul and St. George, between Kamtschatka and America. *C. septentrionàlis,* Schlecht. in Willd. herb. from Stev. obs. ined. D. C. prod. 1. p. 174. Deless. icon. sel. 2. t. 47. Dràba spathulàta, Spreng. syst. 2. p. 876. Dràba grándis, Langsdorff, from Fisch. in litt. Very near to *C. árctica,* but easily distinguished from it by the hairs being 3-forked. Flowers cream-coloured. Silicles inflated.

Spatulate-leaved Scurvy-Grass. Pl. ¼ foot.

23 C.? siliquòsa (Schlecht. in herb. Willd. from Stev. obs. ined. and D. C. syst. 2. p. 369.) pods oblong-lanceolate, pointed with the style, one half shorter than the pedicels; leaves oblong, entire. pubescent, narrowed at the base. ♃. H. Native of

Unalaschka, on the highest rocks. Flowers when dry yellowish.

Long-podded Scurvy-Grass. Pl. ½ foot.

24 C.? vèlutìna (D. C. syst. 2. p. 370.) pods elliptical, one half shorter than the pedicels; leaves velvety with branched down, radical ones pinnate-parted, cauline ones sagittate. ⊙. H. Native of Syria, between Aleppo and Mossul. Flowers like those of *C. saxátilis*. Petals broad, obovate. Deless. icon. sel. 2. t. 49. A very distinct species which, perhaps with the following, may constitute a separate genus.

Velvety Scurvy-Grass. Pl. 1 to 3 inches.

25 C. saxifragæfòlia (D. C. syst. 2. p. 370.) pods ovate-oblong; leaves smooth, radical ones stalked, kidney-shaped, palmately and deeply-toothed, cauline ones ovate, 3-lobed, uppermost ones linear. ♃. H. Native of Persia. Flowers very like those of the preceding plant, Deless. icon. sel. 2. t. 50.

Saxifrage-leaved Scurvy-Grass. Pl. ¼ to ½ foot.

Sect. IV. Ionopsi'dium (from *ιον*, *ion*, a violet, *οψις*, *opsis*, resemblance, *ειδος*, *eidos*, similar; like a violet.) D. C. syst. 2. p. 371. prod. 1. p. 174. Silicle roundish, compressed, emarginate at the top. Flowers lilac. An intermediate section between *Cochleària* and *Thláspi*.

26 C. acau'lis (Desf. fl. atl. 2. p. 69.) pods roundish, emarginate, pedicels rising from the root; petioles long; leaves ovate-roundish, entire. ♃. H. Native of Portugal, frequent on the basaltic hills near Lisbon, but rarer in the calcareous hills of Estremadura. Said also to grow in Morocco. C. pusílla, Brot. phyt. p. 100. no. 45. t. 21. f. 2 and 3. Jacq. eclog. t. 132. C. Olyssiponénsis, Brot. fl. lusit. 1. p. 571. Lepídium violifórme, D. C. mem. soc. hist. nat. paris. an. VII. p. 145. Leaves and pedicels rising from the root. Pedicels 1-flowered, and 1½ inch long.

Stemless Scurvy-Grass. Fl. March, May. Clt. 1823. Pl. 1½ in.

† *Species not sufficiently known.*

27 C. sagittæfòlia (Desv. journ. bot. 3. p. 182.) ⊙. H. Native of .....? Flowers small white; pods oblong, entire, tumid, few-seeded; radical leaves oblong, slightly toothed.

Arrow-leaved Scurvy-Grass Pl. ½ foot.

28 C. lyra'ta (Sibth. and Smith, fl. græc. t. 619.) ⊙. H. Native of Sicily. Leaves toothed, smooth; radical ones lyrate, cauline ones oblong, sagittate, stem-clasping.

Lyre-leaved Scurvy-Grass. Pl. ½ foot.

29 C. repa'nda (Med in Ust. new. ann. 2. p. 42.) Native? Lower leaves stalked, waved, pubescent, superior ones repand, stem-clasping, sagittate, hollowed in the form of a spoon.

Repand-leaved Scurvy-Grass.

30 C. longifòlia (Med. in Ust. new. ann. 2. p. 41.)—Native of? Lower leaves on long foot-stalks, upper ones sessile, for the most part entire.

Long-leaved Scurvy-Grass. Pl.?

Cult. The common horse-radish should be planted in February or October in the way recommended under that species, in a deep rich soil. The smaller perennial sorts do best in pots, placed among other alpine plants, but the larger ones should be planted in a shady, rather moist situation, in the open border. The biennial and annual kinds only require to be sown in the open border, the greater part of them grow best in a damp situation, the seeds should be sown directly after they have ripened, or they may be allowed to sow themselves. They are all easily increased by seeds except *Cochleària armoràcia* and *macrocárpa*, which do best by slips from the root, and some others of the perennial species which do not seed freely may be increased by dividing the plants at the root.

Tribe III.

THLASPI'DEÆ (plants agreeing in some important character with Thláspi.) or PLEURORHI'ZÆ (from *πλευρα*, *pleura*, a side, and *ριζα*, *rhiza*, a root; radicle at side of cotyledons; (f. 46. *c.* f. 45. *g. d.*) ANGUSTISEPTÆ (from *angustus*, narrow, and *septum*, a dissepiment.) D. C. syst. 2. p. 372. prod. 1. p. 175. Silicle opening, with a very narrow dissepiment (f. 46. *k. l.*), and keeled navicular valves (f. 46. *k. l. m.* and *n.*). Seeds oval (f. 46. *l.*) sometimes margined (f. 46. *n.*). Cotyledons flat, accumbent, contrary to the dissepiment (f. 46. *k.* f. 45. *a. d.*). A very distinct tribe, and can only be confounded with *Lepidíneæ*, but from which it is easily distinguished by the much compressed seeds and accumbent cotyledons.

* *Cells of silicles from 2 to many-seeded.*

XXXVI. THLA'SPI (from *θλαω*, *thlao*, to compress; seeds compressed.) Dill. fl. giss. gen. nov. p. 123. t. 6. Vent. tabl. 3. p. 110. Thlaspi spec. Lin. Juss. Lam.

Lin. syst. *Tetradynàmia*, *Siliculòsa*. Silicle emarginate at the apex, (f. 46. *k. l.*) with navicular valves which are winged at the back (f. 46. *k.*). Cells 2 or many-seeded (f. 46. *l.*) Petals equal. Calyx equal at the base. Perennial or annual branched, erect, smooth herbs with entire or toothed leaves, radical ones usually stalked, cauline ones stem-clasping. Racemes terminal; pedicels bractless. Flowers of all white.

Sect. I. Pachyphra'gma (from *παχυς*, *pachys*, thick, *φραγμα*, *phragma*, a dissepiment.) D. C. syst. 2. p. 373. prod. 1. p. 175. Silicle broad, emarginate. Style none. Dissepiment thick, double, furnished with 3 longitudinal plaits. Seeds 4, not striated (f. 46. *k.*).

1 T. latifòlium (Bieb. fl. taur. 2. p. 99. supp. p. 430.) radical leaves on long footstalks, cordate, repand-toothed, cauline ones ovate-cordate, on short foot-stalks. ♃. H. Native of Iberia, in woods, also in the north of Caucasus. T. macrophýllum, Hoffm. comm. soc. phys. med. mosc. 1. p. 7. Lèpia latifòlia, Desv. journ. bot. 3. p. 166. Pterolòbium Bieberstèinii, Andrz. cruc. ined. Flowers largish. Petals cuneated, blunt, 3-times longer than the calyx. Deless. icon. sel. 2. p. 51. (f. 46. *k.*).

Broad-leaved Bastard-Cress. Fl. March, April. Clt. 1822. Pl. ½ to 1 foot.

Sect. II. Carpóceras (from *καρπος*, *karpos*, a fruit, and *κερας*, *keras*, a horn; valves horned.) D. C. syst. 2. p. 374. prod. 1. p. 175. Valves expanded at end into a wing resembling a horn. Seeds 4, striated. Dissepiment membranous, oblong.

2 T. ceratoca'rpon (Murr. comm. goett. 1774. p. 26. t. 1.) radical leaves somewhat stalked, obovate-oblong, cauline ones hastate, stem-clasping, with acute auricles. ⊙. H. Native of Siberia, in salt fields, in plenty between the Belokamenskoi station and Fort Seven-Palace. Capséllа cornígera, Medik. in Ust. new. ann. 2. p. 46. Th. cornùtum, Clairv. herb. val. 214. Lepídium ceratocárpon, Pall. Flowers small white. Fructiferous pedicels, filiform.

Horned-podded Bastard-Cress. Fl. May, July. Clt. 1779. Pl. 1 to 1½ foot.

Sect. III. Nomísma (from *νομισμα*, *nomisma*, a piece of money; in allusion to the form of the silicles as well as the names of *Th. arvénsis*, money-wort, monnoyere, Fr.) D. C. syst. 2. p. 375. prod. 1. p. 175. Valves with a wing along the whole back. Seeds numerous, striated.

3 T. ARVE'NSE (Lin. spec. 901.) leaves oblong, toothed, stems erect; pods obovately-orbicular, shorter than the pedicels. ⊙. H. Native throughout Europe, in cultivated or waste fields, and probably has been introduced to many countries with wheat. In England, but not common, particularly in Essex, Suffolk, and Staffordshire. Fl. dan. t. 793. Curt. fl. lond. 6. t. 43. Smith, eng. bot. t. 1659. Schkuhr. hanb. 2. no. 1789. t. 180. Boiss. fl. europ. t. 440. f. 2. Stok. bot. mat. med. 3. p. 438. Flowers small, white. Odour of plant when bruised somewhat alliaceous.

Corn-field Penny-Cress. Fl. May, July. England. Pl. ½ to 1 foot.

4 T. BAICALE'NSE (D. C. syst. 2. p. 376.) leaves oblong, grossly toothed; stems erect; pods orbicular, longer than the pedicels. ⊙. H. Native of Siberia, beyond the Baical, and on the shores of the Baical lake. This is perhaps only a variety of *Th. arvénse.*

Baical Bastard Penny-Cress. Fl. May, Jul. Pl. ½ to ¾ foot.

5 T. COLLI'NUM (Bieb. fl. taur. 2. p. 99.) leaves oblong, toothed, cauline ones linear-sagittate, upright; stems diffuse, somewhat ascendant; pods almost orbicular, ⊙. H. Native of Armenia and Iberia on Mount Alwar, about the metal mines. Th. nemoròsum, Adàmi, Hoffm. cat. hort. mosc. 1808. no. 3249. Very near *Th. arvénse.*

Hill Penny-Cress. Fl. May, July. Clt. 1818. Pl. ½ to ¾ foot.

SECT. IV. NEURO'TROPIS (from *νευρον, neuron,* a nerve, and *τροπις, tropis,* a keel; wings of pod circumscribed by a nerve.) D. C. syst. 2. p. 377. prod. 1. p. 176. Silicle orbicular, emarginate, with a narrow recess. Back of valves expanded into a broad wing, which is circumscribed by a nerve. Seeds numerous, not striated.

6 T. ORBICULA'TUM (Stev. in litt. and D. C. syst. 2. p. 377.) superior leaves quite entire, stem-clasping; pods orbicular. ⊙. H. Native of Iberia. Seeds oblong, compressed, rufous.

Orbicular-podded Bastard-Cress. Fl. May, July. Clt. 1820. Pl. ½ to ¾ foot.

7 T. UMBELLA'TUM (Stev. in D. C. syst. 2. p. 377.) leaves ovate, toothed; radical ones somewhat stalked, cauline ones half stem-clasping; pods obcordate. ⊙. H. Native of Persia, in the province of Ghilan.

Umbellate-flowered Bastard-Cress. Pl. ¼ foot.

8 T. PROCU'MBENS (Lapeyr. abr. 366.) leaves sinuately pinnatifid, or almost entire; petals hardly larger than the calyx; pods 10-12-seeded, blunt at both extremities; stigma sessile. ⊙. H. Native among rubbish on the sea-side, as well as on the sides of roads, or paths about salt pans or pits, or any place where salt is made in Spain, South of France, Piedmont, Tauria, Island of Cyprus, &c. Lepídium procúmbens, Lin. spec. 898. Hil. veg. syst. 11. t. 42. f. 1. Lepídium pusíllum, *var. α,* Lam. fl. fr. 2. p. 468. Hutchínsia procúmbens, Desv. journ. bot. 3. p. 168. Stem procumbent. This is evidently a true Lepídium.

Var. β, erectiúscula (D. C. syst. 2. p. 391.) stems erectish. Native of Syria.

Var. γ, integrifòlia (D. C. l. c.) leaves entire, or sparingly cut. Native of Marseilles.

Procumbent-stemmed Bastard-Cress. Fl. March, May. Clt. 1819. Pl. procumbent

SECT. V. PTERO'TROPIS (from *πτερον, pteron,* a wing, and *τροπις, tropis,* a keel; valves of pods furnished with winged keels.) D. C. syst. 2. p. 377. prod. 1. p. 176. Silicle somewhat obovate, emarginate or truncate. Valves furnished with a wing the whole length on the back (f. 46. *l.*), but the wings are not margined with a nerve as in the preceding section. Seeds not striated.

9 T. ALLIA'CEUM (Lin. spec. 901.) leaves oblong, blunt, somewhat toothed, lower ones stalked, upper ones sagittate, stem-clasping, with acute auricles; pods obovate, ventricose; stigma almost sessile. ⊙. H. Native throughout middle and south Europe, in cultivated fields. Jacq. icon. rar. 1. t. 121. Flowers a little smaller than those of *Th. arvénse,* and the pods are almost one half smaller. Th. arvénse, *β* mìnor, Lam. fl. fr. 2. p. 464. Plant when bruised smelling of garlic.

Garlic-scented Bastard-Cress. Fl. June, July. Clt. 1714. Pl. ½ to ¾ foot.

10 T. PERFOLIA'TUM (Lin. spec. 902.) leaves somewhat toothed, radical ones stalked; cauline ones cordate, stem-clasping; stem branched; petals equal in length with the calyx; pods obcordate, 8-seeded; stigma almost sessile. ⊙. H. Native of Portugal, Spain, France, Switzerland, Germany, Italy, Podolia, Greece, &c. in cultivated fields, especially on a chalky soil; in England, abundant among stone-pits, about Burford, Oxfordshire, but it is not known to be found any where else in Britain. Jacq. aust. t. 337. Smith, eng. bot. t. 2354. Th. alpéstre, Huds. angl, 282.

Var. β, simplicíssimum (D. C. syst. 2. p. 379.) stems simple, strict, striated from the base. ⊙. H. Native of the north of Persia, about Lenckeran.

Perfoliate-leaved Bastard-Cress. Fl. April, July. England. Pl. ½ foot.

11 T. MONTA'NUM (Lin. spec. 902.) leaves somewhat fleshy, entire, radical ones obovate, stalked; cauline ones oblong, sagittate, stem-clasping; petals larger than the calyx; pods obcordate, 4-seeded; style filiform. ♃. H. Native of Europe from Spain to Podolia, and from Sicily to Holland, on mountains. Jacq. aust. t. 237. Bois. fl. eur. t. 441. f. 1. Schkuhr. handb. 2. no. 1794. t. 180. Lepídium thlaspidioìdes, Pall. itin. 3. p. 161. Th. spatulàtum, Gater. fl. montanb. 115.

Var. β, præ'cox (Wulf. in Jacq. coll. 2. p. 124. t. 9.) differing from the species by the plant being a little more glaucous, and with the radical leaves crenated at the top. Dràba cárnica, Scop.

Var. γ, alpìnum (Jacq. aust. 3. t. 238.) style longer, exceeding the ovary, and almost equalling the length of the pod.

Mountain Bastard-Cress. Fl. May, July. Clt. 1808. Pl. ½ to ¾ foot.

12 T. ALPE'STRE (Lin. spec. 903.) leaves entire, radical ones ovate, stalked, cauline ones sagittate, stem-clasping; petals nearly as long as the calyx; pods obcordate, 8 to 12-seeded; style filiform. ♃. H. Native of the Pyrenees, Cevennes, Carpathian mountains, France, Spain, &c. in mountain pastures and meadows; in the north of England, among lime-stone rocks and lead mines; about Settle and Malham, Yorkshire. At Matlock Bath, Derbyshire. Smith, eng. bot. t. 81. Th. cæruléscens, Presl. fl. cech. p. ? Th. montànum, Huds. angl. 282. Th. præ'cox, Schleich. pl. helv.

Alpine Bastard-Cress. Fl. Ju. Jul. England. Pl. ½ foot.

13 T. HETEROPHY'LLUM (D. C. fl. fr. ed. 3. vol. 4. p. 712.) radical leaves stalked, spreading, entire, toothed, or lyrate, cauline ones erect, cordately-sagittate; petals almost equal with the calyx. ♃. H. Native of the Pyrenees, on the borders of Spain. Flowers a little smaller than those of *Th. alpéstre.*

Variable-leaved Bastard-Cress. Fl. June, July. Pl. ¼ foot.

14 T. MAGELLA'NICUM (Pers. ench. 2. p. 189.) radical leaves oval, stalked, almost entire, cauline ones oblong-sessile; petals nearly equal with the calyx; pods oblong, truncately-emarginate, 8-seeded; style short. ♃. ? H. Native of the rocks of Magellan at the places called by French travellers Baie Duclos, and Baie Boucaut. Flowers small, white. Seeds oval-oblong, rufous, compressed, not striated.

Magellan Bastard-Cress. Pl. ¼ foot.

15 T. COCHLEARIFO'RME (D. C. syst. 2. p. 381.) leaves

somewhat fleshy, radical ones stalked, ovate, somewhat toothed, cauline ones cordate, stem-clasping; petals larger than the calyx; pods oblong, somewhat emarginate, 8-seeded (f. 46. *l.*); style short, filiform. ♃. H. Native of Siberia and Dauria, on the tops of the mountains. Deless. icon. sel. 2. t. 52. Flowers very like those of *Th. montànum*.

Scurvy-grass-like Bastard-Cress. Fl. Jul. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

† *Species not sufficiently known.*

16 Th.? samolifo'lium (D. C. syst. 2. p. 382.) leaves ovate, blunt, quite entire, lower ones on short foot-stalks; petals emarginate. Native of Cappadocia. Alýssum samolifòlium, Desf. choix. cor. p. 66. t. 49. Flowers white, about the size of those of *Berteròa incàna*. Very like *Th. montànum*.

Samolus-leaved Bastard-Cress. Pl. 1 to $1\frac{1}{2}$ feet.

17 T. tubero'sum (Nutt. gen. amer. 2. p. 65.) leaves rhomboid-ovate, obsoletely toothed, sessile, radical ones on long footstalks; stem pubescent; root tuberous. ♃. H. Native on the western side of Pennsylvania. Flowers largish, rose-coloured. Pods orbicular, short.

Tuberous-rooted Bastard-Cress. Fl. Apr. May. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

18 T. Schra'nckii (Schult. fl. aust. p. 83.) leaves somewhat hispid, entire, radical ones stalked, cauline ones stem-clasping; calyx shorter than the petals; pods obcordate. Native of Austria on walls along with the *Capsélla Bursa-pastoris*.

Schranck's Bastard-Cress. Fl. May, July. Pl. $\frac{1}{2}$ to 1 foot.

19 T. scapiflo'rum (Viv. fl. cors. app. in Schlecht. Linnæa. 1. p. 503.) leaves all radical, on long stalks, roundish-oblong, quite entire, smoothish; silicles elliptical, slightly emarginated; style elongated. ♃? H. Native of Corsica. Flowers white?

Scape-flowered Bastard-Cress. Pl. 1 inch.

Cult. The species of this genus are hardly worth cultivating except in general collections, as in botanical gardens. The perennial species may be grown on rock-work or in borders; they are readily increased by seeds. The biennial and annual sorts may be either sown on rock-work or in open borders. All the species succeed best in a light sandy soil.

XXXVII. HUTCHI'NSIA (in honour of Miss Hutchins of Belfast, to whom Sir James Smith was indebted for many communications on submarine plants, during the progress of "English Botany"). R. Br. in hort. kew. ed. 1812. vol. 4. p. 82. but not of Agardh. D. C. syst. 2. p. 384. prod. 1. p. 177.

Lin. syst. *Tetradynàmia Siliculòsa*. Silicle elliptical, with navicular wingless valves. Cells 2-seeded, rarely many-seeded. Calyx equal at the base. Petals equal. Herbs small, perennial, rarely annual, many-stemmed, those with entire leaves have purplish flowers, those with pinnate-lobed leaves have small white flowers. Racemes terminal, erect; pedicels filiform, bractless, spreading. Flowers never yellow. Lower leaves opposite.

Sect. I. Iberide'lla (a diminutive of *Ibèris*; like). D. C. syst. 2. p. 385. prod. 1. p. 177. Style filiform. Leaves entire or toothed. Flowers purplish, resembling those of *Ibèris*.

1 H. rotundifo'lia (R. Br. in hort. kew. ed. 2. vol. 4. p. 82.) leaves somewhat fleshy, quite entire; lower ones stalked, obovate; cauline ones ovate-oblong, somewhat stem-clasping; stamens, petals, and style one-half shorter than the pod. ♃. H. Native of Provence, Dauphiny, Piedmont, Switzerland, Germany, Carniola, Carinthia, Transylvania, near the snow among stones and in the fissures of rocks in the Alps. Ibèris rotundifòlia, Lin. spec. 905. Scop. carn. no. 805. t. 37.—All. ped. spec. 27. t. 4. f. 1. Ibèris rèpens, Lam. fl. fr. 2. p. 674. Lepídium rotundifòlium, All. pedm. flor. 1. p. 252. t. 55. f. 2. Noccæ'a rotundifòlia, Mœnch. suppl. 89. Stems many, weak, prostrate, or ascendant. Flower from white to purplish. Seeds 2 or 3 in each cell, alternate, pendulous.

Round-leaved Hutchinsia. Fl. April, Aug. Clt. 1759. Pl. 2 to 3 inches.

2 H. Cepeæfo'lia (D. C. syst. 2. p. 386.) leaves somewhat fleshy, lower ones stalked, oblong-obovate, denticulated at the apex, cauline ones oblong; stamens shorter than the corolla; style 3-times shorter than the pod. ♃. H. Native of Carinthia in the valley called Rabl, also in the Apennines, where it flowers immediately on the melting of the snow. Ibèris cepeæfòlia, Wulf. in Jacq. misc. 2. p. 28. t. 1. Very like *H. rotundifòlia* both in habit and character. Flowers pink or purplish.

Cepæa-leaved Hutchinsia. Fl. April, May. Clt. 1821. Pl. 2 to 4 inches.

3 H. pygmæ'a (Viv. fl. cors. app. in Schlecht. Linnæa. 1. p. 503.) plant smooth; leaves fleshy; radical ones coarsely and obsoletely toothed or quite entire, tapering into the petiole, cauline ones sessile, half-stem-clasping; silicle elliptical, truncate, bluntly emarginate; style very short, permanent. ♃. H. Native of Corsica. Flowers white or purplish.

Pygmy Hutchinsia. Pl. 1 inch.

4 H. pu'mila (D. C. syst. 2. p. 386.) leaves somewhat fleshy, lower ones on long foot-stalks, oval, entire, cauline ones oblong, acutely-sagittate at the base; stamens, corolla, and style much shorter than the pod. ♃. H. Native of Eastern Caucasus on Alp Schadagh. Ibèris pùmila, Stev. mem. soc. nat. mosc. 3. p. 269. Pods narrowed at both ends. Stems many, prostrate, or ascendant.

Dwarf Hutchinsia. Fl. April, June. Clt. 1821. Pl. 1 to 2 in.

5 H. stylo'sa (D. C. syst. 2. p. 387.) leaves somewhat fleshy, lower ones stalked, obovate-oblong, almost entire, cauline ones oblong; stamens, petals, and style about the length of the pod. ♂. H. Native of Naples on the higher mountains, especially in Abruzzo. Ibèris stylòsa, Tenore, prod. fl. neap. 37. Thláspi mínimum, Arduin, specim. 2. p. 37. t. 15. f. 1.? Flowers white, corymbose. Stems many, erect.

Long-*styled* Hutchinsia. Fl. May, July. Clt. 1821. Pl. 1 in.

6 H. brevi'stula (D. C. syst. 2. p. 387.) leaves somewhat fleshy, stalked, obovate, somewhat toothed; pods oblong, truncately-emarginate; style very short. ♃. H. Native of the mountains of Syria. Flowers small, white. Petals oblong-cuneated, blunt, almost truncate. Pods obovately-cuneated, truncately-emarginate at the top; seeds 4 in each cell. A tufted plant, with rather woody roots.

Short-styled Hutchinsia. Fl. April, Ju. Clt. 1825. Pl. 1 in.

7 H. trine'rvia (D. C. syst. 2. p. 387.) leaves quite entire, 3-nerved, oval-oblong, sessile, somewhat cordate, stem-clasping at the base. ♄. ♃. H. Native of Persia on Mount Elwend. Flowers from white to purplish. Valves keeled. A plant with a woody root and many erect stems, which are somewhat shrubby at the base. Deless. icon. sel. 2. t. 53.

Three-nerved-leaved Hutchinsia. Pl. $\frac{1}{2}$ to 1 foot.

8 H. hastula'ta (D. C. syst. 2. p. 388.) leaves cordately-hastulate at the base, ovate-oblong, somewhat denticulated and half-stem-clasping; pods elongated, truncate at the top. ♃. H. Native of Hyrcania and of the north of Persia in the province of Ghilan near Lenckeran. Thláspi hastulàtum, Stev. in litt.—Gmel. sib. 254. t. 56. f. 1. A smooth, somewhat glaucous herb, with erectish stems. Flowers white, suffused with red. Size and habit of *H. rotundifòlia*.

Hastulate-leaved Hutchinsia. Pl. $\frac{1}{2}$ to 1 foot long.

Sect. II. Nasturtio'lum (D. C. syst. 2. p. 388. prod. 1. p. 178.) Leaves pinnate-lobed. Flowers small, white. Like *Dràba* and *Teesdàlia*.

9 H. calyci'na (Desv. journ. bot. 3. p. 168.) leaves pinnate-

parted, and are as well as erect stems pubescent; calyx permanent; pods oblong, narrowed at both ends, and pointed by the style. ♃. H. Native of Siberia on the Altaian mountains, and of North America. Hook, fl. bor. amer. t. 17. B. Lepídium calycìnum, Steph. in Willd. spec. 3. p. 433. Petals white, oblong, twice the length of the calyx, rarely deciduous.

Calycine Hutchinsia. Fl. May, June. Clt. 1819. Pl. 2 or 3 in.

10 H. alpi'na (B. Br. in hort. kew. ed. 2. vol. 4. p. 82.) leaves pinnate-parted, smooth; petals twice the length of deciduous calyx; pods acute at both ends; style very short, exserted. ♃. H. Native of the Pyrenees, Apennines, Mount Baldo, Carpathian mountains, &c. on rather moist rocks. Lepídium alpìnum, Lin. amœn. 4. p. 321. Jacq. aust. 2. t. 137. Schrank, fl. mon. 3. t. 216. Lepídium Hallèri, Crantz. austr. 1. p. 8. t. 1. f. 3. Dràba nasturtiòlum, Scop. carn. ed. 2. no. 791. Dràba alpìna, Baumg. fl. transylv. 2. p. 232. but not of Lin. Seeds 2 in each cell. Flowers white.

Alpine Hutchinsia. Fl. April, Ju. Clt. 1775. Pl. 2 or 3 in.

11 H. petræ'a (R. Br. in hort. kew. ed. 2. vol. 4. p. 82.) leaves pinnate parted, smooth; petals hardly longer than the calyx; pods 4-seeded, blunt at both ends; stigma sessile. ⊙. ♂. H. Native of rocky places from Spain to Sweden, and from England to Laconia and Arcadia, also in the south of Tauria. In England on limestone rocks and walls, particularly on the rocks about Goram's chair, and on St. Vincent's Rocks, near Bristol; at Uphill, Somersetshire; on a limestone wall 2 miles from Pembroke, and in various other parts of Wales, and of the mountainous limestone districts of Yorkshire. Hook, fl. lond. t. 31. Lepídium petræ'um, Lin. spec. 899. Jacq. austr. 2. t. 131. Smith. engl. bot. t. 111. Bois. fl. eur. t. 440. f. 1. Lepídium Linnæ'i. Crantz. austr. 9. t. 2. f. 4. & 5. Lepídium pusíllum. Var. β. Lam. fl. fr. 3. p. 468. Stems erect or tufted, or somewhat decumbent. Flowers white very minute.

Rock Hutchinsia. Fl. Mar. Apr. Engl. Pl. 2 or 3 inches.

12 H. brevicau'lis (Spreng. syst. 2. p. 863.) leaves lyrately-pinnate; leaflets obovate; petals larger than the deciduous calyx; silicles obovate-oblong, obtuse, destitute of the style. ♃. H. Native of the Alps of Carinthia. Lepídium brevicaúle, Hoppe. Flowers white?

Short-stemmed Hutchinsia. Pl. ¼ foot.

Cult. These pretty little plants are well adapted for rock-work or to be grown in small pots (well drained with potsherds) and placed among other alpine plants. The annual and biennial species should all be sown on rock-work or in a dry situation in autumn or early in spring, or they may be allowed to scatter themselves, which is the best mode. The perennial kinds, which are recommended to be grown in pots, or on rock-work, do best in a mixture of loam, sand, and peat. They may be either increased by dividing the plants at the root or by seeds, which ripen in plenty, or cuttings will root freely, planted under a hand-glass.

XXXVIII. TEESDA'LIA (named after Robert Teesdale, author of a catalogue of plants growing about Castle Howard, published in the Linnæan Transactions, vol. 2.) R. Br. in hort. kew. ed. 2. vol. 4. p. 83. Smith in Lin. soc. trans. II. p. 283. D. C. syst. 2. p. 391. prod. 1. p. 178. Guepìnia, Bast. suppl. 35.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval, emarginate at the top, with navicular valves. Cells 2-seeded. Stamens each furnished with a scale on the inside at the base. Small, annual, smooth herbs with rosulate, expanded, stalked, pinnate-lobed radical leaves, and with many leafless simple scapes rising from the neck. Racemes terminal, at time of flowering corymbose, afterwards elongated; pedicels filiform, bractless, spreading. Flowers small, white.

1 T. ibe'ris (D. C. syst. 2. p. 392.) petals unequal, outer ones largest. ⊙. H. Native of dry, barren, gravelly fields in many parts of Europe, especially in the Morea, France, Germany, Denmark, and Sweden. In England about London, Norwich, and Bury, in Worcestershire and Cumberland, near Sheffield. In corn-fields near Easinwold, Yorkshire, in several parts of the Lowlands of Scotland. Abundant in Anglesea. Teesdàlia nudicaúlis, R. Br. l. c. Ibèris nudicaúlis, Lin. spec. 907. Oed. fl. dan. 323. Smith, engl. bot. t. 327. Sturn. fl. germ. icon. Schkuhr. handb. 2. no. 1774. t. 179. Ibèris bursifòlia, Berg. phyt. icon. Thláspi nudicaúlis, D. C. fl. fr. ed. 3. vol. 4. p. 708.

Iberis-like or Irregular-flowered Teesdalia. Fl. May. Britain. Pl. 1 to 2 inches.

2 T. lepi'dium (D. C. syst. 2. p. 392.) petals equal. ⊙. H. Native of sandy, sterile, somewhat wooded places throughout the south of Europe, especially in Portugal and Spain in elevated fields about Madrid, above the monastery of St. Bernard. About Montpelier and in Lower Dauphiny, also in Mauritania. Lepídium nudicaúle, Lin. spec. 898. Thláspi nudicaúle, Desf. atl. 2. p. 67. Teesdàlia regulàris, Smith in Lin. trans. II. p. 283.—Magn. monsp. 186 and 187. icon. Stamens usually 4, rarely 6.

Var. β, *integrifòlia* (D. C. syst. 2. p. 393.) leaves entire, not pinnate. Native of Spain and Sardinia.

Var. γ, *acutíloba* (D. C. l. c.) leaves more oblong, with 3 or 4 acute lateral lobes or teeth, and an elongated, acuminate terminal one. Native of the island of Scio.

Lepidium-like or Regular-flowered Teesdalia. Fl. Feb. May. Clt. 1818. Pl. 1 to 2 inches.

Cult. These pretty little annuals should be sown on rock-work or in a dry sandy situation, and the seeds may afterwards be allowed to scatter themselves.

XXXIX. PLATYSPE'RMUM (from πλατυς, *platys*, broad, and σπερμα, *sperma*, a seed; seeds broad). Hook. fl. bor. amer. t. 18. B.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle elliptical, with navicular valves, terminated by a short, blunt stigma; cells 4-5-seeded; seeds nearly orbicular, flat, cordate at the base, edged with a broad wing. A small annual plant with radical runcinate leaves, and 1-flowered radical pedicels. Stamens naked. Petals and sepals about equal in length.

1 P. scapi'gerum (Hook. l. c.). ⊙. H. Native of North America on the western coast.

Scape-bearing Platyspermum. Pl. 2-3 inches.

Cult. A trifling little plant of easy culture, well adapted for rock-work, where the seeds may be sown.

* * *Cells of silicle* 1-*seeded.*

XL. IBE'RIS (from the country called *Iberia*, now Spain; most of the species grow in such climates). Lin. gen. no. 804. Gært. fruct. 2. p. 279. D. C. syst. 2. p. 398. prod. 1. p. 178.

Lin. syst. *Tetradynàmia, Siliculòsa.* Petals 4, 2 outer ones largest. Silicle much compressed, truncately emarginate. Seeds ovate, pendulous. Herbs or sub-shrubs. Stems round, usually smooth, sometimes fleshy. Leaves alternate, linear, or obovate, entire, toothed, or pinnatifid, sometimes thickish. Racemes sometimes elongated, sometimes corymbose when in flower, afterwards elongated, and sometimes, even after flowering, corymbosely-umbellate; pedicels bractless. Flowers either white or purplish, never yellow; the outer flowers of the corymb are much more irregular than the inner ones.

Sect. I. Iberi'dium (altered from *Ibèris*). D. C. prod. 1. p. 179. Radicle descending. Seed not margined. Dissepiment simple.

§ 1. *Suffruticòso-corymbòsa. Fructiferous pedicels corymbose. Stems suffruticose. Evergreen plants.*

1 I. CONTRA'CTA (Pers. ench. 2. p. 186.) frutescent, smooth; stem erect, elongated; leaves linear, somewhat cuneated, toothed; pods crowded, umbellate. ♄. H. Native of Spain and Portugal. Fructiferous corymbs very much contracted. Flowers white.

Var. β, ciliolàta (D. C. syst. 2. p. 405.). I. fruticòsa, foliis oblongis, crassis, &c. Ant. Juss. in herb. Juss. Leaves evidently ciliated at the base. Perhaps a proper species. D. C. l. c.

Contracted-corymbed Candy-Tuft. Fl. April, June. Clt. 1824. Pl. 1 to 1½ foot.

2 I. PRUI'TI (Tineo. pug. sic. 1. p. 11. no. IX.) stems suffruticose at the base, smooth; leaves obovate-spatulate, entire, or somewhat toothed; pods emarginate, somewhat corymbose. ♃. ♄. H. Native of Sicily on the Nebrode mountains. Very like *Ibèris Tenoreàna*, but differing in the leaves being very smooth, not ciliated, and the flowers pure white; silicles disposed in very short, much-crowded racemes.

Pruitian Candy-Tuft. Pl. ½ foot.

3 I. TENOREA'NA (D. C. syst. 2. p. 404.) stems suffrutescent at the base; leaves somewhat fleshy, crenated, lower ones obovate, narrowed at the base and ciliated, upper ones oblong-linear; pods emarginate, somewhat corymbose. ♄. H. Native of Naples near St. Angelo and on Mount Vellino in Abruzzo. Sweet, brit. fl. gard. t. 88. bot. mag. t. I. cepeæfòlia, Tenore, prod. fl. nap. p. 37. but not of Lin. Flowers purplish or whitish, umbellate. Stems ascendant. A beautiful plant.

Tenore's Candy-Tuft. Fl. May, July. Clt. 1822. Pl. ½ ft.

§ 2. *Herbàceo-corymbòsa. Fructiferous pedicels corymbose. Stems herbaceous. Annual or biennial plants.*

4 I. SPATULA'TA (Berg. phyt. icon. D. C. fl. fr. 4. p. 716.) herbaceous, smooth; leaves spatulate, entire, rather fleshy; pods corymbose, emarginate, with an acute, narrow notch. ⊙. H. Native of the Pyrenees in calcareous stony places, irrigated at certain seasons from the melting of snow. Ibèris cepeæfòlia, Pourr. act. toul. 3. p. 321. but not of Wulf. Ibèris rotundifòlia, Lam. dict. 3. p. 221. but not of Lin. Ibèris carnòsa, Willd. spec. 3. p. 455. Flowers purplish. Seed thick, rufous-brown.

Spatulate-leaved Candy-Tuft. Fl. Ju. Jul. Clt. 1820. Pl. ½ ft.

5 I. NA'NA (All. auct. p. 15. t. 2. f. 1.) herbaceous, smooth; leaves roundish-spatulate, entire, somewhat fleshy; pods corymbose, emarginate, with a broadish blunt notch. ♂. H. Native on rocky mountains in Piedmont, Dauphiny, Provence, &c. Ibèris Aurósica, Vill. delph. 1. p. 349. 3. p. 289. Flowers purple. Petioles never ciliated as in the preceding plant.

Dwarf Candy-Tuft. Fl. June, Aug. Clt. 1822. Pl. ¼ foot.

6 I. VIOLA'CEA (R. Br. in hort. kew. ed. 2. vol. 4. p. 85.) herbaceous, smoothish; leaves stalked, spatulate, blunt, toothed, or quite entire, ciliated; corymbs somewhat umbellate; calyx hairy on the back. ⊙. H. Native of? Flowers violet.

Violet-coloured Candy-Tuft. Fl. Ju. Jul. Clt. 1782. Pl. ¼ ft.

7 I. TAU'RICA (D. C. syst. 2. p. 402.) herbaceous, smoothish; leaves ciliated, somewhat fleshy, lower ones spatulate, somewhat bidentate at the apex, upper ones linear; pods corymbose, emarginate; lobules of pod blunt, shorter than the style. ♂. H. Native of Tauria and Caucasus on stony hills. Ibèris ciliàta, Willd. spec. 3. p. 445. but not of All. Ibèris símplex, D. C. fl. fr. suppl. p. 597. Thláspi saxátile, Habl. taur. p. 157. Very like *Ibèris amàra* and *I. ciliàta*. Flowers white. Leaves ciliated.

Taurian Candy-Tuft. Fl. May, Jul. Clt. 1802. Pl. ½ to ¾ ft.

8 I. CILIA'TA (All. auct. p. 15. but not of Willd.) herbaceous, smoothish; leaves linear, entire, ciliated at the base; pods corymbose, emarginate, lobules blunt, equal in length with the style. ♂. H. Native of Nice and Provence, on rocks. Ibèris Molinèrii, Balb. cat. hort. taur. 1813. p. 43. Flowers nearly like those of *Ibèris pinnàta*, white.

Ciliated-leaved Candy-Tuft. Fl. Ju. Jul. Clt. 1802. Pl. ½ to 1 ft.

9 I. LINIFO'LIA (Lin. spec. 905.) herbaceous, smooth; leaves linear, quite entire, somewhat toothed; pods corymbose, bidentate. ♂. H. Native of Nice, Provence, Dauphiny, Sicily, and Spain, &c. I. tenuifòlia, Presl. ex Spreng.—Garid. aix. 459. t. 105. Very like *Ibèris umbellàta*. Flowers purplish.

Var. β. albiflòra (Desf. in herb. mus. Paris). Flowers white.

Flax-leaved Candy-Tuft. Fl. June, Aug. Clt. 1759. Pl. 1-2 ft.

10 I. UMBELLA'TA (Lin. spec. 906.) herbaceous, smooth; leaves lanceolate, acuminated, lower ones serrated, upper ones quite entire; pods umbellate, very acutely 2-lobed. ⊙. H. Native of Italy, about Genoa, Sarzena, and Pisa; in the island of Crete, and in Spain; on stony hills in sunny places. Curt. bot. mag. t. 106. Thláspi umbellàtum, Crantz. aust. 25. Ibèris corymbòsa, Mœnch. meth. 269. Flowers purplish.

Umbellate or Purple Candy-Tuft. Fl. June, Aug. Pl. ½ to 1 ft.

11 I. LAGASCA'NA (D. C. syst. 2. p. 400.) herbaceous, pilosely-pubescent; leaves oblong, somewhat spatulate, toothed at the top; pods somewhat corymbose, acutely 2-lobed. ⊙. H. Native of Spain in mountainous places in the province of Valentia, and in the vicinity of Hellin in the province of Murcia. Ibèris spatulàta, Lag. fl. hisp. ined. but not of Berg. Flowers white?

Lagasca's Candy-Tuft. Fl. Ju. Aug. Clt. 1822. Pl. ¼ foot.

§ 3. *Herbàceo-racemòsa. Fructiferous pedicels racemose. Stems herbaceous. Annual or biennial plants.*

12 I. ODORA'TA (Lin. spec. 906.) herbaceous, smooth; leaves linear, toothed, ciliated at the base, dilated at the top; pods roundish, emarginate, lobes acute, spreading, shorter than the style. ⊙. H. Native of Crete. Sweet, br. fl. gard. t. 50.—Clus. hist. 2. p. 132. f. 1. Like *Ibèris pinnàta*. Flowers white, sweet-scented.

Sweet-*scented* Candy-Tuft. Fl. Ju. Aug. Clt. 1806. Pl. ½ to 1 ft.

13 I. PINNA'TA (Gouan. hort. monsp. 319.) herbaceous, smooth; leaves pinnatifid; racemes corymbose, but after flowering a little elongated. ⊙. H. Native of Spain, south of France, and Italy, in corn-fields.—Lob. icon. t. 217. f. 2.—Dalech. lugd. 652. f. 2. Flowers white, sweet-scented, corymbose. Calyx a little violaceous.

Var. β, crenàta (Lam. dict. 3. p. 213.) leaves deeply-crenated.

Pinnate-leaved Candy-Tuft. Fl. June, Aug. Clt. 1596. Pl. ¾ ft.

14 I. INTERME'DIA (Guersent, in bull. philom. no. 82. t. 21.) herbaceous; leaves lanceolate, smooth, blunt, entire, or the radical ones are a little toothed; flowers finally racemose; pods ovate, truncate, or very broadly emarginated. ♂. H. Native on calcareous rocks along the Seine between Rouen and Duclair. Intermediate between *I. amàra* and *I. umbellàta*. Flowers white.

Intermediate Candy-Tuft. Fl. Ju. Jul. Clt. 1823. Pl. ½ to 1 ft.

15 I. AMA'RA (Lin. spec. 906.) herbaceous; leaves lanceolate, acute, somewhat toothed; flowers corymbose, finally racemose; pods orbicular, narrowly emarginate. ⊙. H. Native of Europe, from Portugal to Germany, and from England to Italy, frequent among corn; in England about Henley and other places in Oxfordshire; about Wallingford, Berkshire, undoubtedly wild. Smith, engl. bot. t. 52. Flowers white; sepals with membranous margins. The whole plant has a nauseous bitter taste.

Var. β, ruficaúlis (Lejeun. fl. spa. 2. p. 58.) leaves narrower, ciliated. Habit smaller. Stem villous with rufous down.

Bitter Candy-Tuft. Fl. June, July. England. Pl. ½ to 1 foot.

§ 4. *Frutescénti-racemòsa. Fructiferous pedicels racemose. Stems frutescent. Evergreen plants.*

16 I. CONFE'RTA (Lag. varied. 2. no. 22. 1805. p. 213.) stem suffrutescent, dwarf; leaves subradical much crowded, somewhat linear, acute, smooth; scape naked, racemiferous. ♄. H. Native of Spain in the mountains of Leone, and among bushes near Arva. Flowers white, younger ones corymbose, afterwards becoming racemose. Stems diffuse, procumbent, glaucous, as well as younger leaves. Deless. icon. sel. 2. t. 54.

Crowded-leaved Candy-Tuft. Fl. Ju. Jul. Clt. 1824. Pl. ¼ foot.

17 I. GARREXIA'NA (All. ped. no. 920. t. 40. f. 3. and t. 54. f. 2.) frutescent; leaves oblong, narrowed at the base, blunt, quite entire, smooth; flowers corymbose. ♄. H. Native of sunny mountainous stony places in Piedmont about Garrexius and Tenda, in the Apennines and in the eastern and central Pyrenees. Ibèris sempervìrens β, Willd. spec. 3. p. 453. Ibèris sempervìrens, Lapeyr, abr. p. 370.—Barrel. icon. t. 734.—Mor. oxon. 2. p. 297. sect. 3. t. 18. f. 26. Flowers white. Intermediate between *I. sempervìrens* and *I. saxátilis*, with the character of the first, but assuming the habit of the latter. Stems branched.

Garrexian Candy-Tuft. Fl. Ju. Jul. Clt. 1820. Pl. ½ to ¾ ft.

18 I. SEMPERVI'RENS (Lin. spec. 905.) frutescent; leaves oblong, blunt, narrowed at the base, smooth; flowers in long racemes; pods emarginate, with a narrow notch. ♄. H. Native of Crete on rocks. Smith. fl. græc. t. 620. Ib. sempervìrens var. β, Lam. dict. 3. p. 220. var. γ, Willd. spec. 3. p. 453.—Barrel. icon. t. 214. Flowers white.

Evergreen Candy-Tuft. Fl. Ap. Ju. Clt. 1731. Pl. ¾ to 1 ft.

19 I. SUBVELUTI'NA (D. C. syst. 2. p. 397.) frutescent; leaves linear, acute, quite entire, somewhat velvety on both surfaces from short hairs; flowers becoming racemose. ♄. H. Native of Spain in dry mountainous places about the town of Aranjuez and elsewhere. Ibèris sempervìrens, Lag. elench. hort. madr. p. 19. no. 253. Like *I. saxátilis* and *I. Garrexiàna*. Stems much branched. Flowers white.

Velvety Candy-Tuft. Fl. April, June. Pl. ½ to 1 foot.

20 I. PUBE'SCENS (Willd. enum. suppl. p. 43.) frutescent; leaves ciliated, blunt, linear-spatulate, lower ones toothed at the top; flowers corymbose, afterwards becoming somewhat racemose. ♄. H. Native of? Flowers shewy, pale-violet. Stems many, rising from the root, procumbent.

Pubescent Candy-Tuft. Fl. Ap. June. Clt. 1821. Pl. ½ foot.

21 I. SAXA'TILIS (Lin. amœn. 4. p. 321.) frutescent; leaves linear, quite entire, somewhat fleshy, acute, ciliated; flowers corymbose. ♄. H. Native of the south of Europe on hills in places exposed to the sun, particularly in the Pyrenees, Provence, and Sicily, &c. Gouan. fl. monsp. p. 177. f. 1. Ibèris Garrexiàna, Scop. del. ins. 1. p. 16. t. 7.—Mor. oxon. 2. p. 298. sect. 3. t. 18. f. 31.—Garid. aix. p. 466. t. 101. Stems ascendant. Flowers white.

Rock Candy-Tuft. Fl. Ap. Ju. Clt. 1739. Pl. ¼ to ½ foot.

22 I. CORIFO'LIA (Sweet. hort. brit. p. 22.) frutescent; leaves linear, very entire, somewhat fleshy, blunt, smooth; flowers corymbose. ♄. H. Native of Sicily on mount Ventosa. Ibèris saxátilis β, corifòlia, Sims, bot. mag. t. 1642. D. C. syst. 2. p. 396.—Clus. hist. 2. p. 132. icone, Ibèris saxátilis, Lin. herb. Stems decumbent. Flowers white.

Coris-leaved Candy-Tuft. Fl. Ap. Ju. Clt. 1739. Pl. ¼ to ½ ft.

23 I. VERMICULA'TA (Willd. spec. 3. p. 454.) frutescent; leaves linear, quite entire, somewhat fleshy, blunt, somewhat ciliated; flowers corymbose; lobes of pod bluntish and somewhat dilated. ♄. H. Native of Tauria. Ibèris saxátilis, Pall. Ibèris saxátilis γ, vermiculàta, D. C. syst. 2. p. 396. Stems ascendant. Flowers white.

Vermiculate-leaved Candy-Tuft. Fl. Ap. June. Pl. ¼ to ½ ft.

24 I. CAPPADO'CICA (Willd. spec. 3. p. 452.) frutescent; leaves strigose, lower ones spatulate, upper ones linear acute; flowers corymbose. ♄. H. Native of Cappadocia. Petals obovate, white. Flowers at first corymbose.

Cappadocian Candy-Tuft. Pl. ½ foot.

25 I. GIBRALTA'RICA (Lin. spec. 905.) frutescent; leaves wedge-shaped, blunt, somewhat toothed at the top, rather ciliated; flowers corymbose. ♄. G. Native of Gibraltar. Curt. bot. mag. t. 124. Ibèris dentàta, Mœnch. suppl. 88. Very like *I. semperflòrens*. Leaves 2 inches long. Flowers white, with a few of them suffused with red.

Gibraltar Candy-Tuft. Fl. May, June. Clt. 1732. Pl. ½ to ¾ ft.

SECT. II. IBERIDA'STRUM (altered from *Ibèris*.) D. C. prod. 1. p. 181. Radicle horizontal: Seeds somewhat margined. Dissepiment almost double. Seed nearly as in *Biscutélla*, and therefore perhaps a proper genus (Andrz.) but from its habit it is retained with *Ibèris*.

26 I. SEMPERFLO'RENS (Lin. spec. 904.) frutescent; leaves cuneated or spatulate, rather fleshy, blunt, quite entire, smooth; flowers corymbose; pods truncate, and somewhat emarginate at the top, with obsolete lobules. ♄. G. Native of Sicily on rocks about Palermo, &c., and flowering throughout the year in its place of natural growth. I. cuneàta, Mœnch. meth. 269. I. hùmilis, Presl. ex Spreng.—Weinm. phyt. t. 973. f. c.—Seba. thes. 1. p. 2. t. 13. f. 4.—Bocc. sic. 55. t. 29. f. a. j.—Mor. oxon. 2. t. 25. f. 5. Flowers white, sweet-scented.

Ever-flowering Candy-Tuft. Fl. Jan. Dec. Clt. 1679. Pl. 1 or 2 ft.

† *Species not sufficiently known.*

27 I.? LINEARIFO'LIA (D. C. syst. 2. p. 405.) smooth; stem erect; leaves linear, quite entire; pods bifid, racemose.—Native of New Holland at Swan River Lépia linifòlia, Desv. jour. bot. 3. p. 166 and 181. Flower white?

Linear-leaved Candy-Tuft. Pl. 1 foot?

28 I. PYRENA'ICA (Lapeyr. abr. pyr. 370.) herbaceous, smooth; leaves elliptical, quite entire, lower ones opposite; pods broadly emarginate, racemose. ☉. H. Native of the Pyrenees in the valley Gistain, near Sin. Flowers numerous, naked, white, racemose. Stem reddish, branched, erect.

Pyrenean Candy-Tuft. Fl. June, July. Pl. ¾ to 1 foot.

Cult. The whole of the species of this genus are very ornamental, and deserve to be cultivated in every garden. The annual and biennial sorts may be all sown in open flower-borders, where they will flower and ripen their seed: if sown at several different times through the summer a succession of flowers may be kept up, until the frost destroys them. Many of the species will continue to bloom throughout a mild winter, if the seeds are sown in August. The shrubby species are well adapted for ornamenting rock-work, or the front of flower-borders, as they flower profusely. Cuttings of these will root freely if planted under a hand-glass in common garden mould, or they may be increased by seeds. The two green-house species *I. Gibraltárica* and *I. semperflòrens*, grow freely in any light rich soil, and young cuttings planted in the same sort of soil under a hand-glass will root freely.

XLI. THYSANO'CARPUS (from θυσανος, *thysanos*, a fringe, and καρπος, *karpos*, a fruit; broad fringed pods.) Hook fl. bor. amer. t. 18. f. A.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle obovate, emarginate at the apex, with a thick style in the recess, 1-2-celled; cells 1-seeded, with navicular keeled valves. Seeds not margined. Stamens naked. Petals much shorter than the sepals. —A small annual plant, with narrow, obtuse, runcinate, rosulate, radical leaves, and a few linear-lanceolate entire, rather stem-clasping cauline ones, one under each branch or raceme. Racemes elongated.

1 T. runcina'tus (Hook. l. c.) ⊙. H. Native of North America, probably on the Rocky Mountains.

Runcinate-leaved Thysanocarpus. Pl. 1 foot.

Cult. An insignificant plant of easy culture; the seeds only require to be sown in the open border early in spring.

XLII. BISCUTE'LLA (from *bis*, double, and *scutella*, a saucer; in allusion to the form of its silicles.) Lin. gen. no. 808. Gært. fruct. 2. p. 278. t. 141. D. C. syst. 2. p. 406. prod. 1. p. 181.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle flat, biscutate, (f. 46. *m.*) with orbicular 1-seeded cells, which are laterally united to the axis. Style long, permanent (f. 46. *m.*). Seed compressed. Embryo inverted. Perennial or annual herbs, usually hispid, but sometimes downy or smoothish, with oblong entire, toothed or pinnatifid, somewhat radical or cauline leaves, and round erect stems, which are usually somewhat corymbosely branched at the top by racemes, which when in flower are short, but when in fruit elongated; pedicels filiform, bractless. Flowers yellow, scentless.

Sect. I. Iondra'ba (from *ιον, ion*, a violet, and *Dràba*, Whitlow-Grass.) D. C. syst. 2. p. 407. prod. 1. p. 181.—Med. gen. nov. t. 1. f. 14. in Ust. new. ann. 2. p. 37. Calyx 2-spurred at the base. Glands on the torus, very prominent.

1 B. auricula'ta (Lin. spec. 911.) calyxes bluntly 2-spurred; pods smooth, rough in the centre from elevated dots, with the lobes meeting over the style at the top. ⊙. H. Native of Portugal, Spain, south of France, southern parts of Germany, Sicily, and Mauritania, in cultivated fields. D. C. diss. no. 1. t. 1. f. 2. Schkuhr. handb. 2. no. 1821. t. 182. Berg. phyt. 3. p. 55. icon. Clypèola auriculàta, Crantz. cruc. p. 93. B. auriculàta *β*, Lam. dict. 3. p. 617. illust. t. 570. f. 2. Flowers pale yellow.

Eared-calyxed Buckler-Mustard. Fl. June, July. Clt. 1683. Pl. 1 to 2 feet.

2 B. erigerifo'lia (D. C. diss. no. 3. t. 1. f. 1.) calyxes acutely 2-spurred; pods smooth, almost meeting over the style at the top (f. 46. *m.*). ⊙. H. Native of Spain, frequent in cornfields. Deless. icon. sel. 2. t. 55. B. auriculàta var. *α*, Lam. dict. 2. p. 617. exclusive of the synonyms. B. Orcelitàna, Lag. fl. hisp. ined. Like *B. auriculàta*, but differing in the spurs of calyx being acute, not blunt.

Erigeron-leaved Buckler-Mustard. Fl. June, July. Clt. 1819. Pl. 1 foot.

3 B. hi'spida (D. C. diss. no. 3. t. 1. f. 1.) calyxes acutely 2-spurred; pods smooth, rough in the disk from elevated dots, not overhanging the style at the top; stem hispid. ⊙. H. Native of Provence, Piedmont, and probably throughout Italy, on mountains in places exposed to the sun. Sims, bot. mag. 2444. B. macrocárpa, Hort.—Barrel. icon. 230 and 1219.—Col. ecphr. 2. p. 49. t. 61.—Mor. oxon. 2. p. 247. sect. 3. t. 9. f. 7. Plant hispid with crowded hairs.

Hispid Buckler-Mustard. Fl. June, July. Clt. 1818. Pl. 1 to 1½ foot.

4 B. cichoriifo'lia (Lois. add. p. 167.) calyxes rather acutely 2-spurred; pods smooth, rough in the centre from elevated dots, not overhanging the style at the top; stem villous. ♃. H. Native of stony places exposed to the sun, at the bottom of the central Pyrenees, not far from the Bagneres de Luchon. D. C. diss. no. 4. t. 2. B. picridifòlia var. Lapeyr. abr. pyr. 373. Stems branched, rather reddish. Leaves runcinately-pinnatifid. Flowers large.

Succory-leaved Buckler-Mustard. Fl. May, July. Clt. 1820. Pl. 1 to 2 feet.

Sect. II. Thlaspi'dium (from *thlaspi*, and *ειδος, eidos*, like.) D. C. syst. 2. p. 409. prod. 1. p. 181. Med. gen. nov. t. 1. f. 5. from Ust. new. ann. 2. p. 38. Calyxes equal at the base. Glands on the receptacle, hardly elevated.

§ 1. *Annuæ. Plants annual.*

5 B. lyra'ta (Lin. mant. 354.) pods pilose, hispid in their disks; radical leaves lyrate. ⊙. H. Native of Portugal, Spain, Calabria, Sicily near Palermo, north of Africa near Tangiers, &c.—Bocc. sic. 45. t. 23. A very polymorphous species.

Lyre-leaved Buckler-Mustard. Fl. June, July. Clt. 1799. Pl. 1 to 1½ foot.

6 B. raphanifo'lia (Poir. voy. har. 2. p. 198.) pods even, glabrous; radical leaves lyrate. ⊙. H. Native of Sicily near Palermo, and in Mauritania. B. laxiflòra, Presl. ex Spreng. Differing from *B. lyràta* in the pods being very smooth, not hispid, and perhaps the leaves are less cut.

Radish-leaved Buckler-Mustard. Fl. June, July. Clt. 1819. Pl. 1 to 2 feet.

7 B. margina'ta (Tenore, fl. nap. p. 38,) silicles scabrous on both surfaces, with brownish margins; stem almost naked; leaves pilose, lyrate; lobes blunt, with the terminal one very large, bidentate. ⊙? H. Native of Naples.

Marginate-podded Buckler-Mustard. Fl. June, July. Clt. 1820. Pl. ¾ foot.

8 B. mari'tima (Tenore, prod. fl. nap. p. 38. fl. nap. t. 61.) pods smooth, with ciliated margins; radical leaves lyrate. ⊙. H. Native of Goat's Island and about Fondi in Naples, by the sea-side. Very like the two preceding species, but nevertheless it differs in the pods being not smooth all over, nor pilosely-hispid, but smooth in their disks, and ciliated along their margins in a longitudinal line.

Sea-side Buckler-Mustard. Fl. June, July. Clt. 1824. Pl. 1 to 1½ foot.

9 B. cilia'ta (D. C. diss. no. 9. syst. 2. p. 410.) pods smooth in the disk, but ciliated on the margins; stem erect, elongated, leafy; leaves sessile, oblong, remotely toothed. ⊙. H. Native of Italy and Spain. B. coronopifòlia, Willd. spec. 3. p. 474. D. C. icon. gall. rar. 1. p. 12. t. 39. but not of Linnæus. B. A'pula, Lam. dict. 3. p. 618. exclusive of the synonyms. B. dídyma, Willd. enum. 2. p. 673.

Ciliated-podded Buckler-Mustard. Fl. June, July. Clt. 1790. Pl. 1 foot.

10 B. depre'ssa (Willd. enum. 2. p. 673.) pods smooth in the disk, but ciliated at the margins; stem dwarf, somewhat diffuse; leaves oblong-obovate, cuneated at the base, remotely toothed. ⊙. H. Native of Egypt in the deserts of Alexandria. D. C. diss. no. 10. B. pùmila, Balb. cat. hort. taur. Pods constantly ciliated at their margins along the sutural line. Perhaps only a variety of *B. ciliàta*.

Depressed Buckler-Mustard. Fl. Ju. Jul. Clt. 1818. Pl. ½ ft.

11 B. microca'rpa (D. C. diss. no. 11. syst. 2. p. 411.) pods with hispid disks and ciliated margins; stem almost naked, much branched; leaves almost all radical oblong, sinuately-toothed. ⊙. H. Native of Andalusia on the rock of Gibraltar about St. Roch. B. tumídula, Lag. fl. hisp. ined. Flowers small, in long racemes.

Small-fruited Buckler-Mustard. Fl. Ju. Jul. Clt. 1819. Pl. 1½ ft.

12 B. erioca'rpa (D. C. diss. no. 12. t. 9. f. 2. syst. 2. p. 411.) pods pilosely-hispid in the disk; stem erect, simple; leaves oblong-cuneated, somewhat toothed. ⊙. H. Gathered beyond Spain on a journey to Mogodor by Broussonet. Pods the size of those of *B. A'pula*.

Woolly-fruited Buckler-Mustard. Fl. Ju. Jul. Clt. 1820. Pl. ½ ft.

13 B. Colu'mnæ (Tenore, prod. fl. nap. p. 38.) pods scabrous on the disks and margins with short hairs; radical leaves obovately-cuneated, acute, toothed; stem almost naked, hispid at

the base. ⊙. H. Native of Apulia or Puglia and Lucania. B. dídyma β. Lin. spec. 911.—Col. ecphr. 1. p. 283. t. 284. f. 1.—Mor. oxon. 2. p. 249. sect. 3. t. 9. f. 12. Very like *B. eriocárpa* and *B. A'pula*, but differing in the pods being twice the size. There is a variety of this with sinuately-lyrate leaves.

Columna's Buckler-Mustard. Fl. Ju. July. Clt. 1819. Pl. 1 ft.

14 B. A'pula (Lin. mant. 254.) pods rough in the disks and margins with small hairs; leaves lanceolate, serrated; stem leafy, branched, hairy. ⊙. H. Native of the mountains of Italy, Naples, and Greece. Lam. ill. t. 560. f. 1. but not of his dict. Schkuhr. handb. 2. no. 1824. t. 182. Smith, fl. græc. t. 629. Flowers small. Pods approximate. D. C. diss. no. 15. syst. 2. p. 412.

Apulian Buckler-Mustard. Fl. Ju. July. Clt. 1710. Pl. 1 ft.

15 B. leiocá'rpa (D. C. diss. no. 16. syst. 2. p. 413.) pods smooth; leaves lanceolate, serrated; stem leafy, hairy, branched. ⊙. H. Native of the Levant. B. A'pula, Gært. fruct. 2. p. 279. t. 141. Very like *B. A'pula*, but differing in the fruit being very smooth, not rough, &c. This plant was formerly cultivated in the jardin des plantes, Paris, under the name of *B. orientàlis*.

Smooth-podded Buckler-Mustard. Fl. Jun. Jul. Clt. 1816. Pl. 1 foot.

16 B. obova'ta (Hort. par. D. C. diss. no. 18. syst. 2. p. 413.) pods smooth; leaves sub-radical obovate, grossly toothed, and narrowed into the petiole, smoothish. ⊙. H. Native of? Very like *B. montàna*, but differing in the root being annual, not perennial.

Obovate-leaved Buckler-Mustard. Fl. June, July. Clt 1818. Pl. 1 foot.

§. 2 *Perénnes. Plants perennial.*

17 B. monta'na (Cav. icon. 2. p. 50. t. 177.) pods smooth, even; leaves nearly all radical obovate-cuneated, toothed, downy. ♃. H. Native of Spain, in Valentia, on rocks. D. C. diss. no. 17. Stems many from the same root.

Mountain Buckler-Mustard. Fl. March, May. Clt. 1820. Pl. ½ to ¾ foot.

18 B. læviga'ta (Lin. mant. 225.) pods smooth, even; leaves nearly all radical, pilose, scabrous, oblong, somewhat toothed or entire, cauline ones linear, few, quite entire. ♃. H. Native of mountains in places exposed to the sun, in the Alps of Europe, particularly in the Pyrenees, Jura, &c. Jacq. aust. t. 339. icon. rar. p. 11. t. 38. Schrank. fl. mon. 1. t. 94. Bois. fl. eur. t. 447. B. dídyma, Scop. carn. no. 804. Clypèola dídyma, Crantz. aust. p. 20.

Var. β, *B. alpéstris;* Waldst. ex. Kit. pl. rar. hung. 3. p. 253. t. 228. Native of Hungary.

Var. γ, *B. glàbra* (Clairv. herb. val. 216.) a very common plant, easily distinguished from the rest.

Smoothed Buckler-Mustard. Fl. Mar. My. Clt. 1790. Pl. 1 ft.

19 B. lu'cida (D. C. diss. no. 20. t. 7. syst. 2. p. 414.) pods smooth, even; leaves smooth, for the most part radical. ♃. H. Native of Abruzzo, in Naples, on mountains. Plant easily distinguished from the rest by its smooth shining leaves.

Var. α, *dentàta;* lower leaves toothed. B. lùcida, Balb. hort. taur.

Var. β, *integrifòlia;* lower leaves entire. B. spatulàta, Lam. dict. 3. p. 620.—Barrel. icon. t. 254.

Shining-leaved Buckler-Mustard. Fl. Jun, Jul. Clt.? Pl. 1 ft.

20 B. coronopifo'lia (All. ped. no. 907.) pods smooth, even; leaves pilosely-scabrous, for the most part radical, pinnatifid, with 2 or 3 remote lobes on each side. ♃. H. Native of Spain, south of France, and Piedmont, in sterile places of mountains exposed to the sun. Sisýmbrium Valentìnum, Lin. spec. 920.? exclusive of the synonyms. B. dídyma, var. χ. Gouan. ill. p. 41.—D. C. diss. no. 22. t. 18.

Buckhorn-leaved Buckler-Mustard. Fl. Jun. July. Clt. 1790. Pl. ½ to ¾ foot.

21 B. ambí'gua (D. C. diss. no. 23. t. 11. f. 1. syst. 2. p. 415.) pods smooth, even; leaves pilosely-scabrous, radical ones sinuately-toothed, narrowed at the base, cauline ones very few, somewhat cordate at the base and half stem-clasping. ♃. H. Native of Nice, south of France, and Spain, in sterile places exposed to the sun.

Var. α, *revolùta;* leaves with the recesses of the teeth revolute. B. coronopifòlia, Lin. mant. 255.?

Var. β, *plàna;* leaves with the recesses of the teeth flat.

Ambiguous Buckler-Mustard. Fl. June, July. Clt. 1819. Pl. ½ to ¾ foot.

22 B. saxa'tilis (Schleich. cent. exsic. no. 69.) pods smooth, rough with elevated dots on the disk; leaves rough with hairs, generally radical, oblong. ♃. H. Native of the south of Europe, in barren mountainous places, particularly in Transylvania, Italy, south of France, and Spain. D. C. diss. no. 24. t. 10.

Var. α, *B. longifòlia* (Vill. dauph. 3. p. 305.) leaves entire.

Var. β, *B. móllis* (Lois. not. p. 168.) leaves deeply-toothed or sinuately-pinnatifid.

Var. γ, *B. intermèdia* (Gouan. ill. p. 42.) leaves toothed, stem very dwarf. B. depréssa, Thom. pl. exsic. A very variable species, and only can be distinguished by the pods being rough on the disk from elevated dots.

Rock Buckler-Mustard. Fl. Jun. Aug. Clt. 1819. Pl. ½ to ¾ ft.

23 B. sempervi'rens (Lin. mant. 255.) pods smooth, rough on the disk with elevated dots; leaves generally radical, erect; linear-lanceolate, hoary, almost entire. ♃. H. Native of Spain, in the province of Valentia; also in Portugal in Estremadura. B. anchusæfòlia, Turr. giorn. venez. t. 1. from Vittm. sumn. 4. p. 33.—Barrel. icon. t. 841.—Bocc. mus. 2. p. 167. t. 122.

Evergreen Buckler-Mustard. Fl. June, July. Clt. 1784. Pl. ½ to ¾ foot.

24 B. tomento'sa (Lag. in litt. D. C. syst. 2. p. 416.) pods finely pubescent and rough with dots; leaves oblong, narrowed at the base, repand-toothed, soft, downy; those on the branches stem-clasping. ♃. H. Native of Spain, on mountains, growing in chinks of rocks. Stems woody at the base.

Tomentose Buckler-Mustard. Fl. Jun. July. Pl. ¾ to 1 foot.

25 B. stenophy'lla (Duf. in ann. gen. 7. p. 299.) pods rough on the disk with dots, smooth; petals furnished with 2-auricles; radical leaves hispid with rigid hairs, lanceolate-linear, remotely toothed, or rather somewhat pinnatifid; stems almost naked and rather simple. ♃. H. Native of Spain, in Valentia. Perhaps sufficiently distinct from *B. coronopifòlia* and *B. saxátilis*.

Narrow-petalled Buckler-Mustard. Fl. June, July. Clt. 1821. Pl. ¾ to 1 foot.

† *Species hardly known.*

26 B. ma'jor (Schkuhr. handb. 2. no. 1822.) calyx laterally gibbous; pods smooth, veiny.

Larger Buckler-Mustard. Fl.? Pl. 2 feet?

27 B. angustifo'lia (Schkuhr. handb. 2. no. 1823.) calyxes laterally gibbous; pods warted, rough.

Narrow-leaved Buckler-Mustard. Pl. 1 foot.

Cult. These are pretty plants with yellow flowers. The perennial species are well adapted for ornamenting rock-work, or the front of flower-borders; they prefer a dry sunny situation. The annual kinds should be sown in the open borders, and if sown at different times throughout the season a succession of flowers may be kept up. A light sandy soil suits them all best, and as they all produce seeds in abundance they are therefore easily increased.

XLIII. MEGACARPÆ'A (from *μεγας*, *megas*, great, and *καρπος*, *karpos*, a fruit; pods large). D. C. syst. 2. p. 417. prod. 1. p. 183.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle flat, biscutate, emarginate at each end. Cells much compressed, 1-seeded, winged on the margin and united laterally to the axis. Style none. Radicle, ascendant. Perennial herbs, with a scaly neck and multifid leaves. Flowers in panicles small, perhaps yellow. Pods large.

1 M. LACINIA'TA (D. C. syst. 2. p. 417.) leaves villous; radical ones stalked, pinnate-parted, with deeply toothed or cut lobes. ♃. H. Native of Siberia, in the Kirghisian-steppe, and on the gypsaceous hills in the desert called Arsagar, beyond the river Volga. Biscutélla megalocárpa, Fisch. in litt. D. C. diss. bisc. no. 5. t. 3. Flowers small, but not sufficiently known. Stem furnished at the neck with the vestiges of the petioles of preceding year.

Jagged-leaved Megacarpæa. Fl. June, July. Clt. 1818. Pl. ½ to 1 foot.

† *Species not sufficiently known.*

2 M. ANGULA'TA (D. C. syst. 2. p. 418.) leaves smooth, entire, or repand-toothed. ♃. ? H. ? Native of Siberia. The description of this plant has been taken from a very incomplete specimen, by De Candolle, but from it, it is evident, that it is a species of *Megacarpæ'a*, and very distinct from *M. laciniàta.*

Angular-leaved Megacarpæa. Pl. 1 foot.

Cult. These plants are well adapted for rock-work. They can only be increased by seeds.

XLIV. CREMO'LOBUS (from *κρεμαω*, *kremao*, to suspend, and *λωβος*, *lobos*, a pod; cells hanging from the axis.) D. C. syst. 2. p. 418. prod. 1. p. 184.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle stalked, flat; biscutate. Cells marginate, hanging from the top or end of the axis. Style somewhat pyramidal. Seed solitary in each cell. Radicle ascending. Smooth herbs or sub-shrubs with round stems, and ovate or oblong, serrated, or somewhat entire cauline leaves, and many-flowered elongated racemes, with bractless filiform pedicels and yellow flowers.

1 C. PERUVIA'NUS (D. C. syst. 2. p. 419.) stems suffrutescent; leaves ovate, serrated; style shorter than the pedicel of the fruit. ♄. G. Native of Guayaquil, and Chili. Biscutélla, Lam. dict. 3. p. 620. D. C. diss. bisc. no. 6. t. 4. Leaves 2 or 3 inches long.

Peruvian Cremolobus. Pl. 1 or 2 feet.

2 C. SUFFRUTICO'SUS (D. C. syst. 2. p. 419.) stem suffrutescent; leaves oval-oblong, serrated; style longer than the pedicel of the fruit. ♄. G. Native of Peru. Biscutélla suffruticòsa, D. C. diss. bisc. no. 7. t. 5. Easily distinguished from *C. Chilénsis* in the stems being frutescent, not herbaceous, as well as in having broader, more serrated leaves.

Shrubby Cremolobus. Pl. 1 to 2 feet.

3 C. CHILE'NSIS (D. C. syst. 2. p. 419.) stem herbaceous; leaves oblong, almost entire; style somewhat longer than the pedicel of the fruit. ⊙. H. Native of Chili. Biscutélla, Lag. in litt. D. C. diss. bisc. no. 8. t. 6. Biscutélla cuneàta, Lag. in hort. madr. 1815. p. 20.

Chili Cremolobus. Fl. Ju. July. Clt. 1820. Pl. ½ foot.

Cult. The genus *Cremólobus* is scarcely worth cultivating except in botanic gardens. A mixture of loam, peat, and sand, will suit the two green-house species well. The hardy annual kind should be sown in front of a south wall in the common earth, about the middle of April. The only way of increasing this genus is by seeds; however young cuttings of the two green-house species, when procured, may be tried under a hand-glass.

XLV. MENONVI'LLEA (in honour of N. C. Thiery de Menonville, who introduced into Spanish America the *Cactus Coccinellifera* as well as the *Cochineal.*) D. C. syst. 2. p. 419. prod. 1. p. 184.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle somewhat stipitate, biscutate (f. 46. *n.*). Cells with the margin expanded into a wing, and as if it were finishing the parallel disk (f. 46. *n.*). An herb with a thick root and radical linear leaves, and terminal racemes with bractless pedicels and dark or sad-coloured flowers.

1 M. LINEARIS (D. C. syst. 2. p. 420.) ♃. G. Native of Peru and Chili. Radical leaves linear, entire, but sometimes, although rarely, grossly and irregularly toothed towards the top. Petals linear, twice the length of the calyx. Deless. icon. sel. 2. p. 56. The colours of the flowers are nearly like those of *Hésperis tristis.*

Linear-leaved Menonvillea. Fl. May, July. Pl. 1 foot.

Cult. *Menonvíllea* is not worth cultivating except in botanical gardens. A mixture of sand, loam, and peat will answer it well; and it should be increased by seeds.

Tribe IV.

EUCLIDIE'Æ (plants agreeing in important characters with *Euclídium,*) or PLEURORHI'ZEÆ (See Sub-Order I.) NUCAMENTA'CEÆ (from *nucamentum*, a catkin; pods.) D. C. syst. 2. p. 420. prod. 1. p. 184. Silicle indehiscent, with concave, indistinct (f. 46. *d.*), or not separating valves, and sometimes with hardly any trace of a dissepiment. Seeds oval, very few. Cotyledons flat, accumbent, parallel with the dissepiment (f. 45. *g. h.*) when there is any.

XLVI. EUCLI'DIUM (from *ευ*, *eu*, well, and *κλειδοω*, *kleidoo*, to shut up; because of the well-closed seed-pods.) R. Br. in hort. kew. ed. 2. vol. 4. p. 74. D. C. syst. 2. p. 421. prod. 1. p. 184.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle ovate, drupaceous, with manifest sutures. Style subulate (f. 46. *d.*). Cells 1-seeded. Annual herbs with slender roots and round branched stems, and pinnate-lobed, stalked, radical leaves, and oblong or linear, entire or toothed stem ones, with somewhat spicate erect racemes, which are opposite the leaves, and small white bractless flowers.

1 E. SYRÌACUM (R. Br. in hort. kew. ed. 2. vol. 4. p. 74.) pods scabrous; style subulate, permanent (f. 46. *d.*); cauline leaves stalked, lanceolate. ⊙. H. Native of Syria, Tauria, Iberia, Podolia, Moldavia, Transylvania, and Austria, among rubbish, and in sandy cultivated places. Bùnias Syrìaca, Gært. fruct. 2. p. 290. t. 141. f. 11. Anastática Syrìaca, Lin. spec. 895. Jacq. austr. 1. p. 7. t. 6. Anastática Hierochuntìna, Crantz. aust. p. 7. not of Lin. Myàgrum rostràtum, Scop. carn. ed. 2. no. 797. t. 35. Myàgrum Syrìacum, Lam. dict. 1. p. 570. no. 9. Myàgrum rígidum, Pall. itin. 3. append. no. 104. t. L. l. f. 1. and t. M. m. f. 2. ed. gall. append. no. 343. t. 65. and t. 105. f. 1. Hierochóntis Carniólica, Medik, in Ust. ann. new. 2. p. 40. Bùnias rostràta, Lher. cak. diss. ined. p. 9. Sòria Syrìaca, Desv. jour. bot. 3. p. 168, exclusive of synonyms of Lam. Flowers distant, disposed in spikes.

Syrian Euclidium. Fl. Jul. Aug. Clt. 1778. Pl. ½ to 1 foot.

2 E. TATA'RICUM (D. C. syst. 2. p. 422.) pods smooth; style becoming deciduous; cauline leaves linear, sessile. ⊙. H. Native on hills about the Jaik, and in the deserts about Astracan. Vélla tenuíssima, Pall. itin. ed. gall. append. no. 344. t. 77. f. 2. Bùnias Tatárica, Willd. spec. 3. p. 413. Myàgrum Tatáricum, Poir. suppl. 2. p. 48. Flowers small, scarcely pedicelled.

Tartarian Euclidium. Fl. April, June. Clt. 1820. Pl. ¼ foot.

Cult. This genus is not worth cultivating except in botanic

gardens. The species only require to be sown in the open border. A light sandy soil suits them best.

XLVII. OCHTHO'DIUM (from *οχθωδης, ochthodes*, warted; in allusion to the warted surface of the pods.) D. C. syst. 2. p. 423. prod. 1. p. 184.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicles coriaceous, somewhat globose. Stigma sessile. Dissepiment thick. Cells 1-seeded. Cotyledons flat, oval-oblong, obliquely accumbent. An annual, erect, branched herb, with pinnatifidly-lyrate lower leaves, somewhat similar to those of *Rape*, and rather entire upper ones; with the stems pilose at base, and with elongated racemes, bractless short pedicels and yellow flowers.

1 O. Ægyptìacum D. C. syst. 2. p. 423.) ⊙. H. Native of Egypt and Syria. Bùnias Ægyptìaca, Lin. syst. nat. 3. p. 231. Gmel. in Act. petrop. 12. p. 509. t. 9. Jacq. hort. vind. t. 145. Myàgrum verrucòsum, Lam. dict. 1. p. 570. no. 11. Rapístrum Ægyptìacum, R. Br. in hort. kew. ed. 2. vol. 4. p. 74. Euclídium Ægyptìacum, Andrz. cruc. ined. Radical leaves stalked. Petals larger than the calyx.

Egyptian Ochthodium, Fl. Ju. July. Clt. 1787. Pl. ¾ foot.

Cult. This plant is scarcely worth cultivating except in botanic gardens. It only requires to be sown in the open border. A light sandy soil suits it best.

XLVIII. PUGIO'NUM (from *pugio*, a dagger; resemblance in point of pods.) Gært. fruct. 2. p. 291. t. 142. D. C. syst. 2. p. 424. prod. 1. p. 185.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle coriaceous, transversely oval, echinated on all sides, and ending in a long, dagger-like point, 1-celled and 1-seeded from abortion. A smooth herb with linear, entire, half stem-clasping leaves, and loose racemes of small white flowers.

1 P. cornu'tum (Gært. l. c.) ⊙.? H. Native of the Levant and Siberia, in the desert of the Kalmucks, at the Caspian Sea. Búnias cornùta, Lin. spec. 935. Myàgrum cornùtum, Lam. dict. 1. p. 571. Flowers hardly larger than those of *Eróphila vérna.* Petals narrow, quite entire. Leaves linear, somewhat tongue-shaped, glaucous.

Horned-podded Pugionum. Fl. Jun. July. Pl. ½ foot?

Cult. This plant is hardly worth cultivating except in botanic gardens. It only requires to be sown in the open border, in a warm dry situation. A light sandy soil will suit it best.

Tribe V.

ANASTATI'CEÆ (plants agreeing in important characters with *Anastática.*) or PLEURORHI'ZEÆ (See Sub-Order I.) SEPTULA'TÆ (a dim. of *septum*, a dissepiment; dissepiment small.) D. C. syst. 2. p. 424. prod. 1. p. 185. Silicle opening longitudinally (f. 46. *f.*), with concave valves, bearing internally transverse, horizontal dissepiments, which separate the seeds (f. 46. *f.*). Seeds not margined. Cotyledons flat, accumbent, parallel with the dissepiment (f. 45. *g. h.*).

XLIX. ANASTA'TICA (from *αναστασις, anastasis*, resurrection; plant recovering its original form however dry it may be, on immersion in water.) Gært. fruct. 2. p. 286. t. 141. D. C. syst. 2. p. 425. prod. 1. p. 185.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle ventricose (f. 46. *e.*), with the valves bearing each an appendage on the outside at the end (f. 46. *f.*). Petals obovate. A small annual herb, branching from the neck. The younger plants are herbaceous, villous and expanded. The adult plants become hard, ligneous, and smooth, with the branches crowded lattice-wise into a globular form. The leaves are oblong, and entire, the racemes are short, and placed opposite the leaves. The flowers are small, sessile, and white.

1 A. Hierochunti'na (Lin. spec. 895.). ⊙. F. Native of arid wastes in Egypt near Caira; Palestine, and Barbary; on roofs of houses and among rubbish in Syria; of Arabia in sandy deserts on the coasts of the Red Sea. Jacq. vind. t. 58. Lam. ill. t. 555. Schkuhr. handb. 2. no. 1760. t. 179. good figure. A. littoràlis, Sal. prod. 266.—Lob. icon. 2. p. 203.—Moris. hist. 2. p. 228. sect. 5. t. 25. f. 2 & 3.—Weinm. phyt. t. 914. f. c. Stem much branched, somewhat dichotomous, dwarf. Leaves oblong or ovate, narrowed at the base into the petiole. Pods somewhat pubescent. The leaves fall off from the plant after flowering, and the branches and branchlets become dry, hard, and ligneous, and rise upwards and bend inwards at their points, hence they become contracted into a globular form, and in this state the plant is easily withdrawn from the sand by the wind and blown from the desert into the sea, and as soon as it comes in contact with the water, the branches gradually expand, and the pods open and relieve the seeds, which are thrown again upon the shore by the tide, and scattered with the sand through the desert by the wind. If this plant is taken up before it is withered, and kept entire in a dry room, it may be long preserved, and after being many years in this situation, if the root is placed in a glass of water a few hours, the buds of flowers will swell, open, and appear as if newly taken out of the ground, or it will recover its original form in the same manner if wholly immersed in water. The common people in Palestine believe that if you put this plant in water at the time when a woman first experiences the pains of child-birth, it will expand at the precise moment when the infant is brought into the world. The plant is called *Kaf Maryam* or *Mary's Flower* in Palestine, because it is supposed that the flower opened at the instant our Saviour was born.

Rose of Jericho or *Holy Rose.* Fl. Ju. Jul. Clt. 1597. Pl. ½ ft.

Cult. The seeds of this plant rarely ripen in England, unless they be sown in a hot-bed early in the spring, and the plants afterwards put into pots which should be plunged again into the hot-bed to bring them forward; for although the seeds will come up in the open ground, where the soil is dry, yet the plants rarely rise to any size, nor do they perfect seeds unless the summer is very hot and dry; but if the plants are kept in a frame, giving them free air in warm weather, they will flower in June and ripen their seeds in September. This plant is only grown in the gardens of the curious for its singularity.

L. MORE'TTIA (in honour. of J. L. Moretti, an Italian botanist). D. C. syst. 2. p. 426. prod. 1. p. 185.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle ovate, with the valves not appendiculated at the end. Petals linear. A branched herb, beset with fascicled-stellate grey hairs. Leaves obovate, cuneated at their base, and grossly toothed at their apices. Racemes erect, with short pedicels in the axillæ of the bracteas, which are leafy and longer than the flowers.

1 M. philæa'na (D. C. syst. 2. p. 426.) ♄. ⊙.? H. Native of Nubia near the island of Phila. Sinàpis Philæàna, Delil. fl. ægyp. p. 99. t. 33. f. 3. Tucnéxia Philæàna, D. C. syst. 2. p. 426. Stems suffruticose at the base, about the thickness of a pigeon's quill. Leaves alternate, almost sessile. Flowers distant, small, probably white. Pods oblong, velvety on the outside.

Phila Morettia. Fl. June, July. Pl. ½ to ¾ foot.

Cult. As this plant possesses no beauty, it is only worth cultivating in botanical gardens. It should be sown in a dry warm situation in the open border, where the seeds will ripen.

Tribe VI.

CAKILI'NEÆ (plants agreeing with *Cakìle* in important characters) or PLEURORHI'ZEÆ (see Suborder I.) LOMENTA'CEÆ (*lomentum*, a loment; pods). D. C. syst. 2. p. 427. prod. 1. p. 185. Silique or silicle separating across into 1-2-celled, 1-2-seeded joints (f. 46. *o.*). Seeds not margined. Cotyledons flat, accumbent, parallel with the dissepiment, when there is any (f. 45. *g. h.* f. 46. *c.*).

LI. CAKI'LE (an Arabic word employed by Serapio for this plant). Tourn. inst. 49. t. 483. Gært. fruct. 2. p. 287. t. 141. D. C. syst. 2. p. 427. prod. 1. p. 185.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique 2-jointed, compressed (f. 46. *o.*), upper joint ensiform or ovate. Seeds solitary in the cells, the one in the upper cell erect, the one in the lower cell pendulous. Smooth, fleshy, glaucous, annual, branched herbs. Leaves pinnatifid or toothed. Racemes opposite the leaves and terminal, erect; pedicels filiform, bractless. Flowers white or purplish.

1 C. mari'tima (Scop. fl. carn. no. 844.) upper joint of pod ensiform; leaves pinnate-parted. ⊙. H. Native of Europe in the sand along the sea-coast from Sweden and Lapland to Gibraltar; on both shores of the Mediterranean and along the Euxine Sea in Tauria. In Britain frequent on the sea-coast. Lam. ill. t. 554. f. 1. Hook. fl. lond. t. 160. Bùnias Cakìle, Lin. spec. 936. Smith engl. bot. t. 231. Fl. dan. 1168. Isàtis pinnàta, Forsk. ægyp. descr. 121. Rapístrum marítimum, Berg. phyt. 3. p. 173. icon. Cakìle Serapiònis, Gært. fruct. 2. p. 287. t. 141. f. 12. Cakìle pinnatífida, Stok. bot. mat. med. 3. p. 485. A spreading plant with pinnate-parted leaves, with the lobes somewhat distant, entire or toothed. Flowers of a bright lilac-colour, disposed in dense corymbs. This plant is asserted to be an active cathartic by Anquillara.

Sea-Rocket. Fl. June, Sept. Britain. Pl. 1 foot.

2 C. Ægypti'aca (Willd. spec. 3. p. 417.) upper joint of pod ensiform; leaves entire or dentately-sinuated, blunt. ⊙. H. Native of Italy, Barbary, and Egypt in the sand along the sea-coast. Horn. fl. dan. t. 1583. Isàtis Ægyptìaca, Forsk. ægyp. descr. 121. but not of Lin. Bùnias Cakìle, var. β, Vahl. symb. 2. p. 78. Rapístrum Cakìle of Berg. phyt. 3. p. 163. icon. Cakìle marítima, var. α., Desf. atl. 2. p. 77. Cakìle Serapiònis, var. β, Lher. cak. diss. ined. p. 5. Cakìle latifòlia, Poir. suppl. 2. p. 88. Cakìle sinuatifòlia, Stok. bot. mat. med. 3. p. 485. Cakìle marítima β, sinuatifòlia, D. C. syst. 2. p. 429. Leaves broader than those of *Cakìle marítima*, never pinnate-cut. Flowers lilac, in dense corymbs.

Egyptian Sea-Rocket. Fl. June, Sept. Clt.? Pl. 1 foot.

3 C. America'na (Nut. gen. amer. 2. p. 62.) upper joint of pod ovate, acute. ⊙. H. Native of North America along the sea-coast and on the shores of Lake St. Laurent, also on the shores of the Caribbee Islands, particularly St. Domingo. Bùnias edéntula, Bigel. fl. bost. no. 43. Cakìle Ægyptìaca, Tuss. ant. 1. f. 17. Leaves oblong, blunt, sometimes cuneated, sometimes almost linear, bluntish. A spreading herb with lilac flowers.

Var. β, *Cubénsis* (H. B. et Kth. nov. gen. & spec. amer. 5. p. 75.) leaves entire or scarcely sinuate-toothed, never pinnatifid. Flowers lilac, smaller than those of *C. marítima*.

American Sea-Rocket. Fl. June, Sept. Clt.? Pl. 1 foot.

4 C. æqua'lis (Lher. herb. & diss. cak. ined. p. 1. with a figure) upper joint of pod somewhat 4-sided at the base and furnished with a long beak at the end (f. 46. *o.*). ⊙. H. Native of Martinique on the sea-shore. Stems diffuse, straggling. Leaves light green, entire and cuneated at the base, toothed at the top. Flowers white. Pod linear, almost uniform. Seeds oblong, of a bay colour. Deless. icon. sel. 2. t. 57.

Equal-podded Sea-Rocket. Fl. June, Sept. Pl. 1½ foot.

Cult. These are rather pretty annual plants, and only require to be sown in open ground early in the spring or autumn, and treated as other hardy annuals.

LII. CORDYLOCA'RPUS (from κορδυλος, *cordylos*, a club, and καρπος, *carpos*, a fruit; upper joint of pod). Desf. atl. 2. p. 79. t. 152. D. C. syst. 2. p. 434. prod. 1. p. 186. but not of Smith.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique roundish, torose, with many joints, upper joint thick, globose, echinated. Seeds all pendulous. An annual, branched, erect, smooth (or rarely furnished with scattered hairs) herb. Lower leaves somewhat lyrate, upper ones lanceolate. Racemes erect; pedicels bractless, filiform, thicker than the fruct, not elongated. Flowers cream-coloured.

1 C. murica'tus (Desf. atl. 2. p. 79. t. 152.) ⊙. H. Native of Algiers on the edges of fields near Mayenne. Lower leaves ovate-oblong, running along the petiole. Petals pale-yellow. Pods spreading.

Muricated-podded Cordylocarpus. Fl. June, July. Clt. 1823. Pl. ½ foot.

Cult. Hardly worth cultivating, except in botanic gardens. It only requires to be sown in the open ground, and treated as other hardy annuals.

LIII. CHORI'SPORA (from χωρις, *choris*, separately; σπορα, *spora*, a seed; in allusion to each seed being inclosed separately in the pod.) D. C. syst. 2. p. 435. prod. 1. p. 186.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique roundish, with many equal joints. Seeds all pendulous. Annual branched, slender, smooth, or puberulous herbs. Leaves either pinnatifid or nearly entire. Racemes opposite the leaves, erect, elongated; pedicels filiform, bractless. Flowers violaceous or yellow.

§ 1. *Purpurascéntes. Flowers purplish; petals entire.*

1 C. tene'lla (D. C. syst. 2. p. 435.) pods and leaves smooth, upper leaves lanceolate, toothed, lower ones pinnatifid. ⊙. H. Native of Tauria among rubbish; in the Caspian desert; in craggy and nitrous places; plentiful on the banks of the river Volga; also in the Kirghisian steppe, and at Tanais, even to the Ukraine. Ráphanus tenéllus, Pall. itin. 3. app. no. 105. t. L. f. 3. ed. gall. 8vo. app. no. 356. t. 102. f. 2. Schkuhr. handb. 2. no. 1913. t. 202. Ráphanus Tatáricus, Falck. itin. 2. p. 218. no. 786. t. 13. Hésperis láxa, Lam. dict. 3. p. 325? Chorispérmum tenéllum, R. Br. in hort. kew. ed. 2. vol. 4. p. 129. Flowers purple. Stems erect.

Var. β, *taraxicifòlia* (D. C. syst. l. c.) ⊙. H. Cheiránthus taraxicifòlius, Schrank. mem. soc. Ratisb. 1818. p. 164. Leaves smooth or somewhat pubescent on the under surface, some of them are furnished at the tops of the lobes with ciliæ. Flowers purple, almost like those of *Malcòmia marítima* or *A'rabis vérna*.

Var. γ, *arcuàta* (D. C. syst. l. c.) ⊙. H. Hésperis arcuàta, Nocca. pl. sel. hort. Ticin. 1. p. 3. t. 2. Ráphanus arcuàtus, Willd. spec. 3. p. 562. Chorispérmum arcuàtum, Andrz. cruc. ined. Flower purple. Pods arched, not straight, as in the two preceding varieties.

Pliant Chorispora. Fl. June, July. Clt. 1780. Pl. ¼ to ½ foot.

2 C. stri'cta (D. C. syst. 2. p. 436.) pods, stem, and lower leaves hispid; pods erect; leaves linear, toothed. ⊙. H. Native at Lake Inderskoe in the Kirghisian steppe, but rare. Ráphanus stríctus, Fisch. in litt. Bieb. suppl. fl. taur. p. 452. Herb erect. Flowers like those of preceding plant. Seeds oval, compressed, girded by a membranous wing, by which it differs from the rest of the genus.

Straight-podded Chorispora. Fl. May, July. Clt. 1820. Pl. ¼ to ½ foot.

§ 2. *Flaviflorœ. Flowers yellow; petals emarginate.*

3 C. Sibi'rica (D. C. syst. 2. p. 437.) pods and leaves smoothish; leaves all sinuately-pinnatifid. ⊙. H. Native of Siberia and Altaia on the banks of the river Oby; frequent in the upper region of the river Yenissei. Ráphanus Sibíricus, Lin. spec. 925. Murr. comm. gœtt. 1775. p. 48. t. 11. Chorispérmum Sibíricum, Andrz. cruc. ined. Flowers yellow, nearly the size of those of *Bùnias erucàgo*. Seeds oval, brown, compressed. Plant very variable in height.

Siberian Chorispora. Fl. June, July. Clt. 1822. Pl. from 1 inch to 2 feet.

4 C. Ibe'rica (D. C. syst. 2. p. 437.) pods hairy, hardly longer than the style; leaves linear, runcinately-toothed. ⊙. H. Native of Iberia in stony places about Chinalug, in eastern Caucasus. Ráphanus Ibéricus, Bieb. fl. taur. 2. p. 129. suppl. p. 451. Chorispérmum Ibéricum, Andrz. cruc. ined. Flowers like those of *Chorispora tenélla*, but yellow. The whole plant possesses a very powerful nauseous odour, when bruised.

Iberian Chorispora. Fl. Ju. July. Clt. 1822. Pl. ¼ to ½ foot.

Cult. This is a genus of rather pretty annual plants; they only require to be sown in the open ground, and treated as other hardy annuals.

Sub-order II. NOTORHI'ZEÆ (from *νωτος, notos*, the back, and *ριζα, rhiza*, a root; radicle at the back of the cotyledons, f. 45. j. e.) D. C. syst. 2. p. 438. prod. 1. p. 186. Cotyledons flat, incumbent (f. 45. *i.*). Radicle dorsal (f. 45. *i. e.*). Seeds not margined.

Tribe VII.

SISY'MBREÆ (plants agreeing with *Sisymbrium* in many important characters,) or NOTORHI'ZEÆ (see Sub-order II.) SILIQUO'SÆ, (siliqua a long pod; pods long.) Silique 2-celled, opening longitudinally (f. 46. *p.*) with concave (f. 46. *p.*) or keeled valves. Seeds ovate or oblong, not margined. Cotyledons flat, incumbent, contrary to the dissepiment (f. 45. *i.*). A very distinct tribe from the characters of the seeds, but with the habit nearly of *Arabídeæ*.

LIV. MALCO'MIA (named after a William Malcolm, F.L.S. a celebrated cultivator.) R. Br. in hort. kew. ed. 2. vol. 4. p. 121. D. C. syst. 2. p. 438. prod. 1. p. 186.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique roundish. Stigma simple, much pointed. Annual or perennial herbs, usually scabrous or velvety from stellate hairs. Leaves oblong or oval entire, toothed or sinuately-pinnatifid; pedicels bractless, disposed in racemes. Flowers either purplish or white, sometimes very small, never becoming double in gardens.

1 M. Africa'na (R. Br. in hort. kew. ed. 2. vol. 4. p. 121.) stem branched, diffuse; leaves lanceolate, somewhat toothed, beset with 2 or 4-parted hairs; pedicels shorter than the permanent calyx; pods scabrous. ⊙. H. Native of vineyards and sandy places in the north of Africa, Sicily, Spain, south of France, Iberia about Gandsha. Hésperis Africàna, Lin. spec. 928. Hésperis diffùsa, Lam. fl. fran. 2. p. 504. Cheiránthus scàber, Mœnch. meth. 254. Hésperis híspida, Roth. cat. bot. 1. p. 78.—Buxb. cent. 4. p. 26. t. 44.—Bocc. sic. 77. t. 42. f. 1. Flowers small, purplish. Seeds oblong-ovate, rufous.

African Malcomia. Fl. May, July. Clt. 1747. Pl. ¼ to ½ ft.

2 M. taraxacifo'lia (D. C. syst. 2. p. 439.) stem erect, simple; leaves oblong, deeply-toothed; hairs 3-parted; pedicels shorter than the deciduous calyx; pods smooth, somewhat 4-sided. ⊙. H. Native —? Cheiránthus taraxacifòlius, Balb. cat. hort. taur. app. 1814. p. 10. Flowers small, purplish.

Dandelion-leaved Malcomia. Fl. Ju. Jul. Clt. 1795. Pl. ¼ to ½ ft.

3 M. la'xa (D. C. syst. 2. p. 440.) stem branched, somewhat pilose at the base; leaves ovate, acute, angularly-toothed, and are as well as the pods smooth; pedicels shorter than the calyx. ⊙. H. Native of Siberia. Hésperis láxa, Lam. dict. 3. p. 325. Flowers small, purplish. Seeds small, oblong-ovate, rufous.

Loose-branched Malcomia. Fl. Ju. Jul. Clt. 1818. Pl. 1 to 2 ft.

4 M. Chi'a (D. C. syst. 2. p. 440.) stem erect, branched; hairs 2-parted, appressed; leaves obovate, entire; pedicels length of the calyx; pods roundish, pubescent; style very short. ⊙. H. Native of the island of Chio in rocky places, and probably of Crete, Spain, and Russia. Cheiránthus Chìus, Lin. spec. 924. Cheiránthus subulàtus, Mœnch. meth. 254. Hésperis Chìa, Lam. dict. 3. p. 324.—Herm. parad. 194. t. 61.—Dill. elth. 180. t. 147. f. 178. Flowers purplish, one-half smaller than those of *Malcòmia marítima*. Plant downy.

Chio, or Dwarf-branching Malcomia. Fl. May, July. Clt. 1732. Pl. ½ to 1 foot.

5 M. mari'tima (R. Br. in hort. kew. ed. 2. vol. 4. p. 121.) stems erect, branched; leaves elliptical, blunt, entire, narrowed at the base; hairs appressed, 2 or 4-parted; pedicels somewhat shorter than the calyx; pods pubescent, furnished with a long acumen at the apex. ⊙. H. Native of the south of Europe in the sand by the sea-shore, particularly France, in the fields of Narbonne, Balearic islands, Mauritania, Greece, and all the islands in the Archipelago. Cheiránthus marítimus, Lin. amœn. 4. p. 280. spec. 924. Curt. bot. mag. t. 166. Cheiránthus littòreus, All. ped. 1. p. 273. but not of Lin. Hésperis marítima, Lam. dict. 3. p. 324.—Barrel. icon. t. 1127.—Mor. oxon. 2. p. 235. sect. 3. t. 7. f. 6. Flowers pale, violet or lilac. Pods roundish. An elegant diffuse plant, commonly cultivated in gardens as a border annual. Plant downy.

Sea-side Malcomia, or Branching Annual Stock. Fl. May, July. Clt. 1713. Pl. ½ to 1 foot.

6 M. incrassa'ta (D. C. syst. 2. p. 441.) stems many, somewhat diffuse; leaves oval, stalked, upper ones oblong; hairs appressed, 2-parted; pedicels shorter than the calyx, which becomes thickened after flowering; pods pubescent. ⊙. H. Native of the islands in the Archipelago on rocks by the sea-side; particularly in Scio and Tenedos. Deless. icon. sel. 2. t. 59. Flowers purplish, a little larger, as well as the pods being two or three times thicker, than those of *Malcòmia marítima*. An elegant downy plant.

Thickened-pedicelled Malcomia. Fl. June, July. Clt. 1820. Pl. 2 inches to ½ foot.

7 M. arena'ria (D. C. syst. 2. p. 442.) stem erect, branched; leaves lanceolate, acute, lower ones toothed, sessile; hairs stellate; pedicels very short; pods torulose, subulate. ⊙. H. Native of Mauritania in the sand on the sea-shore near Arzeau. Hésperis arenària, Desf. atl. 2. p. 91. t. 162. Flowers violaceous, about the size of those of *Malcòmia marítima*. An elegant downy plant.

Sand Malcomia. Fl. June, July. Clt. 1804. Pl. ¼ to ½ foot.

8 M. parvifl'ora (D. C. syst. 2. p. 442.) stem erect, branched; leaves oblong, blunt, almost entire; hairs soft, starry; pedicels at last the length of calyx; pods pubescent. ⊙. H. Native in sand on the sea-shore in Corsica, France, Provence, Italy about Pisa, also in Calabria, &c. &c. Cheiránthus làcerus, Gouan. ill. p. 44? Hésperis parviflòra, D. C. fl. fr. ed. 3. vol. 4. p. 654. icon. gall. rar. p. 11. t. 35. Hésperis pùmila, Poir. suppl. 3. p. 194. Flowers small, lilac. Plant downy.

Small-flowered Malcomia. Fl. Ju. Jul. Clt. 1816. Pl. ¼ to ½ ft.

9 M. lyra'ta (D. C. syst. 2. p. 443.) stem erect, branched; lower leaves lyrate, blunt, stalked; hairs appressed, 2-parted; pedicels length of calyx; pods pubescent. ⊙. H. Native of the island of Cyprus. Cheiránthus lyràtus, Smith. fl. græc. t. 635. Flowers purplish like those of *Malcòmia parviflòra*.

Lyrate-headed Malcomia. Fl. June, July. Clt. 1820. Pl. ½ ft.

10 M. litto'rea (R. Br. in hort. kew. ed. 2. vol. 4. p. 121.) stems many, erect; leaves lanceolate-linear, almost entire, hoary with short down; pedicels length of calyx; pods hoary. ♂. H. Native of France, Italy, Spain, Portugal, and along the Mediterranean sea, in the sand. Cheiránthus littòreus, Lin. spec. 925. Hésperis littòrea, Lam. dict. 3. p. 322.—Clus. hist. 1. p. 298. f. 2.—Park. theatr. 623. icon.—Lob. icon. t. 331. f. 1. Flowers whitish-yellow. Seeds ovate, not margined.

Sea-shore Malcomia. Fl. Ju. Nov. Clt.1683. Pl. ½ to 1 foot.

11 M. alyssoi'des (D. C. syst. 2. p. 444.) stem erect, branched; leaves imbricate, obovate, blunt, almost entire; hairs stellate, grey, soft; pedicels very short. ♃. H. Native of Portugal. Hésperis alyssoìdes, Pers. ench. 2. p. 203.—Barrel. icon. t. 804. Flowers purplish, somewhat sessile, 2 or 3 together at the tops of the branches. Stem somewhat woody at the base. Plant tomentose.

Alyssum-like Malcomia. Fl. May, July. Pl. ¼ to ½ foot.

12 M. pa'tula (D. C. syst. 2. p. 444.) stem branched, diffuse; leaves linear, nearly entire; hairs short, stellate, grey, soft; pedicels hardly shorter than the calyx; pods slender, pubescent, terminated by the long style. ♃. H. Native of Spain in Castile and elsewhere, especially about Madrid, in sandy places. Hésperis arenària, Lag. cat. hort. madr. 1814. p. 20. not of Desf. Flowers purplish, like those of *M. littòrea*. Plant tomentose.

Spreading Malcomia. Fl. May, June. Pl. ¼ to ¾ foot.

13 M. Broussone'tii (D. C. syst. 2. p. 445.) stem erect, branched; leaves oblong, blunt, sinuated; hairs stellate, grey, soft; pedicels shorter than the calyx; pods pubescent, torulose, terminated by the long style. ⊙. H. Native about Mogodor in fields. Deless. icon. sel. 2. t. 60. Cheiránthus trílobus, Lin. spec. 925? Flowers like those of *Malcòmia littòrea*, but rather larger. Plant tomentose.

Broussonet's Malcomia. Pl. ¼ to ½ foot.

14 M. la'cera (D. C. syst. 2. p. 445.) stem branched, diffuse; leaves oblong, bluntly-pinnatifid; hairs stellate, somewhat downy; pedicels at last equal in length with the calyx; pods pubescent, torulose, terminated by the long style. ⊙. H. Native of Portugal, Spain, Morocco, and the Levant, in the sand on the sea-shore. Cheiránthus làcerus, Lin. spec. 926. but not of his syst. veg. Hésperis làcera, Lam. dict. 3. p. 322? Hésperis pinnatífida, Desf. cor. Tourn. p. 63. t. 47. Ann. mus. 11. p. 377. t. 34. but not of Michx. M. tríloba, Spreng. syst. 2. p. 899. Flowers the colour and size of those of *M. littòrea*.

Jagged-lobed Malcomia. Fl. June, July. Clt. 1718. Pl. ½ ft.

† *A species not sufficiently known.*

15 M. ero'sa (D. C. syst. 2. p. 446.) ⊙. H. Native of Portugal and Spain, in sandy places. Hésperis eròsa, Lag. cat. hort. madr. 1814. p. 20. Pubescent. Leaves linear-oblong, sinuately-pinnatifid. Pods stalked, rather filiform, acute.

Gnawn Malcomia. Fl. June, July. Clt. 1818. Pl. ¼ to ½ foot.

Cult. The greater part of the species of *Malcòmia* being hardy annuals, they only require to be sown in the open ground, and if sown at various times throughout the summer and autumn, a succession of flowering plants may be kept up, until the frost kills them. *Malcòmia Chìa, marítima, incrassàta*, and *arenària*, are the most elegant of the annual kinds; the other annual kinds possess no beauty, and therefore are only fit to be preserved in botanic gardens. The perennial species, *Malcòmia, alyssoìdes*, and *pátula*, can only be increased by seeds; they are very well adapted for ornamenting rock-work. All the species of this genus thrive best in a light dry sandy soil.

LV. HE'SPERIS (from ἑσπερος, *hesperos*, the evening; because the flowers of most of the species are sweet-scented in the evening.) Lin. gen. no. 817. D. C. syst. 2. p. 446. prod. 1. p. 188.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique roundish or somewhat 4-sided (f. 46. *p.*). Stigmas 2, erect, connivent. Calyx bisaccate at the base. Seeds oblong, somewhat triquetrous (f. 46. *p.*). Stamens all toothless. Annual, biennial or perennial herbs, with fibrous roots, and erect or diffuse stems. Leaves ovate-lanceolate or oblong, toothed or lyrately-runcinate. The plants are for the most part furnished with simple or branched lymphatic hairs, and others are furnished, especially at the top, with glandular hairs, and from thence as if it were bituminous or clammy. Racemes terminal, bractless, erect; pedicels filiform, never thickening after flowering. Flowers white or purplish, often party-coloured, usually sweet-scented, particularly towards evening.

Sect. I. Hesperi'dium (for derivation see genus; the flowers of the plants belonging to this section smell only in the evening and at night, never throughout the day time.) D. C. syst. 2. p. 447. prod. 1. p. 188. Limb of petals linear. Pods 2-edged, with keeled valves, and a spongy dissepiment. Flowers of a dark dreary colour, sweet-scented in the evening and throughout the night.

1 H. alyssifo'lia (D. C. syst. 2. p. 447.) pedicels villous, hardly longer than the very villous calyx; petals oblong, waved; leaves oblong, quite entire, velvety with stellate down.—Native of Persia. Deless. icon. sel. 2. t. 61. Petals oblong-linear, acute, of a dark dirty-purplish colour.

Alyssum-leaved Rocket. Pl. ½ to 1 foot.

2 H. tri'stis (Lin. spec. 927.) pedicels very long, spreading, rigid, equalling the pod in breadth; pods 2-edged, thickened on the margin; petals oblong, oblique. ♂. H. Native of Austria, Hungary, Transylvania, Tauria, south of Russia, and of Naples, about the edges of fields and woods. Curt. bot. mag. t. 730. Jacq. vind. 118. Jacq. austr. 2. p. 1. t. 102. Schkuhr. handb. 2. no. 1847. t. 184. Cheiránthus lanceolàtus, Willd. spec. 3. p. 515. Stems much branched at the top, sometimes almost smooth, sometimes more or less hispid, with long spreading hairs. Radical leaves stalked, upper ones sessile, ovate, acute, entire or grossly toothed, smooth or pubescent, 2 or 4 inches long; hairs short, somewhat glandular. Flowers of a dirty white or cream-colour, brownish-red or dirty dark-purple; smelling in the night.

Sad-coloured-flowered or Night-smelling Rocket. Fl. April, June. Clt. 1629. Pl. 1 to 2 feet.

3 H. fra'grans (Fisch. in litt. Sweet, brit. fl. gard. t. 61.) pedicels villous, much shorter than the very villous calyx; petals oblong, wavy, lower leaves stalked, lanceolate, runcinate, bluntish, upper leaves almost sessile, ovate, acuminated, coarsely-toothed at the base. ♂. H. Native of Siberia? Flower purplish.

Fragrant Rocket. Fl. June, July. Clt. 1821. Pl. ¾ foot.

Sect. II. Deilo'sma (from δειλη, *deile*, the day, and οσμη, *osme*, a smell. The flowers of the plants belonging to this section smell in the day time as well as at night.) D. C. syst. 2. p. 448. prod. 1. p. 188. Limb of petals obovate. Siliques roundish, or somewhat 4-edged, with a membranous dissepiment. Funicle winged.

4 H. lacinia'ta (All. ped. no. 985. t. 82. f. 1.) pedicels shorter than the calyx; petals obovate-oblong; leaves obovate, deeply-toothed; stem hispid. ♂. H. Native on rocks exposed to the sun in Piedmont, Provence, and the south of Dauphiny. Hésperis hieracifòlia, Vill. dauph. 3. p. 317. Cheiránthus laciniàtus, Poir. suppl. 2. p. 780. Leaves covered with glandular pubescence. Flowers sometimes purplish or lilac, and sometimes yellowish.

Jagged-leaved Rocket or Dame's Violet. Fl. May, June. Clt. 1816. Pl. 1½ foot.

5 H. villo'sa (D. C. syst. 2. p. 449.) pedicels shorter than the calyx; petals obovate-oblong; leaves oblong, pointed, deeply-toothed, and are villous as well as the simple stem. ♂ ? H. Native of Apulia or Puglia. Cheiránthus villòsus, Spreng. in litt. Very nearly allied to *Hésperis laciniàta*, but the hairs of the stems are not glandular, nor the down on the leaves. Flowers purplish or lilac.

Villous-Rocket or Dame's Violet. Fl. May, June. Pl. 1½ ft.

6 H. runcina'ta (Waldst. et Kit. pl. rar. hung. 2. p. 220. t. 200.) pedicels longer than the calyx; petals obovate, somewhat mucronate; leaves pubescent, lower ones lyrately-runcinate, upper ones lanceolate, acuminated; stem erect, panicled at the top. ♂. H. Native of Hungary in coppices. The whole plant is covered with somewhat clammy short hairs. With the habit of *H. matronàlis*.

Var. β H. bituminòsa (Savi. hort. Pis. ann. 1808. perhaps also of Willd. enum. suppl. 45.) Deilósma suavèolens, Andrz. cruc. ined. Plant clammy. Pods somewhat incurved. Flowers of both varieties from white to purple or lilac, about the size of those of *Hésperis matronàlis*.

Runcinate-leaved Rocket or Dame's Violet. Fl. May, July. Clt. 1804. Pl. 1 to 2 or 3 feet.

7 H. matrona'lis (Lam. dict. 3. p. 321. ill. t. 564. f. 1.) pedicels length of calyx; petals obovate; pods erect, torose, smooth, not thickened at the edge; leaves ovate-lanceolate, toothed. ♃. H. Native of coppices and hedges nearly throughout the whole of Europe.

Var. α, horténsis (D. C. syst. 2. p. 450.) stem firm, straight; flowers usually sweet-scented; petals frequently emarginate and mucronate; leaves ovate-lanceolate, never cordate. ♃. H. Hésperis matronàlis, Lin. spec. 927.—Mor. hist. 2. p. 251. sect. 3. t. 10. f. 1.—Lob. icon. t. 323. f. 2. The ladies of Germany have pots of this plant placed in their apartments, whence it has obtained the name of *Dames' Violet*. Parkinson calls the plants *Queen's Gilloflowers*, and Gerarde *Damask Violets*.

1 *albiflòra* (D. C. l. l. c.) flowers single, white.—Tab. kraut. p. 692. f. 1.—Dalech. lugd. 804. f. 1. Besl. eyst. vern. ord. 8. t. 3. f. 2.

2 *albo-plena* (D. C. l. c.). Flowers double white.

3 *purpùrea* (D. C. l. c.) flowers single, purple.—Tab. kraut. p. 692. f. 2. Dalech. lugd. 804. f. 2. Besl. eyst. vern. ord. 8. t. 3. f. 3.—Weinm. phyt. t. 572. f. b.

4 *purpùreo-plena* (D. C. l. c.) flowers double purple.—Weinm. phyt. t. 572. f. c.

5 *variegàta* (D. C. l. c.) flowers double, variegated with white and purple.—Munt. phyt. cur. t. 186.

6 *foliiflòra* (D. C. l. c. p. 451.) flowers double, green. Moris. oxon. 2. p. 251. no. 2. Weinm. phyt. t. 572. f. a.

Var. β, sylvéstris (D. C. syst. 2. p. 451.) habit much more loose than var. α. Lower leaves only at the base more or less cordate, and often coarsely toothed; flowers always purplish or lilac, rarely sweet-scented; limb of petals blunt. Hésperis inodòra, Lin. spec. 927. Jacq. aust. t. 347. Fl. dan. t. 934. Smith engl. bot. t. 731. Hésperis sylvéstris, Crantz. austr. p. 32. Hésperis Sibírica, Vill. dauph. 3. p. 316. Native of many places in the north of Europe. In Britain in hilly pastures near rivulets but rare.

Var. γ, H. Sibírica (Lin. spec. 927.) leaves narrower, oblong-lanceolate, acuminated. Hésperis obtùsa, Mœnch. suppl. 86. Native of Tauria and Siberia. Flowers purple or lilac.

This is a very variable plant, as may be seen from its numerous varieties.

Common Rocket or *Dames'* Violet. Fl. May, Aug. Clt. var. α and its varieties since 1597. β. Native of Britain. γ. Since 1800. Pl. 1 to 4 feet.

8 H. heterophy'lla (Tenore, fl. nap. prod. p. 39.) pedicels length of calyx; petals obovate; stem branched, diffuse, and is as well as leaves covered with short pubescence; leaves ovate-lanceolate, toothed. ♃. H. Native of Naples in shady fields and in woods. Habit of plant very like the branched diffuse varieties of *Hésperis matronàlis*. Flowers purplish or lilac.

Variable-leaved Rocket. Fl. May, Jul. Clt. 1825. Pl. 2 to 3 ft.

9 H. ela'ta (Horn. hort. hafn. suppl. 74.) petals blunt, very entire and notched at the top; leaves lanceolate-acuminated, remotely toothed; stems simple, erect. ♂. H. Native?

Tall Rocket or Dames' Violet. Fl. May, Aug. Clt. 1824. Pl. 3 or 5 feet.

10 H. grandiflo'ra (Sims, bot. mag. t. 2683.) pedicels longer than the calyx; petals obovate; racemes many-flowered, crowded; radical leaves oblong-ovate, obtuse, cauline ones lanceolate, sessile. ♂. H. Native of Siberia? or Hungary? Flowers dark lilac. Stem simple.

Great-flowered Dames' Violet or Rocket. Fl. June, July. Clt. 1817. Pl. 3 feet.

11 H. Stevenia'na (D. C. syst. 2. p. 452.) pedicels longer than the calyx; petals obovate; stem and pods hispid; radical leaves stalked, runcinate, upper ones ovate-lanceolate, deeply-toothed. ♃. ♂. H. Native of the south of Tauria. Claws of petals longer than the calyx. Flowers purplish. This plant is very like *Hésperis matronàlis, β sylvéstris*.

Steven's Rocket or Dames' Violet. Fl. May, July. Pl. 1 ft.

12 H. apri'ca (Poir. suppl. 3. p. 194.) pedicels beset with glandular pili, length of calyx; petals obovate; leaves oblong, blunt, and are as well as the simple stems hispid. ♃. H. Native of exposed fields in Siberia and Dauria. Cheiránthus aprìcus, Steph. in Willd. spec. 3. p. 518. Hésperis Cheiránthus, Pers. ench. 2. p. 203. Cheiránthus hírtus, Schlecht. ex Stev. obs. in herb. Willd.—Deless. icon. sel. 2. t. 62. Flowers purple or lilac, size of those of *H. matronàlis*.

Var. β, dentàta; leaves grossly toothed. Perhaps a proper species.

Exposed Rocket or Dames' Violet. Fl. May, June. Clt. 1821. Pl. ¼ to ½ foot.

13 H. bicuspida'ta (Poir. suppl. 3. p. 194.) pedicels length of calyx; petals blunt; leaves lanceolate, acute, rather toothed, and are as well as simple stem covered with stellate grey down. ♃.? ♂.? H. Native of Armenia. Cheiránthus bicuspidàtus, Willd. spec. 3. p. 519. Flowers purple or lilac?

Var. β, Cappadòcica (plant a little smaller, and with the pods and flowers more spreading than in the species.) ♂. ♃. H. Native of Cappadocia. Both plants are rather woody at the base.

Two-pointed-podded-Rocket. Fl. May, June. Pl. 1½ foot.

14 H. ramosi'ssima (Desf. atl. 2. p. 91. t. 161.) pedicels rather shorter than the calyx; petals elliptical-oblong; pods scabrous, torulose; leaves oblong, velvety; stem much branched. ⊙. H. Native of Algiers near Arzeau, in the sand on the shore, and in Egypt, near the Saqqarah Pyramids, also in Galatia. Flowers small, violet or lilac.

Much-branched Rocket. Fl. Ju. Jul. Clt. 1819. Pl. ½ to ¾ ft.

15 H. pygmæ'a (Dilil. ill. fl. ægyp. p. 19. no. 596.) pedicels longer than the calyx; petals elliptical; pods very slender, smooth; leaves sinuated, scabrous from stellate hairs; stem branched. ⊙. H. Native of Syria and near Alexandria. Flowers small, purplish.

Pygmy Rocket. Fl. May, Jul. Clt. 1828. Pl. 2 or 3 inches.

16 H. pulche'lla (D. C. syst. 2. p. 455.) pedicels longer than the calyx; petals obovate; leaves almost all radical, bluntly pinnatifid, smoothish; scapes numerous, scarcely longer than the leaves. ⊙. H. Native of the Levant (Greece or Syria).

With the habit of *Malcòmia làcera*, but with the stigma of *Hésperis*. Flowers rose-coloured, a little smaller than those of *Malcòmia marítima*, otherwise similar.

Pretty Rocket. Fl. May, July. Pl. 2 or 3 inches.

17 H. CRENULA'TA (D. C. syst. 2. p. 456.) pedicels shorter than the calyx; petals obovate; leaves oblong, smooth; blunt, crenated; stem branched. ⊙. H. Native in the Levant between Aleppo and Mossul. Flowers purplish; claws of petals length of calyx.

Crenulated-leaved Rocket. Pl. $\frac{1}{4}$ foot.

† *Species, the generic characters of which are very doubtful.*

18 H.? PINNATI'FIDA (Mich. fl. bor. amer. 2. p. 31.) pedicels at last longer than the calyx; petals obovate; lower leaves pinnatifidly-lyrate, upper ones unequally serrated. ♃. H. Native of humid woods in Tennessee and Kentucky, and not by any means rare along the banks of the river Ohio below Le Tarts rapids. Herb very smooth. Stems simple or branched, angularly-sulcate. Flowers small, pale-purple or lilac.

Pinnatifid-leaved Rocket. Fl. Ju. Jul. Pl. 2 or 3 ft. high.

19 H.? PE'NDULA (D. C. syst. 2. p. 457.) pedicels deflexed, hispid; leaves covered with bristles, lower ones somewhat lyrate, upper ones ovate, toothed; stem branched, hispid. ⊙? ♃? H. Native of Syria. Flowers unknown.

Pendulous-flowered Rocket. Pl. $1\frac{1}{2}$ foot.

20 H.? ANGUSTIFO'LIA (D. C. syst. 2. p. 457.) pedicels very short, thick; petals oblong; leaves linear, grossly-toothed, smoothish; stem hispid. ⊙. H. Native of Syria between Aleppo and Mossul. Flowers small, white. Stem branched, erect.

Narrow-leaved Rocket. Pl. 3 or 4 inches.

† *Species not sufficiently known.*

21 H. NI'VEA (Baumg. fl. trans. 2. p. 278.). ♃. H. Native of Transylvania on mountains. Herb very hairy, branched. Leaves alternate, stalked, upper ones sessile, stem-clasping, ovate-lanceolate, toothed. Flowers stalked, corymbosely-racemose, white, sweet-scented; petals oval, blunt, entire.

Snow Rocket. Fl. Aug. Sept. Pl. 1 foot.

22 H. REPA'NDA (Lag. cat. hort. madr. 1814. p. 20.) ♃. H. Native of Spain on the Mariana mountains. Stems erect, somewhat angular. Spikes of flowers terminal, elongated. Calyx dark-purple. Corolla violet. Petals oblong, truncate, longer than the calyx. The whole plant is covered with short, white, reflexed, appressed hairs.

Repand-leaved Rocket. Fl. Ju. Jul. Clt. 1820. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

Cult. The perennial species of this genus thrive best in a light rich soil, and they require to be frequently transplanted and divided, otherwise they will not long exist, particularly the double varieties of *Hésperis matronàlis*; the best time to do this, is after they are done flowering and are again beginning to spring afresh from the root. The biennial and annual sorts do well in any common garden-soil, requiring the same treatment as other hardy annuals and biennials.

LVI. ANDREO'SKIA (in honour of Antonio Andrzejowski, a Russian botanist, who has studied cruciferous plants particularly). D. C. prod. 1. p. 190. Sisýmbrium, section VII. Hesperidópsis, D. C. syst. 2. p. 484. Dontostèmon, Andrz. in litt.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique sessile, roundish, 2-celled, with somewhat concave valves and a membranous dissepiment. Style short, slender. Seeds ovate, disposed in one row. Cotyledons flattish, incumbent. Herbs villose, glandular. Leaves linear, entire, or pectinately pinnate-lobed. Flowers white, or purplish. Calyx almost erect, deciduous, equal at the base. Petals unguiculate, entire. Two lateral stamens free, not toothed; the four larger ones are sometimes joined by pairs, and sometimes furnished with a tooth on the inside, at the top.

1 A. INTEGRIFO'LIA (D. C. prod. 1. p. 190.) leaves linear, quite entire; branches and pedicels glandular and pilose as well as the pods. ⊙. H. Native in sandy places of mountains in Siberia from Yenissei to the regions beyond the Baical, and at the river Lena. In arid fields of Dauria near Tschita and about Doroninsk. Sisýmbrium integrifòlium, Lin. spec. 922. Hésperis glandulòsa, Pers. ench. 2. p. 203. Cheiránthus muricàtus, Weinm. cat. hort. Dorp. 1810. p. 41. Flowers white, varying to purple.

Entire-leaved Andreoskia. Fl. Ju. Jul. Clt. 1819. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

2 A. EGLANDULO'SA (D. C. prod. 1. p. 190.) leaves linear, quite entire, and are as well as stem villous, without glands. ⊙. H. Native of Siberia. Sisýmbrium eglandulòsum. D. C. syst. 2. p. 485. Sisýmbrium Sieversiànum, Redowsk. from Fisch. in litt. Differing from *A. integrifòlia* in the stems and leaves being villous, but not glandular. Flowers always white.

Glandless Andreoskia. Fl. Ju. Jul. Clt. 1824. Pl. $\frac{1}{2}$ foot.

3 A. PECTINA'TA (D. C. prod. 1. p. 190.) leaves pectinately-pinnate-lobed; lobes linear, acute, and are as well as stem pilose, interspersed with muricated glands. ♂. H. Sisýmbrium pectinàtum, D. C. syst. 2. p. 485. Flowers the same as those of *A. integrifòlia* but a little larger. H. punctàta and pilòsa, Poir.

Var. α, *pinnàta*; stem dwarf; flowers white. Hésperis pinnàta, Pers. ench. 2. p. 203. Native of Siberia on the Lake Baical near Penolsk.

Var. β, *pectinàta*; stem elongated; flowers white. Sisýmbrium pectinàtum, Fisch. in litt. Native of Dauria at the river Ighitou and about Doroninsk.

Var. γ, *pinnatífida*; stems elongated; flowers reddish. Cheiránthus pinnatífidus, Willd. spec. 3. p. 523. Native of Siberia.

Pectinated-leaved Andreoskia. Fl. May, July. Clt. 1825. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

Cult. These plants are scarcely worth cultivating, except in botanic gardens. They only require to be sown in the open ground, and treated like other hardy annuals. A light sandy soil will suit them best.

LVII. SISY'MBRIUM (Σισυμβριον was the Greek name of some aquatic plant. It appears to have had an agreeable smell. Ovid advises that Venus should be propitiated with garlands of myrtle, of roses, and of sisymbrium. It is, however, more probably derived from σισιβος, *sisibos*, a fringe, as some of the species have fringed roots). All. ped. 1. p. 274. D. C. syst. 2. p. 458. prod. 1. p. 190. Sisýmbrium, spec. Lin. Juss. &c.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique roundish, sessile upon the torus. Stigmas 2, somewhat distinct, or connate into a head. Calyx equal at the base. Seeds ovate or oblong. Cotyledons flat, incumbent, sometimes oblique. Stamens not toothed. Herbs annual or perennial, rarely suffrutescent. Leaves very variable on the same plant. Racemes elongated after flowering; pedicels bractless or furnished with a leafy bractea, filiform erect. Flowers yellow or white.

Sect. I. Vela'rum (*velar*, the Arabic name of the cress). D. C. syst. 2. p. 459. prod. 1. p. 191. Silique awl-shaped, broadest at the base, ending in the very short style at the top, appressed to the axis, standing on very short pedicels, which thicken after flowering. Flowers yellow.

1 S. OFFICINA'RUM (Scop. carn. ed. 2. no. 824.) leaves runcinate, pilose; stem pilose; pods subulate, pressed to the rachis. ⊙. H. Native throughout the whole of Europe in waste land and among rubbish, very common along the sides of walls, hedges, and roads; plentiful in Britain, also in the north of

Africa. Erýsimum officinàle, Lin. spec. 922. Fl. dan. t. 560. Curt. fl. lond. 5. t. 50. Woodv. med. bot. 4. p. 14. t. 244. Smith engl. bot. t. 725. Schkuhr. handb. 2. no. 1833. t. 183. Klùtia officinàlis, Andrz. cruc. ined. Flowers small, yellow. Pods erect and pressed to the stem.

Var. β, leiocárpum (D. C. syst. 460.) pods smooth. Native of South Carolina and Teneriffe. Erýsimum officinàle, Pursh, fl. amer. sept. 2. p. 436.

This plant is warm and acrid to the taste, and when cultivated is used as a spring pot-herb. Birds are fond of the seed. Sheep and goats eat the herb. Cows, horses, and swine refuse it. It is celebrated in medicine even to this day, and is used as a diuretic, and as an expectorant in asthma, chronical coughs, and hoarseness, and hence its name in France *Herbe au chantre*. Rondeletius informs us that the last-mentioned complaint, occasioned by loud speaking, was cured by the juice of this plant in three days. Other testimonies of its good effects in this disorder are recorded by writers on the Materia Medica, of whom we may mention Dr. Cullen, who for this purpose recommends the juice to be mixed with an equal quantity of honey or sugar. In this way also it is said to be an useful remedy in ulcerations of the mouth and throat. The seeds being most pungent, should be preferred to its leaves. This, as well as some other cruciferous plants, are apt to come up among the ashes where charcoal has been made, or where there has been any considerable fire. In Germany the plant is called *der Hederich, Wegesenf, Wildersenf, falcher Wassersenf, das Gelbe Eisenkraut, Kreuzkraut*, &c. In Danish *Vild senep, Veysenep*. In Swedish *Vaggkrassa*. In France, *Le velar, La Tortelle*. In Italian *Erisamo*. In Spanish *Jaramago, hierba de san Alberto, Irion*. In Russia *Corczyca polna, Pszonak ziele*.

Common Hedge Mustard or *Officinal* Sisymbrium. Fl. May, July. Britain. Pl. 1 or 2 feet.

2 S. corniculà'tum (Cav. præl. no. 3. from Lag. in litt.) lower leaves sinuately-runcinate; upper ones lanceolate, toothed; pods compressed, subulate, somewhat pilose; pedicels thick, very short. ⊙. H. Native of Spain about Madrid at a place called La Real casa del Campo. Flowers small, yellow. Pods straight, erect, appressed to the axis. A very distinct species, but not sufficiently known, and perhaps will form a separate genus.

Horned-podded Hedge-Mustard. Fl. June, July. Clt. 1818. Pl. 1 to 1½ foot.

Sect. II. Norta (meaning unknown). D. C. syst. 2. p. 461. prod. 1. p. 191. Silique round. Calyx spreading. Seeds oblong. Flowers yellow. Racemes bractless.

3 S. stricti'ssimum (Lin. spec. 922.) leaves lanceolate, stalked, toothed, pubescent. ♃. H. Native throughout middle Europe, France, Italy, Germany, &c. &c. on mountains in rugged places. Jacq. vind. 122. fl. austr. t. 194. Flowers intensely yellow. Pods 2 inches long, straight, very smooth. Stems erect, branching at the top.

Very-straight-podded Hedge-Mustard. Fl. June, Aug. Clt. 1658. Pl. 3 to 5 feet.

4 S. ju'nceum (Bieb. fl. taur. 2. p. 114.) leaves smooth, glaucous, lower ones stalked, runcinately-pinnatifid, upper ones linear-lanceolate, entire. ♃. H. Native of dry meadows in Hungary, of salt meadows in Transylvania, Tauria at the river Volga about Zarizyn and the colony Sarepta; in the deserts of Siberia between Oby and Irtish, and between Barnaoul and Zmeof. Pods strictly erect, parallel with the axis. Flowers yellow.

Var. α, Brássica polymórpha (Murr. comm. goett. 1776. p. 35. t. 6.? Waldst. et Kit. hung. 1. p. 93. t. 90.)

Var. β, Cheiránthus júnceus (Waldst. et Kit. hung. 3. p. 259. t. 234. Erýsimum júnceum. Willd. spec. 3. p. 513. Sisýmbrium júnceum, Bieb. l. c.)

Rush-like Hedge-Mustard. Fl. May, Jul. Clt. 1804. Pl. 1 foot.

Sect. III. Psilo'stylum (from ψιλος, *psilos*, slender, and στυλος, *stylos*, a column or style; styles long and slender). D. C. syst. 2. p. 463. prod. 1. p. 191. Siliques round, terminated by the long slender style. Calyx closed. Seeds oblong. Flowers yellow.

5 S. exacoi'des (D. C. syst. 2. p. 463.) leaves oval-oblong, almost entire, smooth, glaucous; racemes 1 or 4-flowered. ⊙. H. Native of Lebanon at a place called Zaale. Mathìola exacoìdes, Spreng. syst. 2. p. 899. Petals yellow, elliptical, small; claws of petals linear, longer than the calyx. Deless. icon. sel. 2. t. 63. Perhaps a proper genus. Habit of plant referable to *Exácum pusíllum*.

Exacum-like Hedge-Mustard. Fl. May, June. Pl. 1 to 2 in.

Sect. IV. Irio (from ερυω, *eruo*, to cure; see *Erýsimum*.) D. C. syst. 2. p. 463. prod. 1. p. 191. Siliques round. Seeds ovate, somewhat triquetrous. Flowers yellow. Pedicels bractless.

§. 1. *Leaves toothed or entire.*

6 S. Hispa'nicum (Jacq. coll. 1. p. 69. icon. rar. 1. t. 124.) leaves lanceolate, toothed, sessile, smooth; stems branched, divaricate; pods erect, roundish, smooth. ♂. H. Native of Spain, and perhaps of the south of France. Pods erect, appressed. A very smooth rather glaucous herb, with branches rising from the axillæ of the leaves.

Spanish Hedge-Mustard. Fl. May, June. Clt. 1818. Pl. 1½ ft.

7 S. linea're (D. C. syst. 2. p. 464.) leaves linear, entire, rather hispid; stem hispid; pods smooth, very slender. Native of Siberia. Cheiránthus leptophýllus, Willd. herb. from Stev. obs. ined.—Gmel. sib. 3. p. 271. t. 62. Flowers small. Pods slender, smooth. Seeds small. Stems branched at the top.

Linear-leaved Sisýmbrium. Fl. Ju. July. Clt. 1820. Pl. 1 ft.

8 S. pu'milum (Steph. in. Willd. spec. 3. p. 507.) radical leaves sinuately-toothed, cauline ones sagittate, stem-clasping, toothed; pods rough from branched hairs. ⊙. H. Native of the north of Persia, in the plains adjacent to Caucasus, about Kitzjar, and about Astracan; also in Iberia. Flowers small. Plant very variable in height.

Dwarf Hedge-Mustard. Fl. April, May. Clt. 1818. Pl. from ¼ to 1½ foot.

9 S. Palla'sii (Spreng. syst. 2. p. 901.) stem branched; leaves all linear, quite entire, smooth, lower ones blunt, superior ones narrowed, acute; calyx pilose; siliques slender, erectly-spreading. ⊙.? H. Native of Siberia. S. tenuifòlium, Pall. in Willd. herb.

Pallas's Hedge-Mustard. Pl. 1 foot.

10 S. Kahi'kir (Mart. ex. Spreng. syst. 2. p. 901.) stem slender, ascending, naked above; leaves oblong-linear, acute, tapering to the base, almost quite entire, hairy; racemiferous branches elongated; calyx hispid; petals linear; siliques slender, elongated, smooth. ⊙.? H. Native of?

Kahikir Hedge-Mustard. Pl. ½ foot.

11 S. atrovi'rens (Horn. ex. Spreng. syst. 2. p. 901.) stem diffusely branched; leaves oblong, toothletted, auricled at the base, smooth; petioles dilated at the base and stem-clasping; siliques somewhat arched, smooth. ⊙.? H. Native of China.

Dark-green Hedge-Mustard. Pl. 1 foot.

12 S. nitídulum (Lag. ex. Spreng. syst. 2. p. 901.) stem ascending, rather simple, smooth, and leafless above; leaves oblong, deeply toothed, stalked; racemes loose; siliques on long stalks, smooth. ⊙.? H. Native of Spain.

Glistering Hedge-Mustard. Pl. 1 foot.

§. 2. *Leaves pinnately-lobed; lobes entire or toothed.*

13 S. OBTUSA'NGULUM (Schleich. cat. p. 48.) leaves pinnate-parted; lobes oval-oblong, blunt, sinuately-toothed, recesses roundish; stems hispid at the base with reflexed hairs. ⊙. H. Native of Spain, France, Switzerland, and Piedmont, in sandy cultivated land, and among rubbish. Sinàpis nasturtiifòlia, Lam. dict. 4. p. 346. Sisýmbrium jacobeæfòlium, Berg. phyton. icon. Sinàpis Hispánica, Lam. fl. fr. 4. p. 645. Erysimum obtusángulum, Clairv. herb. val. 219. Erùca inodòra, Bauh. hist. 2. p. 862. f. 3. Chabr. sciagr. 276. f. 6. Moris. oxon. 2. p. 229. sect. 3. t. 5. f. 10. Plant very variable in size and hairiness. Stem hispid at the base, with reflexed bristles, the rest pubescent or smooth.

Var. β, S. lævigàtum (Willd. spec. 3. p. 500.) stems smoothish at base, not hispid.

Blunt-angled-leaved Sisýmbrium. Fl. May, Aug. Clt. 1823. Pl. 1 to 1½ foot.

14 S. ACUTA'NGULUM (D. C. fl. fr. 4. p. 670.) stem and leaves smooth; radical ones runcinate, cauline ones pinnatifid, lobes and recesses acute; calyx much spreading; pods rough. ♂. H. Native of Piedmont, and also of the hills in the south of France and Liguria; of the Pyrenees, Dauphiny, and Savoy, in rugged exposed places of valleys, and on low mountains. Erýsimum Pyrenàicum, Vill. prosp. p. 39. t. 21. f. 2. Sinàpis Pyrenàica, Lin. spec. 934. Jacq. vind. 3. p. 50. t. 97. All. ped. no. 960. t. 55. f. 1. Sisýmbrium Pyrenàicum, Vill. dauph. 3. p. 341. t. 38. not of Lin. S. sinapioìdes, R. Br. in hort. kew. ed. 1812. vol. 4. p. 112. Stems sometimes rather pubescent; sparingly branched at the top. Pods slender, an inch long.

Acute-angled-leaved Sisýmbrium. Fl. June, Aug. Clt. 1791. Pl. 1 to 1½ foot.

15 S. TARAXACIFÒLIUM (D.C. fl. fr. ed. 3. vol. 4. p. 670. icon. rar. gall. p. 11. t. 37.) leaves runcinately-pinnate-lobed; lobes and recesses acute; pods declinate, smooth; calyx erectish. ♂. H. Native of the Mountains of Provence. Flowers very small, but the petals are, nevertheless, longer than the calyx. Pods usually declinate.

Var. β, S. contórtum (Cav. from Willd. enum. 678.) differing from the species in the stems being much more hispid at the base; radical leaves hispid, and the cauline ones less strictly erect.

Var. γ, S. affìne (Willd. enum. suppl. p. 44.) calyx more spreading, with the leaves of *S. taraxacifòlium* and the calyx of *S. Austrìacum*.

Dandelion-leaved Sisýmbrium. Fl. May, June. Clt. 1817. Pl. 1 to 1½ foot.

16 S. AUSTRI'ACUM (Jacq. aust. 3. t. 262.) stem, pods, and leaves smooth; radical leaves runcinate, cauline ones cut or pinnatifid; lobes and recesses acute; calyx spreading. ♂. H. Native of rugged exposed places, and among rubbish on hills, and in valleys in the south of France, Piedmont, Switzerland and Germany. S. multisiliquòsum, Hoffm. germ. 4. p. 50. S. compréssum, Mœnch. suppl. 83.

Var. β, S. Eckartsbergénse (Willd. spec. 3. p. 502.) pods deflexed, spreading.

Var. γ, S. erysimifòlium (Pourr. act. toul. 3. p. 329.) pods erect.

Var. δ, S. Tillièri (Bell. ined. Willd. spec. 3. p. 497.) Perhaps differing from all, in the pods being longer, the radical leaves more crowded, and fewer stem ones.

Austrian Hedge-Mustard. Fl. May, July. Clt. 1799. Pl. 1½ to 2 feet.

17 S. I'RIO (Lin. amœn. 4. p. 270.) stem and leaves smooth; leaves runcinately-pinnatifid; lobes toothed, terminal lobe elongated; calyx and pods spreading, erect. ⊙. H. Native of waste grounds, or on banks and heaps of rubbish: plentiful in the neighbourhood of London. At Faulkbourn, Essex, and on the walls of Berwick-upon-Tweed. It covered the ground in the spring, after the great fire of London. Haller records the same tendency in Sisýmbrium Officinàrum (Smith). From Greece to Tauria, and from Spain and Sicily to Sweden. Jacq. aust. t. 322. Curt. fl. lond. 5. t. 48. Smith, engl. bot. t. 1631. S. glàbrum, Willd. enum. suppl. 44. S. erysimástrum *a*, Lam. fl. fr. 2. p. 521. Herb with the hot flavour of mustard.

Var. β, S. glàbrum (Jacq. hort. vind. from Schrad. spec, sicc.) lower leaves lyrate, with the terminal lobe rounder than in *var. a*.

Var. γ, S. pinnatífidum (Forsk. fl. arab. CXVI.) pods and pedicels one-half shorter than in the species. Native of Arabia Felix, in the mountains of Hadio.

Var. δ, S. Gállicum (Willd. enum, 678.) stem pubescent at the base.

Irio, London-Rocket, or Broad-leaved Hedge-Mustard. Fl. July, Aug. Britain. Pl. 1 to 2 feet.

18 S. NI'TIDUM (Zea. in Desf. cat. hort. paris, 1815. p. 153.) smooth; lower leaves lyrate, repand-toothed, upper ones hastate, angular, running into the foot-stalk at the base; pods sessile, filiform, spreading, rather incurved. ⊙. H. Native of Spain. S. Zeæ, Spreng. syst. 2. p. 904. Flowers small, yellow, not white. Seeds small, pale, oval, compressed. Very like *S. Irio*.

Shining Hedge-Mustard. Fl. Jul. Aug. Clt. 1818. Pl. ¾ to 1 ft.

19 S. SUBHASTA'TUM (Willd. enum. 679.) smooth, somewhat glaucous; radical leaves runcinate; cauline leaves lanceolate, hastate at the base from two acute auricles; pods spreading, rigid; pedicels thick, very short. ⊙. H. Native of the islands in the Archipelago. Brássica subhastàta, Willd. spec. 3. p. 550. Stems branched.

Subhastate-leaved Hedge-Mustard. Fl. April, Jul. Clt. 1817. Pl. 2 feet.

20 S. COLU'MNÆ (Jacq. aust. t. 323.) stem villous, somewhat hoary; leaves runcinate, pubescent; lobes toothed or entire, acute; pods erectish; calyx loose. ⊙. H. Native of waste ground, among rubbish, by way sides, and in gardens in the south of Europe, particularly in the south of France, Alsace, Germany, south of Italy, Transylvania, and Greece; also in Tauria and Armenia. Plant very variable in height.

Var. a, altíssimum (D. C. syst. 2. p. 469.) pods smooth, lobes of leaves almost entire. S. altíssimum, Lin. spec. 920. S. Walthèri, Crantz. aust. p. 91.—Buxb. cent. 5. p. 26. t. 51.

Var. β, leiocárpum (D. C. l. c.) pods smooth; lobes of leaves toothed. S. Colúmnæ, Jacq. aust. t. 323.—Column. ecphr. 1. p. 266. t. 268. S. villòsum, Mœnch. meth. 251. Native of France.

Var. γ, villosíssimum (D. C. l. c.) pods pubescent; stem and leaves very villous; lobes of leaves toothed. S. erysimástrum *β*, Lam. fl. fr. 2. p. 521. S. Loesèlii, Thuil. fl. paris, ed. 2. vol. 1. p. 335. Native of France, about Paris.

Var. δ, tenuisíliquum (D. C. l. c.) pods pubescent, very slender; stem and petioles pubescent; lobes of leaves almost entire. S. Colúmnæ, Bieb. fl. taur. 2. p. 114. *var. a*. Native of Tauria.

Var. ε, orientàle (D. C. l. c.) pods puberulous; the lower part of the herb is downy-villous, upper part smooth; lobes of leaves toothed. S. orientàle, Lin. amœn. 4. p. 322. spec. 921. S. Colúmnæ, *var. β*, Bieb. fl. taur. 2. p. 114. Native of Tauria.

Columna's Hedge-Mustard. Fl. May, Sept. Clt. 1796. Pl. from 1 to 3 feet.

21 S. PANNÓNICUM (Jacq. coll. 1. p. 70. icon. rar. 1. t. 123.) lower leaves runcinate, hispid, with toothed lobes; upper leaves pinnate, smooth, with very entire linear lobes; pods spreading. ⊙. H. Native in sterile and rugged fields and vine-yards. In the valleys of Anivie and Iserable in Switzerland. In Alsace, Hungary,

Tauria, Caucasus, and Transylvania, &c. This plant covered the ground in and about Moscow, after the great fire of 1812. (Goldb.) S. Sinàpios, Retz. obs. 3. p. 37. S. sinapístrum, Crantz. aust. p. 52. S. altíssimum, Pall. ined. taur. Habl. taur. p. 158. from Bieb. S. tenuifòlium, Gener, scep. el. no. 613. ? Flowers pale yellow, almost cream-coloured. Pods spreading. Stems solitary, sometimes beset with long hairs.

Hungarian Hedge-Mustard. Fl. May, June. Clt. 1787. Pl. 2 feet.

22 S. SEPTULA'TUM (D. C. syst. 2. p. 471.) leaves smooth, pinnate-parted; lobes linear, somewhat toothed in front, acute; pods somewhat spreading; dissepiment bearing impressed seeds in the cells. Native of Syria, about Aleppo. Perhaps a proper genus, allied to *Moréttia*. Stem whitish.

Septulate Hedge-Mustard. Pl. 1 to 2 feet.

23 S. CARTILAGÍNEUM (Pall. herb. from Fisch. in litt.) leaves scabrous, pinnate-parted; lobes linear, entire or somewhat toothed, thickish; upper leaves undivided. ♃. ? ♂. ? H. Native on cretaceous mountains in Tauria and Iberia. Pods elongate, narrowed at the base. Perhaps a species of *Diplotáxis* or *Stanlèya*. Stem erect, smooth, nearly simple.

Cartilaginous-leaved Hedge-Mustard. Fl. ? Pl. 1 foot.

24 S. LYRA'TUM (Burm. fl. cap. 17.) lower leaves pilose, lyrately-runcinate, lobes toothed; upper leaves oblong, smooth, toothed; pods somewhat spreading, smooth. ♃. G. Native of the Cape of Good Hope. S. sylvéstre, Burm. herb. Seeds ovate, compressed, small, rufous. Deless. icon. sel. 2. t. 64.

Lyrate-leaved Hedge-Mustard. Pl. 1½ foot.

25 S. BURCHE'LLII (D. C. syst. 2. p. 472.) leaves pinnate, pilose; lobes oblong, bluntly sinuate-angular; pods spreading, scabrous; pedicels short, thick; stem hispid with spreading hairs. ⊙. H. Native of the Cape of Good Hope, beyond the colonial territory, near the rivulet called Sack-river. Sisýmbrium, no. 1496, Burch. cat. geogr. pl. afr. austr. Pods nearly the same as those of *S. ásperum*. Stems sparingly branched.

Burchell's Hedge-Mustard. Pl. ½ to 1 foot.

26 S. GARIEPI'NUM (Burch. in D. C. syst. 2. p. 472.) leaves pinnate-parted; lobes toothed, acutish, scabrous with branched hairs; pods scabrous, erectish; stems covered with appressed down. ⊙. H. Native of the Cape beyond the Orange river, in open places, *var. β*, in groves, at the fountain called Kosi. Pods round, scabrous from small starry hairs. Stem branched.

Var. α, aprìcum; Burch. cat. geogr. no. 2080.

Var. β, nemoròsum; Burch. l. c. no. 2558.

Gariep Hedge-Mustard. Pl. 1½ foot.

27 S. A'SPERUM (Lin. spec. 920.) leaves smooth, pinnate-parted, with oblong, blunt, toothed, lobes; pedicels very short; pods scabrous, pointed with the short style. ♂. H. Native of the south of France, Dauphiny, &c. Spain, Portugal at the Tagus, in humid sandy or gravelly places.—J. Bauh. hist. 2. p. 858. f. 3. Chabr. sciagr. 275. f. 2. Stems many, from the same root.

Rough Hedge-Mustard. Fl. May, Aug. Clt. 1778. Pl. ¼ to ¾ ft.

§ 3. *Sòphiæ. Cauline leaves bipinnate, with cut pinnatifid or multifid lobes. Flowers small, yellow.*

28 S. SOPHI'A (Lin. spec. 922.) leaves bipinnate; lobes cut, oblong-linear; pedicels 4-times longer than the calyx; petals smaller than the calyx. ⊙. H. Native among rubbish, dry banks, waste ground, and dung-hills, very frequent in Britain and many other parts of Europe, from Portugal to Ingria, and from England to the Morea, also of Eschscholz Bay on the west-coast of America. Smith, engl. bot. t. 963. Mart. fl. rust. t. 57. S. parviflòrum, Lam. fl. fr. 2. p. 519. Sophìa Chirurgiòrum, Lob. icon. 738. f. 1. Blackw. herb. t. 440. et seriphium Weinm. phyton. t. 941. f. a. "The wisdom of surgeons," or Flix-weed, is so named, from the quality attributed to it of curing immoderate laxity of the bowels. According to Linnæus sheep and kine eat the plants, horses and goats are not fond of it, and swine refuse it. The force of gun-powder is said to be augmented by mixing a tenth part of the seeds with the other ingredients. The plant formerly was prescribed in dysenteries and hysterical cases, and the seed was given to destroy worms, but none of these virtues and qualities have been well ascertained. Flowers small, greenish-yellow, somewhat corymbose. Pods erect, linear, smooth. A large branching downy plant.

Fine-leaved Hedge Mustard or *Flix-weed*. Fl. July, Aug. Britain. Pl. 2 or 4 feet.

29 S. PE'RSICUM (Spreng. nov. prov. p. 39. no. 88.) leaves bipinnate; lobules linear; pedicels twice the length of the calyx; petals a little longer than the calyx. ⊙. H. Native of Persia. Flowers very small. Pods almost parallel with the axis. A slender branched plant, very like *S. Sophìa*. Stems pubescent with minute 3-parted hairs. Leaves smoothish.

Persian Flix-weed or Hedge-Mustard. Fl. July, Aug. Clt. 1819. Pl. 1 to 2 feet.

30 S. CANE'SCENS (Nutt. gen. amer. 2. p. 68.) leaves bipinnate, canescent; lobules blunt, toothed; petals equal in length with the calyx; pods clavate, shorter than the pedicels. ⊙. H. Native of North America, from Virginia to Georgia. S. Sophìa, Pursh. fl. amer. sept. 2. p. 440? Very like *S. Sophìa*, but much smaller. Petals obovate, pale yellow.

Grey Flix-weed or Hedge-Mustard. Fl. July, Aug. Clt. 1827. Pl. 1 to 1½ foot.

31 S. BRACHYCA'RPUM (Richards. in Frankl. narr. journ. p. 744.) leaves bipinnate; lobes blunt, entire or sparingly cut; petals larger than the calyx; pods linear, somewhat 4-sided, shorter than the pedicels. ⊙. H. Native of the Arctic region between 54° and 64° degrees of north latitude. Very like *S. Sophìa*, but the pods are one-half shorter than in that species.

Short-podded Flix-weed or Hedge-Mustard. Fl. June, July. Clt. 1827. Pl. ½ to 1 foot.

32 S. TRIPINNA'TUM (D. C. syst. 2. p. 475.) leaves tripinnate, velvety with starry down; lobules oblong-linear, somewhat toothed; pods slender, elongated, smooth. ⊙. H. Native of the Cape of Good Hope in dry places at the river Gaurits. Sinàpis? tripinnàta, Burch. cat. geogr. afr. aust. no. 1640. trav. 1. p. 318. An intermediate species between *S. Sophìa* and *S. millefòlium*.

Tripinnate-leaved Flix-weed or Hedge-Mustard. Pl. 2 feet.

33 S. MILLEFO'LIUM (Ait. hort. kew. ed. 1. vol. 2. p. 391.) leaves somewhat tripinnate, hoary; lobules blunt, small; stem suffruticose; petals larger than the calyx. ♄. G. Native of Teneriffe on rocks in the lower parts of the island. Sinăpis millefòlia, Jacq. icon. rar. t. 27. Flowers crowded-corymbous. A small branched shrub.

Millefoil-leaved Flix-weed or Hedge-Mustard. Fl. May, Sept. Shrub 1 to 1½ foot.

34 S. TANACETIFO'LIUM (Lin. spec. 916.) leaves pinnate; segments lanceolate, deeply-serrated, outer ones confluent; petals larger than the calyx; pods shorter than the pedicels. ♃. H. Native of exposed cold situations in Piedmont, Switzerland, Savoy, Dauphiny, Provence, and the Pyrenees. Erýsimum tanacetifòlium, Clairv. herb. val. 219.—Zann. hist. 86. t. 33.—Mor. hist. 2. p. 231. sect. 3. t. 6. f. 19. Stems erect, simple, corymbose at the top. Leaves crowded, soft, with short starry down. Seeds small.

Tansy-leaved Flix-weed or Hedge-Mustard. Fl. June, July. Clt. 1731. Pl. 1 foot.

35 S. MULTI'FIDUM (Willd. herb. ex Spreng. syst. 2. p. 904.) stem erect, smooth; lower leaves hairy, pinnate; leaflets lanceolate-linear, toothed, lower ones reflexed; leaflets of the upper

leaves filiform, smooth; flowers panicled; siliques very long, flexuous, slender, crowned by the thick stigma. ⊙ ? H. Native of?

Multifid-leaved Flix-weed or Hedge-Mustard. Pl. 2 feet.

36 S. MYRIOPHY'LLUM (H. B. et Kth. in D. C. syst. 2. p. 477.) leaves bipinnate; segments blunt; petals larger than the calyx; pods lanceolate.—Native of Quito at the bottom of Mount Cotopaxi among stones at the height of 4550 feet. Nastúrtium myriophýllum, Spreng. syst. 2. p. 883. A very branching plant. Flowers pedicelled. Seeds ovate, minute.

Myriad-leaved Flix-weed or Hedge-Mustard. Pl. 2 or 3 feet.

SECT. V. KIBE'RA (meaning unknown.) D. C. syst. 2. p. 477. prod. 1. p. 194. Pedicels bracteate at the base. Style short, thick, retuse. Flowers small, yellow or white, rarely purple.

37 PERUVIA'NUM (D. C. syst. 2. p. 477.) pedicels axillary, smooth, longer than the calyx; pods hispid, spreading; leaves oblong, deeply-serrated.—Native of Peru. An erect, herbaceous, branched plant. Bracteas violaceous, oblong-linear, toothed, longer than the pedicels, but sometimes they are abortive at the top of the raceme. Flowers small, probably yellow.

Peruvian Hedge-Mustard. Pl. 1 to 2 feet.

38 S. SUPI'NUM (Lin. spec. 917.) pedicels axillary, very short, solitary; pods erect, puberulous; leaves sinuately-pinnatifid; stems covered with reflexed pubescence. ⊙. H. Native of sandy humid places, and on the margins of fields along the banks of the Seine about Paris, in Switzerland, also in Spain, &c. A'rabis supìna, Lam. fl. fr. 2. p. 512.—Isnard in act. acad. paris, 1724. t. 18. Stems either decumbent or erect, simple or branched. Flowers small, white.

Supine Hedge-Mustard. Fl. Ju. Jul. Clt. 1788. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

39 S. RUNCINA'TUM (Lag. fl. hisp. ined. D. C. syst. 2. p. 478.) pedicels axillary, very short, solitary; pods incurved, and are as well as the stem smooth; leaves oblong, runcinately-toothed. ⊙. H. Native of Spain about Orcelis among rubbish. Stems branched from the base, diffuse. Floral leaves sessile. Flowers small, probably white.

Runcinate-leaved Hedge-Mustard. Fl. June, July. Pl. $\frac{1}{2}$ ft.

40 S. HIRSU'TUM (Lag. from Dufr. in litt. D. C. syst. 2. p. 478.) pedicels axillary, very short, solitary; bracteas oblong-linear, almost entire; pods erect, and are as well as stem pubescent. ⊙. H. Native of Spain about Madrid. Flowers small.

Hairy Hedge-Mustard. Fl. May, July. Clt. 1820. Pl. $\frac{1}{2}$ ft.

41 S. POLYCERA'TIUM (Lin. spec. 3. p. 918.) pedicels in threes, axillary, very short; pods erect, smooth; leaves sinuately-runcinate; lobes acute, toothed, lower ones largest. ⊙. H. Native throughout the south of Europe on humid walls and in fissures of rocks. It also grows about Bury in Suffolk, but it certainly has been introduced there. Jacq. vind. t. 79. S. corniculàtum, Lam. fl. fr. 2. p. 520. A fetid somewhat erect herb, with small yellow flowers, which are sessile in the axillæ of the leaves.

Many-podded Hedge-Mustard. Fl. June, July. Clt. 1633. Pl. $\frac{1}{2}$ to 1 foot.

42 S. RI'GIDUM (Bieb. suppl. p. 439.) pedicels very short, axillary or naked; pods and erect stems hispid; leaves smoothish, oblong, acutely runcinately-pectinate. ⊙. H. Native of the south of Tauria. Erýsimum polyceràtium, Pall. itin. 3. p. 741. app. no. 103. t. Mm. f. 1. ed. gall. 8vo. app. p. 346. no. 351. t. 107. Hésperis rígida, Steven from cat. hort. gor. 1808. p. 82. Bristles on stems long. Petals oblong-linear, white.

Rigid-bristled Hedge-Mustard. Fl. June, July. Clt. 1816. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

SECT. VI. ARABIDO'PSIS (from *Arabis* and *οψις, opsis*, resemblance; plants resembling the genus *A'rabis*.) D. C. syst. 2. p. 480. prod. 1. p. 195. Siliques linear, compressed. Stigma sessile, truncate. Flowers white, on very short bractless pedicels.

43 S. BURSIFO'LIUM (Lin. amœn. 4. p. 322.) leaves lyrately-pinnatifid, smooth; stem erect, leafy; pedicels thick, shorter than the calyx. ⊙. H. Native of Sicily. A'rabis bursifòlia, Lam. fl. fr. 2. p. 511.—Dill. elth. 179. t. 148. f. 177. Hésperis dentàta, Lin. spec. 928. Flowers small, white.

Shepherd's-purse-leaved Hedge-Mustard. Fl. June, July. Clt. 1733. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

44 S. PINNATI'FIDUM (D. C. fl. fr. 4. p. 667. syst. 2. p. 481.) radical leaves lyrate, cauline ones pinnate-parted; lobes linear, entire, terminal one largest; pedicels very slender, somewhat shorter than the calyx. ♃. H. Native of rocky and stony pastures in the mountains of Europe, particularly in the Pyrenees, the mountains of Auvergne, France, Switzerland, and Piedmont. Cardámine runcinàta, Pourr. act. tol. 3. p. 310. Sisýmbrium bursifòlium, Gouan. ill. p. 42. Sisýmbrium dentàtum, All. ped. no. 1001. t. 57. f. 3. A'rabis pinnatífida, Lam. dict. 1. p. 221. ill. t. 563. f. 3. A'rabis dentàta, Clairv. herb. val. 223. Root perennial, suffruticose, much divided at the neck.

Pinnatifid-leaved Hedge-Mustard. Fl. May, Aug. Clt. 1820. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

45 S. ERYSIMOI'DES (Desf. atl. 2. p. 84. t. 158.) leaves lyrately-pinnatifid, lobes unequally toothed, terminal one largest; pedicels very short; pods rectangular spreading. ⊙. H. Native of Tunis in sandy places near Kervan, and in the island of Teneriffe. About the divisions of fields in dry places of Spain in Murcia and Granada. S. rigídulum, Lag. gen. et spec. pl. p. 20. A smooth herb with very small white flowers.

Erysimum-like Hedge-Mustard. Fl. Jan. April. Clt. 1825. Pl. 1 to 2 feet.

46 S. RAMULO'SUM (Del. ægypt. ill. 19.) lower leaves pinnate-lobed; lobes few, acute, entire, with the terminal one oblong; cauline leaves oblong-linear, almost entire; pedicels longer than the calyx. ⊙. H. Native of Egypt, near Minyet and Beny-Soueyf. Flowers small, probably white.

Branched Hedge-Mustard. Fl. June, July. Pl. $\frac{1}{2}$ foot.

47 S. ? CINE'REUM (Desf. atl. 2. p. 83. t. 157.) leaves pubescent, somewhat fleshy, pinnate-parted; lobes linear-filiform, entire; pedicels longer than the calyx. ⊙. H. Native of Mauritania near Cafsa in sandy places. Petals pale violet, twice the length of the calyx. Seeds small, but their structure is unknown, and therefore the genus to which it should belong is doubtful. Perhaps a species of *Hésperis* or *A'rabis*.

Cinereous Hedge-Mustard. Fl. in winter. Pl. $\frac{1}{2}$ to 1 foot.

48 S. TORULÒSUM (Desf. atl. 2. p. 84. t. 159.) leaves oblong; radical ones somewhat pinnatifid, cauline ones coarsely toothed; pedicels very short; pods hispid, straight. ⊙. H. Native of Tunis, in waste land near Sbiba, and in the island of Cyprus. Smith fl. græc. t. 632. Stems 2 or 3. Flowers white.

Torulose Hedge-Mustard. Fl. Apr. May. Clt. 1824. Pl. $\frac{1}{2}$ ft.

49 S. CONTORTUPLICA'TUM (D. C. syst. 2. p. 483.) leaves oblong, radical ones pinnatifid, cauline ones toothed or entire; pedicels length of calyx; pods hispid, usually twisted. ⊙. H. Native of the desert of Cumana, also about Kitzliar and Astracan, especially in sandy places. Cheiránthus contortuplicàtus, Steph. in Willd, spec. 3. p. 521. Hésperis contortuplicàta, Bieb. fl. taur. 2. p. 124. Flowers from white to purplish.

Var. β, *rectisíliquum* (Fisch. in litt.) siliques straight, or hardly curved.

Twisted-folded-podded Hedge-Mustard. Fl. June, Aug. Clt. 1819. Pl. $\frac{1}{2}$ foot.

50 S. SETO'SUM (Ledeb. ex Spreng. syst. 2. p. 902.) stem simple, erect, smooth above; radical leaves lyrate, sharply-toothed, hispid, cauline ones few, small, lanceolate, sessile. ⊙. H. Native of the north of Persia. Flowers probably white.

Bristly Hedge-Mustard. Pl. 1 foot.

† *Species, the generic characters of which are doubtful.*

51 S.? A'LBUM (Pall. itin. 3. app. no. 102. t. U. ed gall. 8vo. vol. 8. app. no. 349. p. 344. t. 96.) leaves white from pubescence, pinnate-parted; lobes oblong, bluntish, and are as well as stem without glands. ♃. H. Native of Siberia at lake Baikal. Nastúrtium álbum, Spreng. syst. 2. p. 883. Root frutescent, with many stems rising from the same neck. Racemes when in flower corymbose, afterwards elongating. Flowers white. Stamens all toothless. Pods scarcely the length of pedicel. Perhaps a species of *Nastúrtium*, from its short pods, and it may probably form a separate genus with *Nastúrtium sagittàtum*.

White-flowered Hedge-Mustard. Fl. Ju. Jul. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

52 S.? NA'NUM (D. C. syst. 2. p. 486.) leaves oblong, sinuately-pinnatifid, velvety with starry down; pods torulose. ⊙. H. Native of eastern Siberia. Cheiránthus nànus, Merk. ined. Mathìola nàna, Spreng. syst. 2. p. 897. Two or three stems, rising from the same root. Petals oblong, purplish. Seeds not sufficiently known. Habit of *Malcòmia*.

Dwarf Hedge-Mustard. Fl. April, June. Pl. $\frac{1}{4}$ foot.

† *Species not sufficiently known.*

53 S. SINA'PIS (Burm. fl. ind. 140. exclusive of the synonyms of Barrelier, which are referable to A'rabis Thaliàna). Native of Java. Leaves sublyrate, toothed. Flowers very small, white. Stature and appearance of *Sinàpis arvénsis*.

Sinapis-like Hedge-Mustard. Fl. Ju. Jul. Pl. 1 to $1\frac{1}{2}$ ft.

54 S. PA'TENS (Mœnch. meth. 251.). ⊙. H. Native? Leaves runcinate, extreme segment sagittate; upper leaves lanceolate. Petals pale yellow, entire. Pods round, smooth, bifariously pilose. Perhaps a species of *Brássica*.

Spreading-branched Hedge-Mustard. Pl. 2 feet?

55 S. CAPE'NSE (Thunb. prod. 109.). Native of the Cape of Good Hope. Stem panicled, smooth. Pods linear, smooth.

Cape Hedge-Mustard. Pl. 1 foot.

56 S. SERRA'TUM (Thunb. prod. 109.) Native of the Cape of Good Hope. Stem somewhat 3-sided. Leaves elliptical, sharply-toothed, or serrated, smooth.

Saw-leaved Hedge-Mustard. Pl. 1 foot.

57 S. CRASSIFO'LIUM (Cav. præl. p. 437. no. 977. Lag. in hort. madr. ined. t. 24.) ♃. H. Native of Spain in waste places about Madrid. Radical leaves sinuately-runcinate, somewhat fleshy, upper ones linear, quite entire. Spikes nodding at the top. Flowers pale sulphur-coloured. Siliques filiform, curved. Perhaps a species of *Diplotáxis*.

Thick-leaved Hedge-Mustard. Fl. May, July. Clt. 1819. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

58 S. FU'GAX (Lag. elench. hort. madr. 1805 and 1815. p. 20.) ♃. H. Native of Spain. Plant smooth. Leaves lyrate; lobes oblong-lanceolate, acute. Pods filiform, at length twisted.

Fugacious Hedge-Mustard. Fl. Ju. Jul. Clt. 1820. Pl. $\frac{3}{4}$ to 1 ft.

59 S. LEPTOPHY'LLUM (Raf. fl. lud. p. 84. no. 268.). Native of Louisiana near water. Leaves pinnate; segments lobed, smooth, terminal one largest. Flowers small, yellowish. Petals shorter than the stamens and calyx. Stigma sessile. Pods long, round.

Slender-leaved Hedge-Mustard. Fl. Feb. Mar. Pl. 1 foot.

Cult. The greater part of the species of this genus are not worth cultivating, except in botanic gardens. They grow well in any kind of soil, and are all easily increased by seeds, or the perennial kinds may be increased by dividing the plants at the root. *Sisýmbrium millefòlium* and *strictíssimum* are the only species worth general cultivation. The first is a greenhouse shrubby species from Teneriffe, it grows freely in a rich light soil, and young cuttings will root readily under a hand-glass, if planted in a pot and placed in a sheltered situation: the last is a hardy perennial, fit for shrubberies, and is easily increased by dividing the plants at the root.

LVIII. ALLIA'RIA (from *Allium*, Garlic; plants smelling like garlic when bruised). Adans. fam. 2. p. 418. D. C. syst. 2. p. 488. prod. 1. p. 196.

LYN. SYST. *Tetradynàmia, Siliquòsa.* Silique roundish, somewhat four-sided, with prominent nerves. Calyx loose. Seeds somewhat cylindrical. Cotyledons linear-oblong, flat. Perennial erect herbs. Leaves large, stalked, toothed, cordate or orbiculate. Racemes terminal, at time of flowering corymbose, afterwards elongated; pedicels bractless. Flowers white.

1 A. OFFICINA'LIS (Andrz. cruc. from Bieb. fl. taur. suppl. p. 445.) leaves cordate; pods prismatic, much longer than the pedicels. ♃. H. Native throughout Europe under hedges, coppices, and in ditches; also in Persia about Lenkeran. Erýsimum Alliària, Lin. spec. 922. Fl. dan. 935. Bull. herb. 338. Smith, engl. bot. 796. Schkuhr. handb. 2. no. 1835. t. 183. Hésperis Alliària, Lam. fl. fr. 2. p. 503. Sisýmbrium Alliària, Scop. carn. ed. 2. no. 825. Erýsimum cordifòlium, Pall. ined. taur. Stok. bot. mat. med. 3. p. 458.

Var. β; leaves more deeply cut. Mich. hort. flor. p. 49. no. 4.

This plant having a strong smell and taste of garlic, it was formerly used by country people in sauces; with bread and butter, salted meat, and in salads, hence one of its common names *sauce alone*, and from growing by hedge sides it is called *Jack by the hedge*. In Germany it is called *das Knoblauchkraut, der Knoblauchhederich, Lauchel, Waldknoblauch, Ramfen, Ramschelwurzel, Gernsel, Salsekraut, Saskraut.* In Danish *Hvidlögsurt, Gaflekaal.* In Swedish *Hvitlöksort.* In French *L'Alliare, l'herbe des aux, l'herbe aux aillets.* In Spanish and Portuguese *Alliaria.* The whole plant, as the generic name imports, scents strongly of *garlic.* It is occasionally used as a salad, boiled as a pot-herb, or introduced in sauces. Mr. Neill observes that "when gathered as it approaches the flowering state, boiled separately, and then eaten to boiled mutton, it certainly forms a most desirable pot-herb; and to any kind of salted meat an excellent green." According to Linnæus's observation, horses, sheep, and swine refuse it, but kine and goats eat it. If eaten by cows it gives a strong disagreeable taste to the milk. When it grows in poultry-yards the fowls eat it, and it gives an intolerable rank taste to their flesh. The seeds excite sneezing. The leaves were formerly recommended internally as sudorific and deobstuent, of the nature of garlic, but much milder; externally as antiseptic, in gangrenous and cancerous ulcers.

Officinal Jack-by-the-hedge or Sauce alone. Fl. May, June. Britain. Pl. 1 to 3 feet.

2 A. BRACHYCA'RPA (Bieb. fl. taur. suppl. 445.) leaves ovate-orbicular; pods lanceolate, length of pedicel. ♃. H. Native of Iberia. Ráphanus Taúricus, Adam. Ráphanus rotundifòlius, Bieb. fl. taur. 2. p. 130. Stems either procumbent or erect.

Short-podded Jack-by-the-hedge. Fl. May, June. Clt. 1824. Pl. $\frac{3}{4}$ foot.

Cult. These plants are not worth cultivating except in general collections; they are easily increased by seeds.

LIX. ERY'SIMUM (from ερυω, *eryo*, to draw, to cure; on account of its supposed salutary effects in medicine. It is even now reckoned a powerful cure for a sore throat; it is also said to draw and produce blisters). Gærtn. fruct. 2. p. 297. t. 143. D. C. syst. 2. p. 490. prod. 1. p. 196. Erýsimum et Brássica, Lin.

LIN. SYST. *Tetradynàmia, Siliquòsa.* Silique 4-sided. (f. 46. *q*.)

Calyx closed. Cotyledons flat, oblong. Herbs biennial or perennial, rarely suffrutescent at the base, usually branched, sometimes smooth, sometimes pubescent or hairy. Leaves variable, usually oblong-linear, entire, or toothed, stalked, sessile, or as in *Corìngia*, cordate, stem-clasping. Racemes elongated, terminal, many-flowered; pedicels filiform, bractless. Flowers yellow, rarely cream-coloured or whitish.

Sect. I. Stylonema (from *στυλος*, *stylos*, a column or style, *νημα*, *nema*, a thread; style filiform). D. C. syst. 2. p. 491. prod. 1. p. 196. Style long, filiform; stigmas 2, spreading (f. 46. *q*.). Calyx almost permanent. Flowers nearly sessile.

1 E. siliculo'sum (D. C. syst. 3. p. 491.) pods shorter than the style, younger pods covered with the permanent calyx; flowers on short pedicels; leaves linear, quite entire. ♂. H. Native of the desert of Cumana in Tauria and about Astracan. Cheiránthus siliculòsus, Bieb. fl. taur. 2. p. 121. suppl. 443. Syrènia siliculòsa, Andrz. cruc. ined. Deless. icon. sel. 2. t. 65. Flowers yellow. Siliques hoary. Plant canescent.

Silicled Treacle-Mustard. Fl. May, June. Pl. 1 to 2 feet.

2 E. Si'culum (Spreng. new. entd. 3. p. 51.) pods shorter than the style, prismatic, hoary, also the adult ones are covered with the permanent calyx; flowers on short pedicels; leaves linear, smoothish. ♂. H. Native of Sicily. Flowers yellow.

Sicilian Treacle-Mustard. Fl. Ju. Jul. Clt. 1824. Pl. 1 ft.

3 E. sessiliflo'rum (R. Br. in hort. kew. ed. 2. vol. 4. p. 116.) pods length of style, younger ones covered by the permanent calyx; flowers sessile; leaves linear, entire. ♃. H. Native of the salt deserts and mountains of Siberia, and of Tauria, also of Caucasus. Cheiránthus quadrangulàris, Lher. stirp. 1. p. 91. t. 44. Cheiránthus montànus, Pall. itin. 1. p. 496. no. 115. Cheir. cornùtus, Lam. dict. 2. p. 717. Erysimum cornùtum, Pers. ench. 2. p. 200. Cheir. angulàtus, Schultz. obs. p. 129. Syrènia Lamárckii, Andrz. cruc. ined. Stems at base suffrutescent. Flowers sulphur-coloured, sweet-scented. The stems, younger leaves, and calyx are whitish-grey.

Sessile-flowered Treacle-Mustard. Fl. Ju. July. Clt. 1794. Pl. 1 to 2 feet.

4 E. angustifo'lium (Ehrh. beitr. 7. p. 155.) pods much longer than the style, younger ones covered with the permanent calyx; flowers almost sessile; leaves linear, entire. ♂. H. Native of Hungary and Transylvania in dry sandy plains. Walds. et Kit. hung. 1. p. 101. t. 98. Cheiránthus virgàtus, Poir. suppl. 2. p. 781. Syrènia Ehrárti, Andrz. cruc. ined. Cheirínia angustifòlia, Link. enum. 2. p. 170. Flowers very like those of *E. sessiliflòrum*, but a little smaller. Plant canescent.

Narrow-leaved Treacle-Mustard. Fl. June, Aug. Clt. 1800. Pl. ½ to 2 feet.

Sect. II. Cuspida'ria (from *cuspis*, a point; style). D. C. syst. 2. p. 493. prod. 1. p. 197. Style filiform, short. Silique tetragonal, 2-edged. Calyx falling off with the petals. Flowers on short but distinct pedicels.

5 E. cuspida'tum (D. C. syst. 2. p. 493.) pods thrice the length of the style, 2-edged, naked; flowers on short pedicels; leaves oblong-lanceolate, sinuately toothed. ♂. H. Native of Bithynia, Moldavia, Sicily, Tauria, Caucasus, and in Iberia near Tiflis. Cheiránthus cuspidàtus, Bieb. fl. taur. 2. p. 120. suppl. 443. Cheiránthus Bithýnicus, Pers. ench. 2. p. 200. Syrènia Biebersteìnii, Andrz. cruc. ined.—Buxb. cent. 2. p. 23. t. 33. f. 1. E. glàbrum, Presl. ex Spreng. Sinàpis tetraèdra, Presl. The cultivated plants are almost smooth, while the spontaneous ones are rather grey, especially on the stem, with appressed hairs, which are fixed by the centre, hence they are 2-parted. Flowers yellow. Seed ovate, obliquely truncate at the top on both sides.

Cuspidate-podded Treacle-Mustard. Fl. May, June. Clt. 1800. Pl. 1 to 2 feet.

6 E. rupe'stre (D. C. syst. 2. p. 494.) leaves somewhat toothed, radical ones spatulate, cauline ones oblong, all pubescent with 2 or 3-parted hairs; stem suffruticose; length of the style exceeding the breadth of the pod. ♃. ♄. H. Native of Bithynia on Mount Olympus. Cheiránthus rupéstris. Smith, fl. græc. t. 633. A tufted suffruticose, branched plant. Flowers yellow, few, size of those of *E. cuspidàta*.

Rock Treacle-Mustard. Fl. May, June. Pl. 1 foot.

Sect. III. Erysima'strum (altered from Erýsimum). D. C. syst. 2. p. 494. prod. 1. p. 197. Style short, or scarcely any. Siliques 4-sided. (f. 46. *q*.) Calyx deciduous. Leaves not cordate, nor stem-clasping. Flowers distinctly pedicelled.

7 E. leptóstylum (D. C. syst. 2. p. 494.) leaves lanceolate, remotely toothed, pubescent with 3 or 4-parted hairs; branches few, rather upright; petals somewhat orbicular; pods erect; style filiform. ♂. H. Native on the bank of the Lower Tanais, about Charkovia, and on the sides of a mountain called Beschtau, in Caucasus. Cheiránthus grandiflòrus, Bieb. fl. taur. 2. p. 117. suppl. p. 441, but not of Desf. Stem erect, sparingly branched. Flowers yellow. Plant hoary.

Slender-styled Treacle-Mustard. Fl. May, July. Clt. 1827. Pl. 1½ foot.

8 E. exalta'tum (Andrz. in Bess. enum cont. 2. no. 1554.) canescent, scabrous; leaves linear-lanceolate, narrowed at each end, spreading, remotely denticulated; pods erectly spreading; outer glands of receptacle 2-horned. ♂. H. Native of Podolia. Very like *E. leptóstylum*. Flowers yellow.

Exalted Treacle-Mustard. Fl. May, June. Clt. 1824. Pl. 2 ft.

9 E. suffruticòsum (Spreng. nov. prov. p. 17. no. 36.) stem suffruticose at the base; leaves lanceolate, entire, pubescent from 2-parted hairs; pods erect; length of style exceeding the breadth a little. ♄. H. Native —? Cheiránthus fruticòsus, Lher. herb. Stem branching much from the base. Flowers at first corymbose, about a quarter the size of those of *Cheiránthus Cheìri*, pale yellow, or almost citron coloured. Plant very like *Cheiránthus Cheìri*.

Suffruticose Treacle-Mustard. Fl. April, May. Clt. 1822. Pl. 1 to 1½ foot.

10 S. odora'tum (Ehrh. beitr. 7. p. 157.) stem branched; leaves lanceolate, deeply toothed, scabrous, with 3-parted hairs; claws of petals about equal in length to the calyx; siliques straight, elongated, crowned by a 2-lobed stigma. ♂. H. Native of Hungary and Volhynia. S. stríctum, *var*. *β*, odoràtum, D. C. prod. 1. p. 197. Flowers yellow, sweet scented.

Sweet-scented Treacle-Mustard. Fl. July. Clt. 1795. Pl. 1 to 2 feet.

11 E. robu'stum (D. Don, prod. fl. nep. 202.) leaves lanceolate, mucronulate, toothed, tapering to the base, silky on both surfaces; siliques ascendant, puberulous, 5-times longer than the pedicel; stem angular, silky, branched. ♂. H. Native of Gosaingsthan. Stem stiff, heptagonal. Pedicels tetragonal. Flowers yellow. Stigma broad. Siliques tetragonal.

Robust Treacle-Mustard. Pl. 2 feet.

12 E. stríctum (Gært. fl. wetter. 2. p. 451. no. 836.) leaves lanceolate, toothed, pubescent from 3-parted hairs; stem upright; pods erect; style very short, stigma 2-lobed. ♂. H. Native of Volhynia, Transylvania, Austria, and Dauphiny, in gravelly fields. E. Pannónicum, Crantz. aust. 28. E. hieracifòlium, Jacq. aust. t. 73. E. odoratum, Willd. spec. 3. p. 512. Cheirínia strícta, Link, enum. 2. p. 170. Stems 1 or 2 from the same root. Flowers yellow.

Straight-stemmed Treacle-Mustard. Fl. Jun. Aug. Clt. 1795. Pl. 1 to 2 feet.

13 E. virga'tum (Roth. cat. bot. 75.) leaves oblong-lanceolate, somewhat toothed, pubescent from 3-parted hairs; stem straight, round; pods erect; length of style rather exceeding the breadth of pod. ♂. H. Native of gravelly places in the Alps, of Jura, and by way-sides in Holland, &c. E. hieracifòlium, Oed. fl. dan. 923.? Flower yellow, hardly sweet-scented.

Var. β, *Cheiránthus firmus*; Willd. enum. suppl. 45.

Twiggy Treacle-Mustard. Fl. June, Jul. Clt. 1807. Pl. 1 to 2 feet.

14 E. longisiliquòsum (Willd. enum. 680.) leaves oblong-lanceolate, entire, somewhat pubescent from 3-parted hairs; stem straight, round; pods erect, terminated by the very short style. ♂. H. Native of Vallais, and about Geneva, in gravelly places. E. virgàtum, Schleich. pl. helv. D. C. icon. gall. rar. t. 36. Stems erect, sparingly branched. Flowers pale yellow; claws of petals length of calyx.

Long-podded Treacle-Mustard. Fl. June, July. Clt. 1819. Pl. 2 feet.

15 E. cæspitòsum (D. C. syst. 2. p. 497.) leaves somewhat linear, quite entire, pubescent from 2-parted hairs; stems tufted, suffruticose; pods erect; length of style twice the breadth of the pod. ♃. ♄. H. Native of Persia, on the mountains in the province of Ghilan or Guylan. Stems branched, tufted. Flowers yellow; petals obovate.

Tufted Treacle-Mustard. Fl. July, Aug. Clt. 1828. Pl. ½ ft.

16 E. hieracifòlium (Lin. spec. 923.) leaves lanceolate, narrowed at the base, remotely and sharply sinuately-toothed, stem straight, a little branched, round; pods erect. ♂. H. Native of Hercynia, about Neustad, on mountains; in Sweden; about Moscow, but rare: on Mount Hæmus. E. strictíssimum, Fl. vetter. 2. p. 451, from Gmel. E. Marschallianum, Andrz. cruc. ined. ?—J. Bauh. hist. 2. p. 873. f. 2.—Besl. eyst. ord. 2. t. 15. f. 2. Flowers pale-yellow, scentless. Allied on the one side to *E. repándum*, and on the other to *E. odoràtum*.

Var. β, *pàtulum* (D. C. syst. 2. p. 497.) pods spreading.

Hawkweed-leaved Treacle-Mustard. Fl. May, Jun. Clt. 1820. Pl. 1 to 2 feet.

17 S. crepidifòlium (Rchb. ex. Spreng. syst. 2. p. 906.) stem branched; leaves linear, dilated at the apex, sinuate-toothed, scabrous with 3-parted hairs; claws of petals exceeding the calyx; siliques very long, spreading, crowned by the almost sessile stigma. ♂. H. Native of Germany. Flowers yellow.

Crepis-leaved Treacle-Mustard. Fl. May, June. Clt. 1829. Pl. 1 foot.

18 E. au'reum (Bieb. fl. taur. 2. p. 117. suppl. p. 440.) leaves lanceolate, pointed, toothed, pubescent, green; branches and pods spreading; stigma thick, 2-lobed, somewhat pedicelled. ♂. H. Native of thickets at Cape Caucasus, between Mosdok and Kisljar, at the river Terek, and also at the river Kuma. Plant green. Stems branched at the top. Leaves somewhat scabrous with 3-parted hairs. Flowers golden, Deless. icon. sel. 2. t. 66.

Golden-flowered Treacle-Mustard. Fl. May, June. Clt. 1820. Pl. 2 or 3 feet.

19 E. Ibe'ricum (D. C. syst. 2. p. 498.) lower leaves runcinate, toothed, upper ones lanceolate, undivided; floriferous branches and pods compressed, 4-sided, erectly-spreading. ♂. H. Native of Caucasus on Alp Kaischaur, towards the snowy region, in the mountains about the Kuban, at the falls in Jucharibasch. On Mount Ararat, in Armenia, where it flowers in August and September. Plant green, at first sight smooth, but is scabrous, with 3-parted, reversed hairs. Stems erect, simple or branched. Flowers yellow. Cheiránthus Armenìacus, Sims, bot. mag. t. 835. A beautiful plant.

Iberian Treacle-Mustard. Fl. May, June. Clt. 1803. Pl. 1 ft.

20 E. cheiranthoìdes (Lin. spec. 923.) leaves lanceolate, somewhat denticulated, green, and somewhat scabrous; pods erectly-spreading, twice the length of the pedicels; stigma small, almost sessile. ⊙. H. Native throughout the whole of Europe, from France and Italy to Lapland and Siberia; also in Virginia and Louisiana; plentiful in Britain, in turnip fields, gardens, osier-holts, hedges, and the margins of fields. Jacq. aust. t. 23. fl. dan. 731. Smith, engl. bot. t. 942. Gært. fruct. 2. p. 297. t. 143. Schkuhr. handb. 2. no. 1837. t. 183. Cheiránthus erysimoìdes, Huds. angl. 287. E. turrìtum, *var.* β, Lam. fl. fr. 2. p. 514. Cheiránthus turritoìdes, Lam. dict. 2. p. 716. E. cheiranthifòlium, Gilib. fl. lith. in Ust. del. opus. 2. p. 361. E. parviflòrum, Pers. ench. 2. p. 199. Nutt. gen. amer. 2. p. 18. Stem erect, branched, rough, with small close, deflexed, mostly simple bristles. Leaves and pods clothed with minute forked bristles. Flowers small yellow.

Var. β, *Cheiránthus scapígerus* (Willd. prod. no. 663. t. 5. f. 10.) stems almost leafless, bearing scape-like racemes.

Var. γ, *Cheiránthus aquáticus* (Lejeune, fl. spa. 2. p. 68.) stem diffuse; leaves ovate lanceolate, blunt; pods spreading an inch long, seated on pedicels 4 lines long. Native of rivulets in Holland.

Worm-seed or *Wall-flower-like* Treacle-Mustard. Fl. July. Britain. Pl. 1 to 3 feet.

21 E. repa'ndum (Lin. amœn. 3. p. 415.) leaves linear-lanceolate, repand-toothed, somewhat pubescent with forked hairs; pods spreading, hardly thicker than the short pedicels, torulose; stigma sessile. ⊙. H. Native of corn-fields in the more temperate parts of Europe, particularly in Spain, Piedmont, Etruria, Thuringia, Austria, Bohemia, Transylvania, Greece, Tauria, and Iberia. Jacq. aust. t. 22. E. ramosíssimum, Crantz. aust. p. 29. Cheiránthus ramosíssimus, Lam. dict. 2. p. 717. Stem much branched at the top. Flowers yellow. Seeds rufous, oblong.

Var. β, *símplex* (D. C. syst. 2. p. 500.) stem simple, not branched, Mich. hort. fl. p. 49. no. 9. Pl. ⅓ foot.

Repand-toothed-leaved Treacle-Mustard. Fl. May, June. Clt. 1772. Pl. 1 to 2 feet.

22 E.? tene'llum (D. C. syst. 2. p. 500.) leaves linear, repandly-toothed, stem almost simple; pods spreading? roundish; stigma 2-lobed, pedicelled. ⊙. H. Native of the Levant, between Aleppo and Mossul. Very like *E. repándum*, *var.* β, but the flowers are much larger. Flowers yellow.

Pliant Treacle-Mustard. Fl.? Pl. ¼ foot.

23 E. Helve'ticum (D. C. fl. fr. 4. p. 658.) leaves linear, entire, grey with appressed forked hairs; stem erect, hardly branched; pods erectish: stigmas pedicelled, emarginate. ♂. H. Native of Switzerland in dry exposed places in valleys about Lenk, at the bottom of Mount Cramont. In Piedmont; in Carpathian mountains, near the termination of the range of Firs; also in Sicily. Cheiránthus Helvéticus, Jacq. vind. t. 9. E. linearifòlium, Mœnch. meth. 85. Cheiránthus pàllens, Hall, fille. E. pàllens, Pers. ench. 2. p. 200. E. Bonnanianum, Presl. ex. Spreng. Petals obovate, pale yellow.

Swiss Treacle-Mustard. Fl. May, Jul. Clt. 1793. Pl. 1½ foot.

24 E. cane'scens (Roth. cat. bot. 1. p. 76.) leaves linear, entire, or somewhat toothed, greyish with forked hairs; petals obovate-oblong; claws of the petals longer than the calyx; pods erect, 5-times longer than the pedicels; stigma almost sessile. ♂. H. Native on hills throughout the south of Europe, in dry and exposed places, Spain, south of France, Italy, Carniola, Vallais, Austria, about Vienna; also of Sicily. Cheiránthus alpìnus, Lin. mant. 93? Jacq. aust. 1. p. 48. t. 75. E. sylvéstre, Scop. carn. ed. 2. no. 630. E. diffùsum, Ehr. beit. 7. p. 157. Cheiránthus Boccòni, All. ped. no. 988. t. 58. f. 2? E. crassístylum, Presl. ex. Spreng. A very *polymorphous* plant with the stems sometimes solitary, sometimes diffuse, branched. Flowers yellow, scentless.

Greyish Treacle-Mustard. Fl. May, July. Clt. 1731. Pl. ½ to ¾ foot.

25 E. Andrzejoskia'num (Bess. in litt. and D. C. syst. 2. p. 502.) leaves linear, channelled, somewhat toothed, greyish with forked appressed hairs; petals obovate; claws of petals a little longer than the calyx; pods erect, twice the length of the pedicel; stigma almost sessile. ♂. H. Native of Tauria and Caucasus, in dry exposed fields. E. diffûsum, Bieb. fl. taur. 2. p. 116. Very like *E. canéscens.* Floriferous branches panicled. Flowers yellow. Plant hoary.

Andrzejoski's Treacle-Mustard. Fl. May, July. Clt. 1818. Pl. 1½ foot.

26 E. colli'num (Andrz. in litt. D. C. prod. 1. p. 198.) lower leaves stalked, spatulate, angularly-toothed, upper ones linear-lanceolate, entire, clothed with 3-parted hairs; stem erect, somewhat branched; pods rough, erect. ♂. H. Native of grassy hills at the river Terek, near the little town of the Cossacs called Galuga. Cheiránthus collìnus, Bieb. fl. taur. 2. p. 119. Flowers yellow, about the size of those of *E. repándum.*

Hill Treacle-Mustard. Fl. June. Clt. 1823. Pl. 2 feet.

27 E. leptophy'llum (Andrz. in litt. D. C. prod. 1. p. 198.) leaves all linear-lanceolate, quite entire, hoary, scabrous; stem branched, hoary; pods spreading, hoary. ♂. H. Native of dry hills in Iberia, and in rather shaded woody mountains near the Aragwi. Cheiránthus leptophýllus, Bieb. fl. taur. 2. p. 119. D. C. syst. 2. p. 182. Habit of *E. diffûsum.* Stems erect, branched. Flowers yellow.

Slender-leaved Treacle-Mustard. Fl. May, July. Clt. 1820. Pl. 1 foot.

28 E. Maclovia'num (Gay ex. Spreng. syst. app. p. 243.) leaves lanceolate, denticulated, glaucous, bearded at the apex; calyx deciduous; siliques very smooth, much longer than the style. ♂. H. Native of the Falkland Islands. Brássica Magellánica, Gaud. Brássica. Macloviàna, d'Urv.

Maclove's Treacle-Mustard. Pl. 1 foot.

29 E. versi'color (Andrz. in litt. D. C. prod. 1. p. 198.) leaves hoary, lower ones runcinate, upper ones linear, very entire; branches spreading; pods hoary, straight. ♂. H. Native of the north of Persia, in arid fields adjacent to Caucasus, also at the river Terek, about Kisljar and Mosdok, and in the desert of Cumana. Cheiránthus versícolor, Bieb. fl. taur. 2. p. 119. suppl. p. 442. D. C. syst. 2. p. 182. Cheiránthus leucánthemus, Steph. in Willd. spec. 3. p. 521. Habit of *E. leptophýllum.* Stems clothed with forked hairs, and the leaves with 3-parted hairs. Flowers of various colours, particularly white, cream, sulphur-yellow, or deep yellow.

Various-coloured-flowered Treacle-Mustard. Fl. May, June. Clt. 1821. Pl. 1 foot.

30 E. lanceolatum (R. Br. in hort. kew. ed. 2. vol. 4. p. 116.) lower leaves lanceolate, toothed, upper ones almost linear, entire; petals orbiculately-obovate; claws of petals longer than the calyx; pods erect; stigma almost sessile. ♂. H. Native on dry rocks, fields, and walls, nearly throughout the whole of Europe, exclusive of Britain and Ireland. From Spain to Caucasus, and from Sicily to Sweden; also of the north-west coast of America. Flowers larger than those of *E. canéscens.*

Var. α, màjor (D. C. syst. 2. p. 502.) stem simple or branched, rigid, about a foot high. Cheiránthus erysimoìdes, Lin. spec. 923. Jacq. aust. t. 74. Erýsimum cheiranthoìdes, Crantz. aust. p. 28. E. Hésperis, Scop. carn. ed. 2. no. 829. Erýsimum, muràle. Desf. cat. ed. 1. p. 129. Pers. ench. 2. p. 199. Cheiránthus fírmus, Schleich. pl. helv. E. Cheiránthus, Pers. ench. 2. p. 199. Perhaps many species are here joined. Flowers yellow.

Var. β, minor (D. C. syst. l. c.) stem simple, sometimes branched, somewhat ascending. Cheiránthus alpìnus, Lin. mant. 93? E. ochroleùcum *β*, D. C. fl. fr. ed. 3. vol. 4. p. 658. E. alpìnum, Pers. ench. 2. p. 200. Flowers pale yellow.

Lance-leaved Treacle-Mustard. Fl. May, July. Clt. 1597. Pl. ½ to 1½ foot.

31 E. Rhæ'ticum (D. C. syst. 2. p. 503.) leaves linear-lanceolate, entire, or toothed; stems somewhat ascendant; claws of petals longer than the calyx; petals obovate; pods erectish, very long; style longish. ♂. H. Native of Rhætia. Cheiránthus Rhæ'ticus, Schleich. pl. helv. Horn. hort. hafn. p. 613. Stems clothed with forked hairs. Flowers yellow, like those of *E. lanceolàtum.*

Rhætian Treacle-Mustard. Fl. May, Jul. Clt. 1819. Pl. 1 ft.

32 E. du'bium (D. C. syst. 2. p. 504.) leaves lanceolate, toothed, narrowed at the base; petals obovate-oblong; pods spreading; style scarcely any. ♂. H. Native of? Cheiránthus dùbius, Horn. hort. hafn. suppl. p. 73. Stems covered with forked hairs. Leaves smooth, or hardly pubescent. Flowers yellow, not so large as those of *E. canéscens.*

Doubtful Treacle-Mustard. Fl. May, June. Clt. 1820. Pl. 1 to 1½ foot.

33 E. longifo'lium (D. C. syst. 2. p. 504.) leaves linear-lanceolate, elongated, a little toothed: petals obovate-oblong; pods erect, pubescent; style longish. ♃. H. Native of Algiers in the fissures of rocks. E. grandiflòrum, Desf. atl. 2. p. 88. Leaves 4 or 6 inches long. Flower large, yellow.

Long-leaved Treacle-Mustard. Fl. May, Jul. Clt. 1822. Pl. ½ to 1 foot.

34 E. gra'cile (D. C. syst. 2. p. 504.) leaves linear-lanceolate, toothed, pointed; petals obovate-oblong; pods erect, rather rough from stellate hairs; style hardly any. ♂. H. Native of the north of Caucasus and in Iberia about Tiflis. Stem covered with forked hairs, sparingly branched at the top, and covered with 2 or 3-parted hairs. Flowers yellow, about the size of those of *E. canéscens;* claws of petals length of calyx.

Slender Treacle-Mustard. Fl. May, July. Clt. 1824. Pl. 1 to 1½ foot.

35 E. ri'gidum (D. C. syst. 2. p. 505.) leaves linear-lanceolate, acutely toothed; pods spreading, smooth, stiff; style hardly any. (f. 46. *q.*) Native of the Levant. Stem much branched, covered with appressed 2-parted down. Flowers yellow. Deless. icon. sel. 2. t. 67.

Rigid-podded Treacle-Mustard. Pl. 2 feet.

36 E. sca'brum (D. C. syst. 2. p. 505.) leaves linear-lanceolate, lower ones blunt, somewhat toothed; racemes short; pods erect, tuberculately scabrous; style conical-filiform. Native of Mount Lebanon. Stems and leaves grey from appressed forked hairs. Flowers unknown.

Scabrous-podded Treacle-Mustard. Pl. ½ foot.

37 E. a'sperum (D. C. syst. 2. p. 505.) leaves linear-oblong, lower ones dentately-runcinate, pubescent, scabrous; pods spreading; style very short. ♂. H. Native of North America in fields about the river Missouri. Cheiránthus ásper, Nutt. gen. amer. 2. p. 436. Stem and leaves greyish, with forked appressed hairs. Pods 3 inches long, pubescent. Petals yellow, with white claws. E. lanceolàtum, Pursh. fl. amer. sept. 2. p. 436.

Rough Treacle-Mustard. Fl. Ju. Jul. Clt. 1824. Pl. ¾ ft.

38 E. strigo'sum (D. C. syst. 2. p. 506.) strigose; leaves oblong-lanceolate, quite entire or denticulated; pods erect; stigma 2-parted, sessile. ♂. H. Native of Siberia. Cheiránthus strigòsus, Ledeb. in mem. acad. petersb. 5. ann. 1815. p. 549. The whole plant is strigose. Flowers erect, yellow. Stems solitary, furrowed.

Strigose Treacle-Mustard. Fl. June, July. Clt. 1816. Pl. ¾ ft.

39 E. Redo'wski (Weinm. cat. hort. dorp. 1810. p. 65.) leaves all linear, channelled, quite entire, greyish; stem branched, angular; petals emarginate; pods erectly spreading, obtuse-

angled. ♂. H. Native of Siberia. The whole plant is covered with appressed white hairs. Flowers pale-yellow, large. Petals obcordate.

Redowski's Treacle-Mustard. Fl. June, Aug. Clt. 1821. Pl. 1½ to 2 feet.

Sect. IV. Cori'ngia (from *cor*, the heart; shape of leaves.) D. C. syst. 2. p. 507. prod. 1. p. 199. Style hardly any. Petals erectish. Flowers pale-yellow or white, seldom purple. Leaves cordate, and stem-clasping at the base.

40 E. alpinum (Baumg. fl. trans. 2. p. 263.) leaves membranous, smooth, cauline ones cordate-sagittate, stem-clasping, oblong, radical ones stalked, ovate. ♃. H. Native of Spain, Cevennes, Alps of Alsace, Hercynia, Nassau about Jena, Transylvania, and the Apennines, in stony woody places of mountains. Brássica alpìna, Lin. mant. 95. Vill. dauph. 3. p. 330. t. 36. Turrìtis pauciflòra, Grim. Turrìtis Brássica, Liers. fl. herb. no. 518. Turrìtis sagittàta, Schrank. mon. t. 99? A'rabis brassicæfórmis, Wallr. sched. 359. Root hard, twisted. Younger plant with a few scattered hairs, the rest smooth, hardly glaucous. Stem simple. Flowers white, almost like those of *A'rabis*.

Alpine Treacle-Mustard. Fl. Ju. Aug. Clt. 1793. Pl. 1 to 1½ ft.

41 E. perfolia'tum (Crantz. austr. 27.) radical leaves obovate, cauline ones cordate, stem-clasping, all blunt, smooth, and glaucous; pods 4-sided. ⊙. H. Native of the temperate parts of Europe and Asia, particularly Spain, France, Germany, Italy, Tauria, Japan; in England in Essex, but rare, near Harwich on the cliffs, as also at Bawdsey, and near Oxford; in Suffolk; in fields near Godstone and Marshfield, Sussex. Brássica orientàlis, Lin. spec. p. 931. Jacq. austr. t. 282. Smith, engl. bot. t. 1804. Schkuhr. handb. 2. no. 1862. t. 186. E. campéstre, Scop. carn. ed. 2. no. 827. Brássica turrìta, Weig. obs. 32. Brássica campéstris, Mat. sil. no. 500. Brássica perfoliàta, Lam. dict. 1. p. 748. Brássica álba, Gilib. fl. lith. in ust. del. op. 2. p. 361. E. orientàle, R. Br. in hort. kew. ed. 2. vol. 4. p. 117. Coríngia orientàlis, Andrz. cruc. ined. Herb very smooth, glaucous. Stem simple, seldom branched. Flowers white or cream-coloured. This plant is cultivated in Japan for the seeds.

Perfoliate-leaved Treacle-Mustard. Fl. June. Britain. Pl. 1 to 1½ foot.

42 E. viola'ceum (D. Don, prod. fl. nep. 202.) leaves lanceolate, acute, pilose, denticulated, sagittate at the base, half-stem-clasping; stem straight, quite simple, pilose; racemes short, crowded; petals quite entire, much longer than the calyx. ♃. H. Native of Gosaingsthan, where it is called *Outch*. Flowers of a violet-purple colour. Siliques spreading.

Violaceous-flowered Treacle-Mustard. Pl. 2 to 3 feet.

43 E. Austrìacum (Baumg. fl. trans. 2. p. 263.) radical leaves obovate, cauline ones cordate-stem-clasping, all blunt, smooth, and glaucous; pods 4-sided, and striated with elevated nerves. ⊙. H. Native of Spain, very common in wheat fields, Austria, Transylvania, and Iberia. Brássica Austrìaca, Jacq. austr. p. 45. t. 283, Brássica lùtea, Gilib. fl. lith. in Ust. del. op. 2. p. 361. Brássica perfoliàta var. β, Lam. dict. 1. p. 748. Brássica orientàlis β, Pers. ench. 2. p. 206. Crántzia ochroleùca, Lag. fl. hisp. ined. Gorínkia Austrìaca, Presl. fl. cech. p. 141. Very like *E. perfoliàtum*, and is often confused with it, but it differs in the flowers being a little smaller, yellow, or cream-coloured, not white, and in the pods being more erect.

Austrian Treacle-Mustard, or Hares-ear. Fl. May, June. Clt. 1806. Pl. 1 to 1½ foot.

† *Species not sufficiently known, but probably all referable to Sect. III. Erysimástrum.*

44 E. alti'ssimum (Lejeune, fl. spa. 2. p. 70.) ♂. H. Native in mountain woods between Verviers and Limbourg. Leaves linear-lanceolate, channelled, quite entire. Petals pale-yellow, obcordate. Pods 4-sided, terminated by a two-lobed stigma. Stem erect, much branched, greyish-white from appressed hairs, as well as the leaves. Flowers yellow.

Tallest Treacle-Mustard. Fl. Ju. July. Clt. 1818. Pl. 3 feet.

45 E. bi'color (D. C. syst. 2. p. 509.) ♂. H. Native of Switzerland. Cheiránthus bícolor, Horn. hafn. 2. p. 613. Leaves lanceolate, lower ones remotely-toothed, upper ones quite entire. Pods spreading, 4-sided. Flowers yellow.

Two-coloured Treacle-Mustard. Fl. June, July. Clt. 1819. Pl. 1 to 1½ foot.

46 E. pu'milum (Horn. hort. hafn. 2. p. 613.) ♂. H. Native of Switzerland. Leaves somewhat toothed, lower ones spatulately-ovate; upper ones linear; pods much spreading, 4-sided. Cheiránthus pùmilus, Horn. &c. Flowers yellow.

Dwarf Treacle-Mustard. Fl. June, July. Clt. 1823. Pl. ½ to ¾ feet.

47 E. pa'tulum (Horn. hort. hafn. suppl. 73.) ♂. H. Native of —? Leaves lyrately-pinnatifid, rather scabrous, upper ones sinuated. Pods spreading. Flowers yellow.

Spreading-podded Treacle-Mustard. Fl. Ju. Jul. Clt. 1824. Pl.?

48 E. sylva'ticum (Bieb. fl. taur. suppl. p. 441.) ♂. H. Native of the Ukraine in woods. Leaves lanceolate, remotely toothed. Branches spreading. Corolla paler and rather larger than in *E. cheiranthoìdes*. Pods spreading.

Wood Treacle-Mustard. Fl. June, July. Pl. 1 to 2 feet.

49 E. Marschallia'num (Andrz. in Bieb. fl. taur. suppl. p. 441.) ♂. H. Native of South Podolia. Very near to *E. hieracifòlium*, but differing in the leaves and pods being more upright and one-half shorter. Flowers yellow.

Marschall-Bieberstein's Treacle-Mustard. Fl. Ju. Jul. Pl. 1 ft.

Cult. The perennial herbaceous and sub-shrubby species of this genus answer well for the flower-border in any common garden soil; some of the smaller kind do well for ornamenting rock-work, or to be grown in pots, and placed among other alpine plants; they may be either increased by cuttings planted under a hand-glass, by seeds or by dividing the plants at the root. The biennial and annual kinds may all be sown in the open ground, and treated as other hardy annuals and biennials.

LX. LEPTA'LEUM (from λεπταλεος, *leptaleos*, slender; leaves slender and filiform.) D. C. syst. 2. p. 510. prod. 1. p. 200.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique roundish, sessile; stigmas 2, connivent. Calyx equal at the base. Stamens 4 or 6. Seeds numerous, in one row. Small smooth annual herbs. Leaves glaucous, filiform, sometimes entire, sometimes sparingly toothed, sometimes pinnately-parted; lobes filiform. Racemes terminal, few-flowered; pedicels very short, rising from the axillæ of the leaves. Flowers small, whitish-purple.

1 L. filifo'lium (D. C. syst. 2. p. 511.) some of the leaves are entire, others sparingly lobed; stem longer than the pods; pods rough from small down. ⊙. H. Native of Siberia at the river Kuma. Deless. icon. sel. 2. p. 68. Sisýmbrium filifòlium, Willd. spec. 3. p. 496. Pods axillary, erect or deflexed, covered with short hairs at the base, which are hooked at the point.

Thread-leaved Leptaleum. Fl. June, July. Clt. 1820. Pl. 1 or 2 inches.

2 L. pygmæ'um (D. C. syst. 2. p. 511.) leaves nearly all pinnate-parted; stem shorter than the pods, which are muricated and glabrous. ⊙. H. Native of Persia. Very like the first, but differs in hardly having any stem, and in the leaves being nearly all pinnate-parted, with linear distant lobes. Deless. icon. sel. 2. t. 68.

Pygmy Leptaleum. Pl. hardly an inch.

Cult. These are little annual plants, but are not worth culti-

vating. They only require to be sown in the open ground in any kind of soil.

LXI. STANLE'YA (in honour of Edward Lord Stanley, president L. S. and F.R.S. a profound ornithologist.) Nutt. gen. amer. no. 166. D. C. syst. 2. p. 511. prod. 1. p. 200.

LIN. SYST. *Tetradynàmia, Siliquòsa.* Silique roundish, stalked above the torus. Seeds oblong, terete. Calyx spreading. Smooth glaucous erect herbs. Cauline leaves alternate, pinnatifidly-lyrate or entire. Racemes elongated, terminal. Pedicels bractless, filiform. Flowers yellow. Habit nearly of *Brássica* on the one hand, and on the other to *Cleòme*.

1 S. PINNATI'FIDA (Nutt. gen. amer. 2. p. 71.) leaves interruptedly pinnatifid. ♃. H. Native of Upper Louisiana at the junction of Point-Creek and the Missouri among broken calcareous rocks. Cleòme pinnàta, Pursh. fl. amer. sept. 2. p. 739. Leaves thick, emulating those of a species of *Brássica*. Flowers yellow, nearly like those of a species of *Cleòme*. The leaves of this species, from their analogy with *Brássica*, have been tried as an aliment, but after it has been cooked it becomes powerfully emetic.

Pinnatifid-leaved Stanleya. Fl. May. Clt. 1812. Pl. 3 feet.

2 S. GRA'CILIS (D. C. syst. 2. p. 512.) upper leaves oblong, entire, sessile, narrowed at the base. ⊙. H. Native of North America between Wateree and Longaree. Cleòme lævigàta, Sol. mss. in herb. Banks. Stems solitary, slender, sparingly branched at the top. Flowers small, yellow, hexandrous.

Slender-stemmed Stanleya. Pl. 1 to 1½ foot.

3 S. AMPLEXICAU'LIS (Nutt. in Sillim. amer. journ. 5. ann. 1822. p. 297.) leaves entire? stem-clasping; flowers corymbose; pods nodding.—Native of Eastern Florida in pine woods. Plant smooth, glaucous. Pods 2 or 3 inches long. Flowers yellow.

Stem-clasping-leaved Stanleya. Pl. 1 to 1½ foot.

Cult. The genus *Stanleya* grows most freely in peat or vegetable soil. They will thrive in the open border in a rather shady situation. *S. pinnatifida* may be either increased by dividing the plant at the root or by seeds, and the other two species by seeds only.

Tribe VIII.

CAMELI'NEÆ (plant agreeing with *Camelìna* in important characters), or NOTORHI'ZEÆ (see sub-order II.)-LATISE'PTÆ (*latus* broad and *septum* a dissepiment; dissepiment broad.) D. C. syst. 2. p. 513. prod. 1. p. 201. Silicle with concave valves, and with an elliptical dissepiment in its greatest diameter (f. 46. *r.*). Seeds ovate. Cotyledons flat, incumbent, contrary to the dissepiment (f. 45. *i.*). The dissepiment in several of the genera is incomplete, sometimes wanting altogether.

LXII. STENOPE'TALUM (from στενος, *stenos*, narrow, and πεταλον, *petalon*, a petal; petals narrow.) R. Br. in D. C. syst. 2. p. 513.

LIN. SYST. *Tetradynámia, Siliculòsa.* Silicle elliptical, with concave or flat valves; cells many-seeded. Style none. Seeds small, somewhat ovate, in 2 rows in each cell. A slender annual smooth upright herb. Leaves scattered, linear, entire. Racemes terminal, elongating as they come to maturity. Pedicels bractless, filiform, erect, one-half shorter than the pods. Petals narrow.

1 S. LINEA'RE (R. Br. in D. C. syst. l. c.) ⊙. H. Native of south-west coast of New Holland. Herb very slender. Stem filiform, simple or sparingly branched. Leaves 7 or 8 lines long, and half a line broad. Pods 2 lines long and 1 line broad. Petals very narrow.

Linear-petalled Stenopetalum. Pl. 1 foot.

Cult. The seeds of this plant should be sown in a pot, filled with a mixture of sand loam and peat, which should be placed in a hot-bed until the month of May, when it may be planted out in front of a wall, or in any warm situation in the open border, where it will ripen its seed; but the plant is certainly not worth cultivating, except in botanic gardens.

LXIII. CAMELI'NA (χαμαι, *chamai*, on the ground, and λινον, flax; that is to say, dwarf-flax; resemblance.) Crantz. austr. 1. p. 17. Medik. gen. pl. 1. p. 67. t. 1. f. 11. D. C. syst. 2. p. 514. prod. 1. p. 201.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle obovate, or somewhat globose, with ventricose valves, opening with the part of the style (f. 46. *r.*); cells many-seeded. Style filiform. Seeds oblong, not margined. Erect usually branched herbs. Leaves stem-clasping or sagittate, oblong, entire, sinuately-toothed, pinnatifid or serrate. Racemes terminal, many-flowered, elongated after flowering. Pedicels filiform, bractless. Flowers yellow.

SECT. I. CHAMÆLI'NUM (same meaning as genus.) D. C. syst. 2. p. 514. prod. 1. p. 201. Silicle obovate, margined. Style conical. Stigma simple. Plants annual. Leaves sagittate.

1 C. ARMENI'ACA (Desv. journ. bot. 3. p. 182.) pods obconical at the base, elongated, terminated by the short style; leaves linear-lanceolate, quite entire. ⊙. H. Native of Armenia. Stems rough, with scattered hairs. Leaves villous.

Armenian Gold of Pleasure. Fl. June, July. Pl. ¾ foot.

2 C. SATI'VA (Crantz. austr. p. 10.) pods cuneated, pear-shaped, with 4 ribs, terminated by a longish style; leaves almost entire, lanceolate. ⊙. H. Native throughout the whole of Europe in cultivated fields, chiefly among flax, with whose seeds it is often introduced from one country to another. It does not long propagate itself in Britain spontaneously. It is also found in the island of Cyprus, Tauria, and Siberia, &c. Myàgrum satìvum, Lin. spec. 894. Cav. icon. 1. p. 47. t. 66. Schkuhr. handb. 2. no. 1755. t. 178. Fl. dan. 1038. Alýssum satìvum, Scop. carn. no. 794. Smith, engl. bot. t. 1254. Camelìna sagittàta, Mœnch. meth. 255. Mœ'nchia satìva, Roth. germ. 1. p. 274. Flowers golden-yellow. A very variable plant.

Var. α, pilòsa (D. C. syst. 2. p. 516.) leaves entire, pilose, Myàgrum satìvum, Berg. phyt. icon.—Chabr. sciagr. 283. f. 4.—Mor. oxon. 2. p. 315. sect. 3. t. 21. f. 2.

Var. β, glabràta (D. C. syst. l. c.) leaves entire, smoothish.—Lind. alsa. 94. t. 1. This is the plant that is cultivated.

This plant is cultivated in many parts of Europe for the seed, from which oil is obtained by expression, which is used for medicinal, culinary, and œconomical purposes. For the method of its culture see Parmentier in Roz. cours. d. agric. vol. xi. p. 291. Bosc. dict. d'agric. 3. p. 45. Galliz. bot. agr. 3. p. 170.

Cultivated Gold of Pleasure. Fl. June. Britain. Pl. 1 foot.

3 C. DENTA'TA (Pers. ench. 2. p. 191.) pods roundish, pear-shaped, with 4 ribs, terminated by a longish style; leaves repand-toothed. ⊙. H. Native of Alsace, Spain, Tauria, &c. in cultivated fields. Pods nearly globose.

Var. α, dentàta (D. C. syst. 2. p. 516.) leaves smoothish, grossly-toothed or sinuated. Myàgrum dentàtum, Willd. phyt. 1. p. 9. no. 13. Myàgrum Bauhìni, Gmel. fl. bad. 3. p. 7. Mœ'nchia arvénsis, Bernh. Cochleària fœ'tida, Schkuhr. handb. 2. no. 1805. Myàgrum Alýssum, Mill. dict. no. 2.—J. Bauh. hist. 2. p. 893. icon.

Var. β, pinnatífida (D. C. syst. l. c.) leaves sinuately-pinnatifid, scabrous from scattered hairs. Myàgrum pinnatífidum, Ehrh. dec. p. 16. Camelìna pinnatífida, Horn. hort. hafn. 2. p. 598. Cochleària heterophýlla, Cav. Both plants are very like *C. satìva*, but the leaves are deeply toothed, not entire.

Toothed-leaved Gold of Pleasure. Fl. June, July. Clt. 1806. Pl. 1 foot.

4 C. microca'rpa (Andrz. cruc. in D. C. syst. 2. p. 517.) pods pear-shaped, with 2 ribs, terminated by a longish style (f. 46. *r.*); leaves lanceolate, denticulated, hispid. ⊙. H. Native of Podolia. Allied to *C. satìva α pilosa*, but differs in the fruit being one-half shorter and with 2 not 4 ribs. Deless. icon. sel. 2. t. 69.

Small-fruited Gold of Pleasure. Fl. Ju. July. Pl. 1 foot.

Sect. II. Pseudoli'num (*ψευδης, pseudes*, false, and *λινον, linon*, flax.) D. C. syst. 2. p. 517. prod. 1. p. 201. Silicles globose, not margined. Style filiform. Stigma capitate. Plants perennial. Leaves stem-clasping, bluntly auricled.

5 C. Barbareæfo'lia (D. C. syst. 2. p. 517.) pods globose; leaves oblong, pinnatifid, bluntly auricled at the base; stem villous at the base. ♃. H. Native of eastern Siberia in the province of Irkoutsk near Doroninsk, also of Eschcholz's Bay on the north-west coast of America. Deless. icon. sel. 2. t. 70.

Barbarea-leaved Gold of Pleasure. Fl. May, July. Clt. 1818. Pl. 1 to 1½ foot.

6 C. Austri'acum (R. Br. in hort. kew. ed. 2. vol. 4. p. 93.) pods globose; leaves oblong, serrate-toothed, clasping the stem at the base; stem smooth. ♃. H. Native of Austria in humid meadows about Vienna, also in Silesia and Tauria at the Tanais and the Volga. Myàgrum Austrìacum, Jacq. fl. austr. 2. p. 111. Schkuhr. handb. 2. no. 1756. t. 158. Nastúrtium Austrìacum, Crantz. austr. 1. p. 15. t. 2. f. 1, 2, 3. Myàgrum Crántzii, Vittm. sumn. pl. 4. p. 9. Stem branched, in wet places weak and elongated, but in dry places firm and short.

Austrian Gold of Pleasure. Fl. May, Ju. Clt. 1795. Pl. 1 ft.

Cult. Notwithstanding the ridiculously pompous English name of *Gold of Pleasure* which these plants bear, and which seems a satire on the articles of which it is composed, as yielding nothing but disappointment, they are not worth cultivating except in general collections. Both perennial and annual species can only be increased by seeds. They require no care.

LXIV. EUDE'MA (in honour of Eudemus of Rhodes, a pupil of Aristotle). Humb. et Bonpl. pl. Æquin. 2. p. 133. t. 123 and 124. D. C. syst. 2. p. 518. prod. 1. p. 202.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle ovate, with many-seeded cells and concave valves, with the dissepiment perforated at the top. Style filiform. Seeds oval. Cotyledons (from the figure) incumbent. Small tufted perennial herbs, with crowded, ciliated, blunt small leaves, and axillary, stalked, solitary white flowers.

1 E. rupe'stris (H. et B. pl. æquin. 2. p. 133. t. 123.) leaves linear; calyx shorter than the corolla; cells of pods 8 or 10-seeded. ♃. G. Native of South America in mountains near Quito on high and cold rocks. Dràba Humbóldtii, Desv. jour. bot. 3. p. 171. Root woody, fusiform, branched. Flowers white. Leaves smooth, not ciliated.

Rock Eudema. Pl. 2 or 3 inches.

2 E. nubi'gena (H. et B. pl. æquin. 2. p. 136. t. 124.) leaves spatulate; calyx longer than the corolla; cells of pods 4-seeded. ♃. G. Native of the Andes about Quito on high rocks. Root elongated, fusiform, almost simple, much longer than the herb. Flowers white. Leaves ciliated.

Cloud Eudema. Pl. 1 inch.

Cult. As there has not yet been a species of *Eudèma* introduced into Britain, it is difficult to say what method of cultivation would suit them best, but we would recommend their being kept in pots which should be well drained with potsherds, and planted in a mixture of sand, loam and peat, and placed in a green-house or frame, so that they may be protected from the frost. It is evident from the nature of the plants that they must be either increased by seeds or cuttings; but they are not worth cultivating except in botanic gardens.

LXV. NE'SLIA (meaning not explained.) Desv. journ. 3. p. 162 and 163. D. C. syst. 2. p. 519. prod. 1. p. 202.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle almost globose, indehiscent, with concave valves, 1-seeded and 1-celled from the want of a dissepiment. Seeds somewhat globose, pendulous. Cotyledons ovate, thick, incumbent. An annual erect herb, with somewhat the habit of *Camelìna satìva*. Stems round, sparingly branched, whitish, pubescent, or a little hispid at the base. Cauline leaves alternate, sagittate, stem-clasping, oblong-lanceolate, entire. Racemes terminal, elongated. Pedicels filiform, bractless. Flowers small, yellow.

1 N. panicula'ta (Desv. l. c.) ⊙. H. Native of corn-fields and sandy places almost throughout the whole of Europe, from Turkey to Sweden, and from Spain to Petersburgh, also in Iberia about Tiflis; in the south of Tauria and in Siberia between Zmeof and the Irtish. Myàgrum paniculàtum, Lin. spec. 894. Œder. Fl. dan. t. 204. Schkuhr. handb. 2. no. 1757. t. 178. Cochleària sagittàta, Crantz. cruc. p. 99. Nastúrtium paniculàtum, Crantz. austr. p. 15. Crámbe paniculàta, All. ped. 1. p. 256. Vogèlia sagittàta, Medik. phl. gatt. t. 1. f. 6. Rapístrum paniculàtum, Gært. fruct. 2. p. 285. t. 141. Bùnias paniculàta, Lher. cak. diss. ined. p. 9. Alýssum paniculàtum, Willd. enum. 2. p. 671. Vogèlia paniculàta, Horn. hort. hafn. 2. p. 594.

Panicled Neslia. Fl. July, Aug. Clt. 1683. Pl. 1½ foot.

Cult. This plant is not worth cultivating except in botanic gardens. It only requires to be sown in the open border, and treated like other hardy annuals.

LXVI. EUTRE'MA (from *ευ, eu*, well; *τρημα, trema*, an orifice; dissepiment incomplete.) R. Br. in app. Parry's voy. append. p. 9. t. A.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle short, 2-edged, with keeled valves, an incomplete dissepiment, and many-seeded cells. Plant with the habit of *Bràya*. Root thick, fusiform, from which spring numerous simple few-leaved stems. Radical leaves stalked, ovate-lanceolate, quite entire or a little toothed, thickish, the uppermost cauline ones sessile. Corymbs dense, 7-8-flowered. Flowers white; anthers yellow. Dissepiment complete at the base and apex, but not so in the middle. Perhaps the genus *Bràya* ought to have been inserted here.

1 E. Edwa'rdsii (R. Br. l. c.) ♃. H. Native of Melville Island in the neighbourhood of Winter Harbour. Plant smooth.

Edwards's Eutrema. Fl. April, May. Pl. 2 to 3 inches.

Cult. This plant should be grown in small pots filled with a mixture of peat, loam and sand, well drained with potsherds at the bottom. It should be treated as other alpine plants. It can only be propagated by seeds.

LXVII. ORE'AS (from *ορειας, oreias*, nymph of the mountains, in allusion to the habitat of the plant.) Cham. et Schlecht. Linnæa 1. p. 29.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle lanceolate, compressed, 1-celled, from the dissepiment having vanished; valves flattish, with a nerve running through the middle. Seeds numerous, egg-shaped, hanging from the upper part of the placentarious nerve by long umbical funicles.—A small alpine perennial herb, with the habit of *Cardámine bellidifòlia*. Leaves radical, stalked, smooth. Bracteas crowded under the pedicels, appearing like an involucre. Flowers in short racemes, white, sometimes veined with dark-purple. Calyx loose, equal at the base. Petals entire, unquiculate, equal. Filaments equal, toothless. Style very short, crowned by a capitate stigma. This genus is sufficiently distinct, in the dissepiment being absent, as well as the glands.

1 O. involucra'ta (Cham. l. c. t. 1.) ♃. H. Native of the island of Unalaschka on the tops of the mountains among stones.

Involucrated Oreas. Pl. ½ to 1 inch.

Cult. This plant should be grown in small pots, in a mixture of peat and sand, and treated as other alpine plants; it can be propagated by dividing the plants at the roots or by seeds. Not worth cultivating except in general collections.

Tribe IX.

LEPIDI'NEÆ (plants agreeing in character with Lepídium,) or NOTORHI'ZEÆ (see sub-order II.) -ANGUSTISE'PTÆ (*Angustus* narrow *septum*, a partition; dissepiment narrow.) D. C. syst. 2. p. 521. prod. 1. p. 202. Silicle with a very narrow dissepiment, and with keeled (f. 47. *a. b.*) or very concave valves. Seeds few or solitary in each cells (f. 47. *a. b.*), ovate, not margined. Cotyledons flat, incumbent, parallel with the dissepiment (f. 45. *j. i.*).

LXVIII. CAPSE'LLA (a diminutive of *Capsula*, a capsule.) Vent. tabl. 3. p. 110. D. C. syst. 2. p. 383. prod. 1. p. 177.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle triangular, cuneated at the base, with navicular wingless valves; cells many-seeded. An annual herb, very variable in habit. Radical leaves rosulate, entire, toothed, cut or variously lobed. Stem leaves few, erect, oblong, sagittate at the base. Racemes terminal, elongated; pedicels filiform, bractless, much longer than the pods. Flowers small, white.

1 C. bu'rsa-pasto'ris (Mœnch. meth. 271.) ⊙. H. Native throughout the world in waste and cultivated land, and by way-sides every where; very common in Britain. Thláspi bùrsa-pastòris, Lin. spec. 903. Smith, eng. bot. t. 1485. Œder. fl. dan. t. 729. Curt. fl. lond. 1. t. 50. Schkuhr. handb. 2. no. 1797. t. 180.

The herb, according to De Candolle, is much less acrid than the rest of the order, and it is rather glutinous to the taste.

Var. β, mìnor (D. C. syst. 2. p. 384.) Bursa-pastòris mìnor, Tab. icon. 197. Plant small.

Var. γ, integrifòlia (D. C. l. c.) Mor. oxon. 2. p. 104. sect. 3. t. 20. f. 1. Leaves entire.

Var. δ, coronopifòlia (D. C. l. c.)—Bauh. pin. 108.

Var. ε, apétala (D. C. l. c.) Opiz. in bot. zeit. 1821. p. 440. Flowers petalless, decandrous. This plant is rather a monster than a variety.

Shepherd's-Purse. Fl. March, Nov. Britain. Pl. ½ to 1 ft.

Cult. The *Shepherd's-Purse* is well known as a very troublesome weed in gardens, but it is easily kept under by hoeing the ground in dry hot weather, at or before it comes into flower, but if suffered to seed it will become exceedingly troublesome.

LXIX. SENEBIE'RA (in honour of John de Senebier of Geneva, a vegetable physiologist.) Poir. dict. 7. p. 75. D. C. syst. 2. p. 521. prod. 1. p. 202.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle cuneated, didymous, with ventricose or somewhat keeled unopening 1-seeded valves. Seeds sub-globose, triquetrous. Cotyledons incumbent, linear. Annual or biennial, many-stemmed, smooth or somewhat villous, branched, usually trailing herbs. Leaves alternate, sometimes linear entire, sometimes deeply serrated, sometimes pinnate-lobed, with the lobes entire or toothed. Racemes short, opposite the leaves; pedicels bractless. Flowers small, white.

Sect. I. Nasturtio'lum (altered from Nastúrtium). D. C. syst. 2. p. 522. prod. 1. p. 202. Medik. gen. pl. p. 82. t. 2. f. 21. from Ust. new. ann. 2. p. 45. Silicles emarginate at the top. Dissepiment shorter than the globose valves.

1 S. integrifo'lia (D. C. soc. hist. nat. par. ann. 7. p. 144. t. 8.) leaves linear, entire, narrowed at the base; pods bi-globose, spongy, areolate. ⊙. H. Native of Madagascar. Corónopus integrifòlia, Spreng. syst. 2. p. 858. Seeds roundish, brown.

Entire-leaved Wart-Cress. Pl. ½ foot.

2 S. linoi'des (D. C. syst. 2. p. 522.) leaves linear, acute, entire; pods rather compressed, biscutate, very minutely areolate, dotted. ⊙. H. Native of the Cape of Good Hope. Lepídium linoìdes, Thunb. prod. 107.? Corónopus linoìdes, Spreng. syst. 2. p. 852. Having the leaves of *S. integrifòlia*, and the pods of *S. pinnatífida*. Plant branched, erect.

Flax-like Wart-Cress. Pl. ½ foot.

3 S. Helenia'na (D. C. syst. 2. p. 523.) lower leaves pinnate-parted; lobes cut; upper leaves linear or divided into few lobes; pods bi-globose, somewhat areolate. ⊙. H. Native of the island of St. Helena on calcareous mountains at Sandy Bay. Corónopus Heleniàna, Spreng. syst. 2. p. 885. Plant much branched, decumbent, somewhat tufted.

St. Helena Wart-Cress. Pl. 3 or 5 inches long.

4 S. pectina'ta (D. C. syst. 2. p. 523.) leaves pinnate-parted; lobes linear, acuminated, entire; pods compressed, twin, netted with transverse nerves. ⊙. H. Native of South America in Quito near Chillo, at the height of 4053 feet above the sea. A procumbent plant, with slender, rather hairy branches, very like *S. pinnatífida*. Pods emarginate at both ends.

Pectinate-leaved Wart-Cress. Pl. 1 foot long, procumbent.

5 S. pinnati'fida (D. C. mem. soc. hist. nat. par. ann. 7. p. 144. t. 9.) leaves pinnate-lobed; lobes oblong, toothed or somewhat cut; pods compressed, twin, reticulated. ⊙. H. Native nearly throughout the whole world in waste ground, and by way-sides, especially near the sea, plentiful in Britain. Lepídium A'nglicum, Huds. 280. Lepídium dídymum, Lin. mant. 92. Lepídium prostràtum, Savi. in Santi. viag. 2. p. 18. t. 1. Corónopus dídyma, Smith, fl. brit. 2. p. 691. engl. bot. 248. Senebièra supìna, Thor. chl. land. 275. Senebièra dídyma, Pers. ench. 2. p. 185. Corónopus pinnàtus, Horn. hafn. 599. Petals 4, oblong, sometimes wanting. Plant diffuse or procumbent.

Var. β, incìsa (D. C. syst. 2. p. 524.) lobes of leaves 3-4-parted. ⊙. H. Native of Pennsylvania and Carolina along the banks of the Mississipi and the Missouri. In Brazil about Monte Video, also of Buenos Ayres. Lepídium Bonariénse, Mill. dict. no. 13. Biscutélla apétala, Walt. car. 174. Cochleària humifùsa, Mich. fl. bor. amer. 2. p. 27. Corónopus dídyma, Nutt. gen. amer. 2. p. 64. Senebièra incìsa, Willd. enum. 2. p. 668. Corónopus incìsa, Horn. hafn. 599.

Pinnatifid-leaved Wart-Cress. Fl. Jul. Sept. Brit. Pl. 1 ft. long.

Sect. II. Cara'ra (probably from καρα, *kara*, the peak of a mountain; habitat of plants). D. C. syst. 2. p. 524. prod. 1. p. 203. Silicles not emarginate at the top, somewhat compressed on both sides, with compressed valves, which are crested or wrinkled on their back.

6 S. coro'nopus (Poir. dict. 7. p. 76.) leaves pinnate-lobed; lobes entire, toothed, or pinnatifid; pods acutish, compressed, with the valves crested on their back. ⊙. H. Native of waste ground, and by way-sides on calcareous and sandy soils, almost throughout the whole of Europe, Russia perhaps excepted; also in the Canary islands and North America. Cochleària Corónopus, Lin. spec. 904. Oed. fl. dan. t. 202. Schkuhr. handb. 2. no. 1802. t. 181. Corónopus Ruéllii, All. ped. no. 934. Gært. fruct. 2. p. 293. t. 242. Lam. ill. t. 558. Smith, engl. bot. t. 1660. Caràra Corónopus, Medik. in Ust. new. ann. 2. p. 38. This plant has got about 20 other synonymous names, but they have now become perfectly obsolete. Sepals roundish, with white membranous margins. Stems spreading, quite flat to the ground. This plant was formerly gathered and used as a salad; but has since been deservedly neglected, the whole herb being nauseously acrid and fetid, and must require much boiling to render it eatable.

Common or *Star* Wart-Cress. Fl. July, Sept. Britain. Pl. trailing.

7 S. serra'ta (Poir. dict. 7. p. 76.) leaves oblong, deeply serrated; pods compressed, rough. ⊙? H? Native of Brazil about Monte Video, where it flowers in November. Corónopus serràtus, Desv. journ. bot. 3. p. 163. Corónopus myricæfòlia, Smith, herb. Flowers very small. Pods compressed, somewhat orbicular at the base, with rough, glabrous reticulated valves. Stems branched, procumbent, pubescent, smooth at the top. Deless. icon. sel. 2. t. 71.

Saw-leaved Wart-Cress. Fl. Nov. Pl. 1 foot long.

Sect. III. Cotyli'scus (from κοτυλη, *kotyle*, a hollow; valves of silicles concave). D. C. syst. 2. p. 526. prod. 1. p. 203. Silicles not crested on the back, not emarginate at the top, hence they are concave or nearly flat.

8 S. Nilo'tica (D. C. syst. 2. p. 527.) radical leaves pinnate-parted; lobes deeply-serrated; upper leaves almost entire; pods compressed, rather boat-shaped. ⊙. H. Native of the islands in the Nile in Lower Egypt. Cochleària Nilótica, Delile ill. fl. ægyp. p. 19. descr. p. 101. t. 34. f. 2. Cotylíscus Niloticus, Desv. journ. bot. 3. p. 164. and 175. t. 25. f. 13. Corónopus Niloticus, Spreng. syst. 2. p. 853. Herb smooth. Stems erect, lower branches very long and spreading. Pods reniform, pointed with the sessile stigma. This plant is eaten as a salad in Egypt.

Nile Wart-Cress. Pl. 1 to 2 feet.

Cult. As these plants possess no beauty, they are not worth cultivating, except in botanical gardens. They only require to be sown in the open ground, in any kind of soil.

LXX. LEPI'DIUM (from λεπις λεπιδος, *lepis lepidos*, a scale; in allusion to the form of the pods, which resemble little scales). R. Br. in hort. kew. ed. 2. vol. 4. p. 85. D. C. syst. 2. p. 527. prod. 1. p. 203.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle ovate, or somewhat cordate, dehiscent, with keeled (f. 47. *a.*) or rarely ventricose valves, and 1-seeded cells. Seeds somewhat triquetrous or compressed. Herbs or small sub-shrubs. Stems round, branched. Leaves simple or variously cut. Racemes terminal, erect, elongating as they grow; pedicels filiform, bractless. Flowers small, white.

Sect. I. Carda'ria (from καρδια, *kardia*, the heart; shape of silicles). D. C. syst. 2. p. 528. prod. 1. p. 203. Cardiolèpis, Wallr. Sched. 340. Silicle ovate-cordate, with somewhat turgid, wingless valves. Style long, filiform.

1 L. Dra'ba (Lin. spec. ed. 1. p. 645.) pods somewhat turgid, cordate, entire at the top, terminated by the style; leaves stem-clasping, lanceolate, toothed. ⊙. H. Native in cultivated fields, especially in the south of Europe, from Spain to Tauria, and from Greece to Paris, &c. Cochleària Dràba, Lin. spec. ed. 2. p. 904. Jacq. austr. t. 315. Nastúrtium Dràba, Crantz. austr. 91. Cardària Dràba, Desv. journ. bot. 3. p. 163. Dràba ruderàlis, Baumg. transyl. 2. p. 233. Jundzíllia Dràba, Andrz. cruc. ined. Stem solitary, erect, pubescent, corymbosely-branched at the top. Leaves greyish from down, or smooth. Cotyledons obovate-oblong, thick.

Whitlow Pepperwort. Fl. May, Aug. Clt. 1596. Pl. 1 foot.

Sect. II. Ellipsa'ria (from *ellipsis*, an *ellipsis*; shape of silicles). D. C. syst. 2. p. 530. prod. 1. p. 203. Silicle elliptical, with keeled wingless valves. Style long, filiform.

2 L. Chalepe'nse (Lin. amœn. 4. p. 321. spec. ed. 2. p. 898.) pods elliptical, twice the length of pedicels; style filiform; leaves lanceolate, toothed, with acute, stem-clasping auricles. ⊙. H. Native of the Levant in fields about Aleppo.

Var. α, glabràtum (D. C. syst. 2. p. 530.) smooth; leaves acutely toothed, from the base to beyond the middle; racemes rather loose.—Mor. oxon. 2. p. 314. sect. 3. t. 25. the second figure in the lower range.

Var. β, pubéscens (D. C. syst. l. c.) pubescent; fructiferous racemes more loose and with longer pedicels. Native of Syria near Damascus.

Var. γ, canéscens (D. C. syst. l. c.) plant much more villous and grey than the last variety, and the racemes are shorter. Native of Mount Lebanon near Abra.

Aleppo Pepperwort. Fl. May, Jul. Clt. 1798. Pl. 1 foot.

3 L. oxy'otum (D. C. syst. 2. p. 530.) pods elliptical, puberulous, rather longer than the pedicels; style filiform; leaves oblong, somewhat toothed, sub-hastate, with acute auricles at the base. ⊙? H. Native of Syria. Stems pubescent. Leaves covered with scattered hairs. Petals length of calyx, with their claws filiform. Seeds ovate, brown.

Sharp-eared-leaved Pepperwort. Pl. $\frac{1}{4}$ foot.

4 L. glastifo'lium (Desf. atl. 2. p. 66. t. 147.) pods elliptical, smooth, shorter than the pedicels; style filiform; leaves oblong, bluntly toothed, with blunt, stem-clasping auricles. ⊙? H. Native of Algiers in shady parts of mountains. Thláspi glastifòlium, Poir. dict. 7. p. 538. Lèpia glastifòlia, Desv. jour. bot. 3. p. 166. Stems branched at the top, erect, pubescent from short hairs. Uppermost leaves quite entire. Petals obovate, double the length of the calyx.

Woad-leaved Pepperwort. Pl. 1 to 2 feet.

5 L. amplexicau'le (Willd. spec. 3. p. 436.) pods roundish, terminated by the short style; leaves undivided, oblong-lanceolate, sagittate, sessile, toothed at the top. ♃. H. Native of Siberia. Stems smooth, furnished with branches from the base, which rise the height of the stem. Flowers and silicles the same as those of *L. latifòlium.*

Stem-clasping-leaved Pepperwort. Pl. 1 foot.

Sect. III. Bradypi'ptum (from βραδυς, *bradys*, late, and πιπτω, *pipto*, to fall off; calyx almost permanent.) D. C. syst. 2. p. 531. prod. 1. p. 204. Silicle elliptical, with keeled valves. Style short. Calyx permanent. Stem leaves neither stem-clasping nor auricled.

6 L. cæspito'sum (Desv. journ. bot. 3. p. 165. and 178.) pods ovate, with a narrow notch at the apex; style very short; calyx permanent; leaves linear, entire, permanent. ♃. H. Native of Armenia. Stems pubescent, sparingly branched. Radical leaves tufted, pilose, glaucous. Sepals oval-oblong, with membranous margins, permanent, at length reflexed.

Tufted-leaved Pepperwort. Pl. $\frac{1}{4}$ foot.

7 L. coronopifo'lium (Fisch. in cat. hort. gor. 1808. p. 79.) pods elliptical, entire, somewhat puberulous; terminated by a very short style; calyx almost permanent; cauline leaves linear, very entire, radical ones pinnate-lobed. ♃. H. Native of Siberia near Sarepta at the south Volga. L. laciniàtum, Willd. herb. from Stev. obs. ined. The whole of the herb is very smooth, except the pods. Stem erect, much branched, flexuous.

Buck-horn-leaved Pepperwort. Fl. May, July. Clt. 1823. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

8 L.? Humbo'ldtii (D. C. syst. 2. p. 532.) pods ovate, emarginate, pointed by the short style; calyx permanent; radical leaves bipinnate, cauline ones pinnatifid. Native of arid places near Chillo in Quito, at the height of 4020 feet. Herb branched, erect, rarely procumbent. Flowers minute, pedicelled. Petals a little shorter than the calyx. Senebièra dùbia. H. B. et Kth. nov. spec. amer. 5. p. 76.

Humboldt's Pepperwort. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

Sect. IV. Ca'rdamon (καρδαμον, *kardamon*, water-cress; hot

taste of plants). D. C. syst. 2. p. 533. prod. 1. p. 204. Silicle somewhat orbicular, emarginate, with navicular valves, which are winged on their back (f. 47. *a*.) Cotyledons parted.

9 L. sati'vum (Lin. spec. 899.) pods orbicular, winged; leaves variously cut and divided; branches not spiny. ⊙. H. Native of Persia and the island of Cyprus, in corn-fields. Smith, fl. græc. t. 616. Bois. fl. eur. t. 440. f. 2. Schkuhr. handb. 2. no. 1782. t. 180. Thláspi satìvum, Crantz. austr. 1. p. 21. Lèpia satìva, Desv. journ. bot. 3. p. 165. Herb erect, branched, smooth, somewhat glaucous.

Var. β, críspum (D. C. syst. 2. p. 534.) leaves much cut and curled. Nastúrtium críspum, J. Bauh. hist. 2. p. 913. f. 1.—Mor. oxon. 2. p. 301. sect. 3. t. 19. f. 3.

Var. γ, latifòlium (D. C. l. c.) leaves flat, little divided.—Mor. oxon. 2. p. 300. sect. 3. t. 19. f. 2.

Garden-cress (Eng.), *Cresson* (Fr.), *Gemeine kresse* (Germ.), *Creseione* (Ital.).

"This is cultivated in gardens for the young leaves, which are used in salads, and have a peculiarly warm and grateful relish. It ranks among gardeners as the principal of small salads. The varieties are as follows, viz. 1. The common plain-leaved; principally cultivated. 2. The curled-leaved, var. β, above, is equally good as a salad, and preferable as a garnish. The broad-leaved var. γ above, is less cultivated as a salad, but grown in fields for rearing young turkeys, &c.

"All the varieties are raised from seed, of which one ounce, or one-eighth of a pint, will suffice for a bed four feet by four feet. Cress should be raised three or four times every month, as it may be in demand to have crops delicately young in succession. For culture in the open garden begin in the first, second, or third week in March, as a forward spring may bring mild weather or otherwise; allot some warm situation for the early spring sowings, and if the weather take a cold turn, either put on a spare frame or cover with matting between sunset and sunrise. When spring is confirmed, sow in any open compartment. At the beginning of summer the same; but in hot dry weather either sow in a shady border, or if the situation be open, shade with mats in the middle of the day. For autumn sowings, when cold weather is approaching, allot some warm border and give occasional protection. When crops are in demand throughout winter, either sow in a moderate hot-bed, or in cradles to be placed in a stove; pans filled with rotten tan are to be preferred to pots or boxes with mould. From the last fortnight of October till the 1st of March, it will be almost fruitless to sow in the open garden; but a terrace sloping south under a frame, may be used at the decline of the year and most early part of spring, as the intermediate step between the open garden and hot-bed, if more within the means at command. During this interval, some market-gardeners sow it just within the glasses which cover larger plants." "The cress is often raised on porous earthenware vessels of a conical form, having small gutters on the sides for retaining the seeds. These are called pyramids; they are somewhat ornamental in winter, and afford repeated gatherings.

"Having allotted a fine piece of mellow soil to receive the seed, dig the surface, and rake it finally preparatory to sowing, which mostly perform in small, flat, shallow drills, four, five, or six inches asunder. Sow the seed very thick, and earth over very lightly, or but just thinly cover. Give occasional waterings in dry seasons."

"To gather cress in perfection, cut them while moderately young, either clean to the root, or only the tops of advanced plants. These last will shoot again for future gatherings, but the leaves will be hotter, and not so mild or tender as those of younger plants."

To save seed.—Either sow a portion in the spring for that purpose, or leave some rows of any overgrown old crop in April or May. The plants will yield seed in autumn.

Cultivated or Common Garden Cress. Fl. June, July. Clt. 1548. Pl. 1 to 1½ foot.

10 L. spine'scens (D. C. syst. 2. p. 534.) pods oval, winged, emarginate (f. 47. *a*.); leaves cut at the top; racemes spinescent at the top. ⊙? H. Native of Syria about Damascus. A smooth, branched herb. Cotyledons as in *L. oleràceum* incumbent, 3-parted. Stems whitish. Deless. icon. sel. 2. t. 72. Fructiferous racemes spiny at the top.

Spinescent Cress. Fl. June, July. Clt. 1820. Pl. 1 to 1½ foot.

Sect. V. Le'pia (from λεπις, *lepis*, a scale; form of silicles). D. C. syst. 2. p. 534. prod. 1. p. 204. Silicle somewhat orbicular, emarginate, with navicular, winged valves; wings adhering to the style; style very short. Cotyledons entire.

11 L. campe'stre (R. Br. in hort. kew. ed. 2. vol. 4. p. 465.) pods ovate, winged, emarginate, scaly; cauline leaves sagittate, toothed. ⊙. H. Native of cultivated fields and by way-sides in Europe from Spain to Sweden, from England to Turkey, and in Tauria; plentiful in Britain. Thláspi campéstre, Lin. spec. 902. Vahl. fl. dan. t. 1221. Curt. lond. 5. t. 45. Smith, engl. bot. t. 1385. Schkuhr. handb. 2. no. 1793. t. 180. Thláspi hirsùtum, var. α. Lam. fl. fr. ed. 1. vol. 2. p. 465. Thláspi montànum, Poir. dict. 7. p. 536. Lèpia campéstris, Desv. journ. bot. 3. p. 165. The whole herb is grey from small, simple, crowded hairs. Stem erect, simple at the base and branched at the top.

Var. β, subglàbrum (D. C. syst. 2. p. 335.) leaves smooth; pods elliptical.—Mor. oxon. 2. p. 293. sect. 3. t. 17. f. 13. Pet. brit. t. 50. f. 8. Native of Spain in the mountains of Leon, also in England in cultivated fields near Warrington.

Var. γ, hírtum (Huds. ang. 281.) plant rather hairy. Native of England in corn-fields near Bath.

Field Mithridate Pepperwort. Fl. July. Britain. Pl. ½ to ¾ ft.

12 L. hi'rtum (Smith, compen. ed. 3. p. 98. engl. bot. t. 1803.) pods ovate, winged, emarginate, hairy; cauline leaves sagittate, villous, almost entire. ♃. or ♂. H. Native in fields and hilly ground in many parts of the south of Europe, particularly in Spain about Madrid, and in Valencia; in the olive region of France; in Italy, south of Austria, Transylvania, and Sicily; in Britain, in mountainous situations in Wales and elsewhere; Scotland, in Perthshire near the seat of the Earl of Kinnoul, and by the river Earn; in Angusshire between Brichen and Montrose; at Browston in Suffolk. Thláspi hírtum, Lin. spec. 901. Medik. nov. gen. t. 2. f. 18. Thláspi hirsùtum β, Lam. fl. fr. 2. p. 465. Lèpia hírta, Desv. journ. bot. 3. p. 166. Lèpia Bonnaniàna, Presl. ex Spreng. Very like the preceding species.

Hairy Mithridate Pepperwort. Fl. June, July. Britain. Pl. ½ to ¾ foot.

13 L. leioca'rpum (D. C. syst. 2. p. 536.) pods oval, winged, emarginate, smooth, boat-shaped. ⊙? H. Native of mount Lebanon. Flowers and cauline leaves unknown. Seed like those of *L. hírtum*. Radical leaves lanceolate.

Smooth-podded Mithridate Pepperwort. Pl. ½ to ¾ foot.

14 L. rotu'ndum (D. C. syst. 2. p. 537.) pods oval, winged, emarginate, smooth; cauline leaves lanceolate-linear, somewhat fleshy, smooth.—Native of New Holland at King George's Sound. Lèpia rotúnda, Desv. journ. bot. 3. p. 166 and 181. Stem slender, branched from the base. Flowers unknown. Seeds large, brown. Cotyledons thick.

Round Mithridate Pepperwort. Fl. June, July. Pl. ½ foot.

15 L. spino'sum (Lin. mant. 253.) pods oblong, winged, emarginate, somewhat 2-horned, smooth; radical leaves pinnate; lobes cut. ⊙. H. Native of the Levant. Ard. specim. 2. p. 34. t. 16. Capsélla spinòsa, Medik. in Ust. new. ann. 2. p. 46.

Thláspi spinòsum, Poir. dict. 7. p. 545. Thláspi bispinòsum, Horn. hort. hafn. 2. p. 604. Herb smooth, erect, branched; lower cauline leaves irregularly-lobed, upper ones linear-lanceolate, entire. Flowers small. Margins of sepals white.

Spiny-podded Mithridate Pepperwort. Fl. April, Sep. Clt. 1787. Pl. 1 ft.

SECT. VI. DILE'PTIUM (a name given by Rafinsque, the meaning of which is not explained by him.) D. C. syst. 2. p. 538. prod. 1. p. 205. Silicle almost elliptical, somewhat emarginate at the top, with keeled wingless valves. Style very short. Flowers very small, sometimes 2 or 4-androus, rarely apetalous.

16 L. VIRGI'NICUM (Lin. spec. 900.) pods orbicular, emarginate, shorter than the pedicels; flowers with 2 or 4 stamens; cauline leaves linear lanceolate, deeply serrated, smooth. ⊙. H. Native of waste land and gravelly places in North America, from New York to Carolina, also at Nootka Sound; in Monte Video, Cuba, Tobago, Jamaica, and St. Domingo. L. Ibèris, Schkuhr. handb. 2. p. 222. t. 180. Thláspi Virginiànum, Poir. dict. 7. p. 544. L. triándra, Stok. bot. mat. med. 3. p. 426. L. Pollíchii, Roth. fl. germ. 2. t. 91? Thláspi Virgínicum, Cav. præl. no. 935. Horn. hafn. 605. Herb smooth, branched; lower leaves pinnate-lobed. Petals obovate, blunt. Seeds oval, compressed. Cotyledons linear.

Virginian Pepperwort. Fl. June, July. Clt. 1713. Pl. 1 foot.

17 L. SPICA'TUM (Desv. journ. bot. 3. p. 164 and 178.) pods orbicular, emarginate, somewhat longer than the pedicels; leaves linear, entire, smooth. ⊙. H. Native of the Straits of Magellan. An erect smooth herb, very like *L. Virgínicum*. Leaves pressed to the stem. Pods as if they were imbricated.

Spicate-podded Pepperwort. Pl. ½ to 1 foot.

18 L. MENZI'ESII (D. C. syst. 2. p. 539.) pods orbicular, somewhat emarginate; leaves pubescent, radical ones pinnate-parted, lobes cut; upper leaves linear entire. ♃? H. Native of the western coast of North America. Allied to *L. Virgínicum*, but differing in the leaves being pubescent, not smooth. Stems erect, branched at the top.

Menzies's Pepperwort. Pl. 3 or 4 inches.

19 L. SUBULA'TUM (Lin. spec. 899.) pods ovate, somewhat emarginate; leaves subulate, entire; stem suffruticose. ♄. H. Native of Spain on gypsaceous hills. Asso syn. arrag. p. 83. t. 6. f. 3. Thláspi subulàtum, Cav. præl. no. 935. Stems many, branched, tufted, covered with fine down or smooth. Calyx white, spreading. Petals obovate.

Subulate-leaved Pepperwort. Fl. July, Aug. Clt. 1739. Pl. ½ to ¾ foot.

20 L. RUDERA'LE (Lin. spec. 900.) pods ovate, emarginate, spreading, shorter than the pedicels; leaves smooth, radical ones pinnate-lobed, those of the branches are linear and entire; flowers diandrous, petalless. ⊙. H. Native of waste grounds and by way-sides throughout the whole of Europe, also in Tauria, Siberia, and Dauria; in New Holland but probably introduced; in Brasil; in England, especially near the sea-side, in a muddy or calcareous soil. At Yarmouth, Cley, and Lynn, Norfolk, plentifully; at Truro, Cornwall, and Malden, Essex; below Bristol; by the side of the Severn above Worcester. Œder. fl. dan. t. 184. Schkuhr. handb. 2. no. 1786. t. 180. Smith, engl. bot. t. 1595. Nastúrtium ruderàle, Scop. carn. ed. 2. p. 801. Ibèris ruderàlis, Crantz. austr. 21. Thláspi ruderàle, All. ped. 917. Senckenbérgia ruderàlis, Fl. wett. 2. p. 213. Thláspi tenuifòlium, Lam. fl. fr. 2. p. 467. Herb smooth, erect, much branched, glaucous, fetid, and pungent when bruised.

Rubbish Pepperwort. Fl. June, July. Britain. Pl. ½ to 1 ft.

21 L. INCI'SUM (Roth. nov. cat. 1. p. 224.) pods orbiculate, deeply emarginate; flowers diandrous; lower leaves oblong, lyrately pinnate-lobed, middle ones broad-lanceolate, deeply-toothed, upper ones linear. ⊙. H. Native of waste land and by way-sides in Siberia, Caucasus, and Tauria. Thláspi apétalum, Poir. dict. 7. p. 547. Very like *L. ruderàle*, but differing in the upper leaves being linear-lanceolate, broader, and a little more glaucous, and in the pods being a little larger.

Cut-leaved Pepperwort. Fl. May, Ju. Clt. 1824. Pl. ⅙ to ¾ ft.

22 L. HUMIFU'SUM (Requien ex Spreng. syst. app. p. 241.) stem prostrate, pubescent at the top; lower leaves lyrate, upper ones sagittate, entire; petals thrice as long as calyx; silicles smooth. ⊙? H. Native of Corsica.

Trailing Pepperwort. Pl. trailing.

23 L. VESICA'RIUM (Lin. spec. 898.) pods elliptical, deeply emarginate; leaves pinnate; lobes linear; joints of stem inflated. ⊙. H. Native of arid, stony, or sterile places, and on old walls, in eastern Caucasus and Iberia, also of Persia; on old walls of the city of Casbin. Hill. veg. syst. 11. t. 41. f. 3.—Buxb. cent. 1. p. 17. t. 26. A smooth herb, with dichotomous branches. Seeds almost oblong-triquetrous.

Bladdery-jointed Pepperwort. Fl. April, Aug. Clt. 1820. Pl. 1 to 2 feet.

24 L. ANGULÒSUM (D. Urv. enum. no. 578.) pods ovate, somewhat emarginate; leaves all pinnate; segments deeply-toothed; stem very smooth, flexuous, angularly-furrowed. ⊙. H. Native of waste land about the city of Theodosia. Differs from *L. vesicàrium* in not having tumid joints, from *L. perfoliàtum* by the upper leaves not being perfoliate.

Angular-stemmed Pepperwort. Pl. ½ to 1 foot.

25 L. PERFOLIA'TUM (Lin. spec. 897.) pods elliptical, somewhat emarginate; lower leaves stalked, pinnate, with multifid lobes; upper leaves cordate, entire, stem-clasping. ⊙. H. Native of Spain, Austria, Transylvania, island of Scio, Syria, Persia, Tauria, &c. in uncultivated fields. Jacq. austr. t. 346. A variety of this plant, with larger fruit, was gathered near Tiflis in Tauria. A smooth herb, with the stems branched at the top, remarkable for the different forms of the leaves.

Perfoliate-leaved Pepperwort. Fl. April, June. Clt. 1640. Pl. ½ to ¾ foot.

26 L. CARDA'MINES (Lin. amœn. 4. p. 278.) pods oval, somewhat emarginate; leaves pinnate, with ovate, entire lobes, terminal lobe large and roundish. ♂. F. Native of Spain by way-sides about Madrid. Ard. specim. 1. p. 18. t. 19.—Lin. in act. stockh. 1755. t. 8 and 9. Thláspi Cardámines, Poir. dict. 7. p. 545. A smooth herb, with a woody root, somewhat pubescent in the racemes. Stems in the spontaneous plants diffuse, ascendant in the cultivated plants, erect. Petals obovate, hardly unquiculate. Pods and pedicels pubescent.

Cardamon Pepperwort or Spanish Cress. Fl. June, July. Clt. 1789. Pl. 1 to 2 feet.

27 L. DIVARICA'TUM (Hort. kew. ed. 1. vol. 2. p. 441.) pods oval, somewhat emarginate, approximate; lower leaves pinnate-parted, with divaricate acute lobes; those of the branches linear; stem much branched. ♄. G. Native of the Cape of Good Hope. Thláspi divaricàtum, Poir. dict. 7. p. 543. A smooth branched pale-green shrub.

Divaricated-branched Pepperwort. Fl. May, Aug. Clt. 1774. Pl. 1½ foot.

28 L. BONARIE'NSE (Lin. spec. 901.) pods orbicular, emarginate; flowers diandrous; leaves all pinnately-multifid, very minutely ciliated; stem smooth. ⊙. H. Native of Buenos Ayres and about Monte Video. Thláspi Bonariénse, Poir. dict. 7. p. 543. T. multífidum, Poir. dict. 7. p. 545. A smooth herb, with an acrid taste. Stem branched. Dill. elth. t. 286. f. 370.

Buenos Ayrean Pepperwort. Fl. May, Ju. Clt. 1732. Pl. 2 ft.

29 L. BIPINNATI'FIDUM (Desv. journ. bot. 3. p. 165 and 177.) pods oval, emarginate; leaves pinnate-parted, with the mid-rib

winged; lobes multifid; branches pubescent.—Native of South America, in Peru about Cheuchin. Stems branched. Leaves smooth. Pods smooth, one-half shorter than the pedicels.

Bipinnatifid-leaved Pepperwort. Pl. 1 to 2 feet.

30 L. CHICHICA'RA (Desv. journ. bot. 3. p. 165 and 179.) pods obovate, emarginate; leaves smooth, lower ones pinnatifid, with denticulated lobes; upper leaves ovate-oblong, equally toothed. ⊙. H. Native of Para in Brasil. Stems trailing, spreading, much branched. *Chichicara* is the name of the plant at Para.

Chichicara Pepperwort. Pl. trailing.

31 L. PUBE'SCENS (Desv. journ. bot. 3. p. 165 and 180.) pods retusely emarginate, winged; leaves smooth, pinnatifid; lobes linear, sparingly toothed; stem and pedicels villous.—Native of Para in Brazil. Stems prostrate, pubescent, branched. Leaves smooth. Margins of pods winged.

Pubescent-branched Pepperwort. Pl. prostrate.

32 L. IBEROI'DES (Desv. journ. bot. 3. p. 165 and 176.) pods elliptical, somewhat emarginate; leaves linear, lower ones toothed at the top. ⊙. H. Native of the Mauritius. Stems erect, smooth, branched; branches filiform. Pods rather shorter than the pedicels, with keeled wingless valves.

Candy-Tuft-like Pepperwort. Pl. 1 to 2 feet.

33 L. SUBDENTA'TUM (Burch. cat. geogr. pl. afri. austr. extra trop. no. 1299.) pods elliptical, bluntly emarginate; flowers diandrous; leaves oblong-lanceolate, narrowed at base and toothed at top, upper ones linear-entire. ♃. G. Native of the Cape of Good Hope on the bank of rivulets in Roggevelds-Karro. A smooth branched herb, somewhat shrubby at the base. Flowers probably apetalous.

Subdentate-leaved Pepperwort. Pl. 1 foot.

34 L. CUNEIFÒLIUM (D. C. syst. 2. p. 545.) pods oval-rhomboid, emarginate; leaves wedge-shaped, and entire at the base, obovate and acutely-serrated at the apex. ⊙. H. Native of New South Wales. Branches furnished with branchlets at the top. Sepals white. Racemes when in flower short.

Wedge-leaved Pepperwort. Fl. Ju. Aug. Clt. 1820. Pl. 1 ft.

35 L. HYSSOPIFÒLIUM (Desv. journ. bot. 3. p. 164 and 179.) pods oval, emarginate; stigma sessile, capitate; leaves linear-lanceolate, remotely-toothed, smooth. ⊙? H. Native of New Holland about Hawkesbury. Stem tall, smooth, branched; branches long, divaricate. Differing from *L. piscídium* in the leaves being toothed, and from *L. oleràceum* in the leaves being narrower, and not dilated at the top.

Hyssop-leaved Pepperwort. Fl. Ju.Jul. Clt.1820. Pl. 2 to 3 ft.

36 L. FOLIÒSUM (Desv. journ. bot. 3. p. 164 and 180.) pods oval-rhomboid, emarginate; style a little exserted; leaves oblong, blunt, crowded, coarsely toothed at the top. ⊙? H. Native of New Holland. A robust erect branched herb. Branches thickly beset with rather fleshy leaves. Pods double the size of those of *L. piscídium*.

Leafy Pepperwort. Fl.? Pl. 1 foot.

37 L. PISCI'DIUM (Forst. prod. no. 249.) pods oblong-obovate, emarginate; stigma exserted; leaves oval-oblong, toothed, backwards or very entire. ⊙. H. Native of the Society Islands and Sandwich islands. L. bidentàtum, Montin. nov. act. nat. cur. 6. p. 324. t. 5. *a*. Stems erect, smooth, branched at the top. This plant is used by the natives of the Society islands for the purpose of catching fish by inebriating them. It was used by the English voyagers as a salad, but it was found extremely pungent.

Fish-poison Pepperwort. Fl. Sept. Clt. 1779. Pl. 1 foot.

38 L. O-WAHIE'NSIS (Schlecht. et Cham. in Linnæa. 1. p. 32.) silicles orbicular, emarginate; stigma sessile, inclosed; leaves obovate, tapering into the petiole, coarsely serrated. ♃. H. Native of the Sandwich islands. This species differs from *L. piscídium* in the leaves being more serrated, and in the silicles being almost orbicular and profoundly emarginate, with the stigma inclosed, not elliptical, with the style exserted beyond the recess, as in that species. Flowers small, white.

O-Wahu Pepperwort. Pl. 1 foot.

39 L. NO'VÆ-HOLLA'NDIÆ (Desv. journ. bot. 3. p. 177.) pods oblong-rhomboid, truncate; leaves ovate-oblong, acute, entire or toothed at the top. ♄. G. Native of New Holland. Stems hard, woody at the base, much branched. Branches angular, smooth, or somewhat spiny. Leaves somewhat fleshy, smooth.

New Holland Pepperwort. Fl. Ju. Jul. Clt. 1819. Pl. 1 to 2 ft.

SECT. VII. LEPIDIA'STRUM (altered from *Lepídium*.) D. C. syst. 2. p. 547. prod. 1. p. 207. Pods somewhat elliptical, quite entire, with wingless keeled valves. Style very short.

40 L. OLERA'CEUM (Forst. prod. no. 248.) pods ovate, acutish; leaves smooth, elliptical-oblong, deeply serrated; upper ones entire, but rather serrated at the apex. ⊙. H. Native of New Zealand on the sea-shore. A smooth branched erectish herb. Stamens 4. This plant is a powerful anti-scorbutic, and is found of great service to the crews of ships visiting New Zealand. It resembles lettuce in taste, and acts as a moderate aperient.

Pot-herb Pepperwort. Fl. Sept. Clt. 1824. Pl. from 1 to 3 ft.

41 L. CRI'SPUM (Desv. journ. bot. 3. p. 165 and 176.) pods elliptically-rhomboid; stigma somewhat exserted; leaves obovate, toothed, with curled margins. ⊙? H. Native of New Holland at Bass Strait. Herb erect, branched, smooth. Branches angular. Leaves rather fleshy. Seeds rufous, about the size of those of *L. satìvum*.

Curled-leaved Pepperwort. Pl. 1 to 2 feet.

42 L. LYRA'TUM (Lin. spec. 899.) pods ovate, pointed with the style; lower leaves stalked, lyrately-pinnate; lobes deeply cut, terminal one large. ⊙. H. Native of Armenia near Mount Ararat. Stem erect, branched. Tourn. voy. 2. p. 339. icon.

Lyrate-leaved Pepperwort. Fl. June, July. Clt. 1759. Pl. 2 or 3 feet.

43 L. LATIFÒLIUM (Lin. spec. 899.) pods ovate, pointed with the stigma; leaves ovate-lanceolate, undivided, a little serrated, lower ones on long footstalks. ♃. H. Native of Europe, from Spain to Sweden, from England to Greece, also of Algiers; about Astracan; in Siberia in salt marshes and wet sandy shady places under cliffs, generally near the sea; in England in several parts of Essex and Yorkshire; below Sheringham cliffs, Norfolk. Fl. dan. t. 557. Smith, engl. bot. 182. The whole plant is very pungent, acrid, and ulcerating. Root creeping. Herb erect, smooth. Leaves broad, rather fleshy. The young leaves are sometimes eaten as a salad. It was formerly used in place of horse-radish. An infusion of it will vomit. Having a hot biting taste like pepper, and the leaves having been often used by country people to give a relish to their viands instead of pepper, it had the appellation of *Poor Man's Pepper*.

Broad-leaved Pepperwort. Fl. July. Britain. Pl. 2 to 3 feet.

44 L. CRASSIFÒLIUM (Walds. et Kit. hung. 1. p. 4. t. 4.) pods pointed by the stigma; leaves smooth, somewhat fleshy, entire, radical ones stalked, ovate, cauline ones sessile, sagittate. ♃. H. Native of salt-marshes, or dry and sterile places impregnated with salt, in Hungary near Eimstadt, &c.; in Tauria at the Bosphorus; in the island of Taman; in the Kuman steppe; near the rivers Volga and Kuma, &c. L. salìnum, Pall. ined. L. verrucòsum, D. C. mem. soc. hist. nat. par. an. vii. p. 145. L. Candólii, Desv. journ. bot. 3. p. 165. Herb glaucous, usually many-stemmed; these are clothed at the neck with the remnants of the old leaves. Flowers like those of *L. latifòlium*.

Thick-leaved Pepperwort. Fl. May, July. Clt. 1820. Pl. ¾ ft.

45 L. AFFI'NE (Ledeb. from Link. enum. hort. berl. 2. p. 152.) pods pointed with the style, at last smooth; leaves ovate-lanceolate, all serrated; serratures of the upper leaves acumi-

nated, spreading. ♃. H. Native of Siberia. Root creeping. Flowers larger and fewer than those of *L. latifòlium*, which the whole plant very much resembles.

Allied Pepperwort. Fl. July. Clt. 1819. Pl. 2 or 3 feet.

46 L. SUFFRUTICÒSUM (Lin. mant. 91.) pods elliptical, pointed with the style; stems fruticose; radical leaves obovate-oblong, toothed, cauline ones linear, entire. ♄. H. Native of Spain. L. graminifòlium, Cav. icon. 2. p. 41. t. 161. f. 2. Stem simple or hardly branched. Seeds rufous, compressed.

Suffruticose Pepperwort. Fl. Aug. Sept. Clt. 1683. Pl. 2 ft.

47 L. LINEA'RE (D. C. in dict. encycl. 5. p. 46.) pods ovate, somewhat pointed by the sessile stigma; stems suffruticose; radical leaves pinnate, with few distant lobes, the rest linear-subulate and entire. ♄. H. Native of Spain. Very like *L. subulàtum*, but differs from it in the pods not being emarginate, as well as in the lower leaves being pinnate. Stems smooth or greyish from minute down.

Linear-leaved Pepperwort. Fl. July. Aug. Clt. 1823. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

48 L. IBE'RIS (Lin. spec. 900. from the synonyms.) pods ovate, pointed with the stigma; radical leaves cut or pinnate; cauline ones linear, entire; stem much branched. ♃. H. Native of waste ground and by way-sides in middle and south Europe, also in Tauria and Siberia. Lepídium graminifòlium, Lin. spec. 900. L. gramíneum, Lam. fl. fr. 2. p. 469. L. miscellaneòrum, Schultz, obs. no. 940. L. diándrum, Medik. in Ust. new. ann. 2. p. 45. L. exiguiflòrum, Clairv. herb. val. 214.—Tabern. icon. 848.—Lob. icon. 223. f. 2.—Mor. oxon. 2. p. 311. sect. 3. t. 21. f. 1.—Sab. hort. rom. 4. t. 14. A very variable plant. Herb smooth, erect, branched, slender.

Candy-Tuft Pepperwort. Fl. July, Aug. Clt. 1793. Pl. $1\frac{1}{2}$ ft.

49 L. CAPE'NSE (Thunb. prod. 107.) pods ovate, pointed with the sessile stigma; flowers diandrous; lower leaves stalked, pinnate-parted, middle ones serrated, upper ones entire. ♃. G. Native of the Cape of Good Hope on the north side of mount Leone. Stems many, rising from the neck, decumbent, or ascendant, much branched, downy. Leaves smooth.

Cape Pepperwort. Fl. Ju. Jul. Clt. 1818. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft. long.

50 L. FLEXUÒSUM (Thunb. prod. 107.) pods ovate, pointed with the style; leaves oblong, entire, radical ones stalked, cauline ones half stem-clasping; stems decumbent, flexuous. ♃. G. Native of the Cape of Good Hope by the sea-side. Herb smooth, glaucous. Stems many, from the same root.

Flexuous-stemmed Pepperwort. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot long.

51 L. AFRICA'NUM (D. C. syst. 2. p. 552.) pods elliptical, pointed by the stigma; radical leaves lyrately-pinnate; lobes cut, terminal one large; middle leaves cut or pinnate, uppermost ones entire. ♃? ♄? G. Native of the Cape of Good Hope. Deless. icon. sel. 2. t. 73. Thláspi Africànum, Burm. fl. cap. p. 17. Caudex woody, with annual pubescent stems, which are erect or ascendant.

African Pepperwort. Fl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

52 L. BIPINNA'TUM (Thunb. prod. 107.) pods? radical leaves bipinnate-parted; lobes filiform. ♃. ♄. G. Native of the Cape of Good Hope. This species has at first sight the appearance of *Pimpinélla dioíca*. Stems suffruticose. Fruit unknown.

Bipinnate-leaved Pepperwort. Pl. 1 foot.

† *Species not sufficiently known.*

53 L. PINNA'TUM (Thunb. prod. 107.) stem shrubby, erect; leaves all pinnate. ♄. G. Native of the Cape of Good Hope.

Pinnate-leaved Pepperwort. Pl. 1 foot?

54 L. FRUTICULÒSUM (Desv. journ. bot. 3. p. 165 and 180.) ♄. G. Native of New Holland. Leaves smooth, somewhat fleshy, ovate-lanceolate. Pods oblong, narrowed at the top, blunt or somewhat truncate, shorter than the pedicels. Stem shrubby, tall. Branches divaricate, somewhat dichotomous, round, whitish, few-flowered.

Shrubby Pepperwort. Pl. 2 or 3 feet?

55 L. DECU MBENS (Desv. journ. bot. 3. p. 165 and 176.—Native? L. divaricàtum, Willd. hort. berl. Leaves as if they were stalked, deeply-toothed. Pods ovate-oblong, roundish at the top. Style scarcely exserted. Stems annual, much branched, elongated, decumbent, hardly pubescent.

Decumbent Pepperwort. Pl. decumbent.

56 L.? TUBERÒSUM (D. C. syst. 2. p. 554.) ♃. H. Native of Louisiana. Nastúrtium tuberòsum, Raf. fl. lud. p. 84. no. 271. Root tuberous, white. Stem erect, branched, smooth. Radical leaves pinnate; leaflets toothed, terminal one large, hastate; cauline leaves sessile, linear-lanceolate toothed. Racemes lax. Pods roundish, emarginate. Stigma sessile. Perhaps a species of *Thláspi*, allied to *Thláspi tuberòsum*.

Tuberous-rooted Pepperwort. Fl. Feb. Pl. 1 foot.

57 L. PRÆ'COX (D. C. syst. 2. p. 554.) ♃. H. Native of Louisiana. Diléptium præ'cox, Raf. fl. lud. p. 86. no. 273. Stem erect, branched. Radical leaves pinnate; cauline leaves pinnatifid. Petals equal in length to the calyx.

Early-flowering Pepperwort. Fl. Feb. Pl. 1 foot.

58 L. DIFFU'SUM (D. C. syst. 2. p. 554.)—Native of Louisiana. Diléptium diffùsum, Raf. fl. lud. p. 85. no. 272. Stems procumbent, diffuse, much branched. Leaves small, pinnatifid; lobes toothed. Racemes loose, axillary and terminal. Petals very minute, shorter than the calyx. Eatable as water-cress.

Diffuse Pepperwort. Fl. April. Pl. 1 foot long.

59 L. POLLI'CHII (Roth. fl. germ. 2. p. 91.) ⊙. H. Native of Germany. L. Ibèris, Poll. pal. no. 607. This plant is sometimes received under the name of *L. satìvum var. laciniàtum*.

Pollich's Pepperwort. Fl. June, July. Clt.? Pl. 1 foot.

60 L. CORDA'TUM (Willd. herb. from Stev. obs. inèd.)—Native of Siberia. Plant glaucous. Leaves cordate-oblong, quite entire, stem-clasping. L. amplexicaúle, Stev. herb. not Willd.

Heart-leaved Pepperwort. Pl. 1 foot.

61 L. PROCU'MBENS (Lin. spec. 898.) Thláspi procúmbens, Lapeyr. p. 191. no. 8. of this work, more properly belongs to this genus.

Cult. The green-house species will thrive well in any kind of light soil, and are readily increased by cuttings planted under a hand-glass, or by seeds. The hardy perennial kinds by dividing the plants at the root, or by seeds; they will thrive in any kind of soil. The hardy annual sorts only require to be sown in the open ground. None of the species are worth cultivating for ornament.

LXXI. BIVONÆ'A (in honour of Antonin Bivona-Bernardi, a celebrated Sicilian botanist, author of Sicularum Plantarum Centuria prima, 1 vol. 8vo. published at Palermo, 1806.) D. C. syst. 2. p. 554. prod. 1. p. 208.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle oval, emarginate, with keeled valves, which are winged on their back. Seeds 4-6 in each cell, pendulous, ovate. An annual smooth glaucous slender herb. Stem filiform, sparingly branched. Leaves alternate, lower ones stalked, the rest sessile, cordate, stem-clasping at the base, ovate, toothed, bluntish. Racemes terminal, elongating as they grow. Pedicels filiform, bractless, shorter than the pods. Flowers small, yellow.

1 B. LU'TEA (D. C. syst. 2. p. 555.) ⊙. H. Native of Sicily about Palermo, on dry mountains above St. Maria, called di Gesu, and elsewhere. Thláspi lùteum, Biv. cent. 1. p. 78.—Cup. panph. sicul. 2. t. 256.

Yellow-flowered Bivonæa. Fl. April, May. Clt. 1823. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

Cult. This pretty little annual plant is well adapted for orna-

menting rock-work or the front of flower borders. The seeds only require to be sown where the plants are intended to remain. A dry sandy soil will suit it best.

LXXII. EUNO'MIA (from *ευ, eu*, well, and *νομος, nomos*, order; because the leaves are opposite and the seeds are twin.) D. C. syst. 2. p. 555. prod. 1. p. 208.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval, with keeled valves, and with two oblong-triquetrous seeds in each cell. Funicles somewhat united. Suffrutescent branched or tufted smooth herbs. Leaves opposite, upper ones sometimes alternate, sessile, or stem-clasping, orbicular or cordate, entire, thickish. Racemes 10 or 12-flowered, short, terminal. Flowers whitish.

1 E. oppositifòlia (D. C. syst. 2. p. 556.) leaves opposite, almost orbicular, quite entire, smooth. ♃. ♄. H. Native on Mount Lebanon. Ibèris oppositifòlia, Pers. ench. 2. p. 186. Lepídium oppositifòlium, Lab. syr. dec. 5. p. 14. t. 9. f. 2. Thláspi oppositifòlium, Poir. suppl. 5. p. 277. Lèpia oppositifòlia, Desv. journ. bot. 3. p. 166. Stems decumbent, branched, and easily broken at the joints. Leaves rather glaucous. Flowers white. A pretty little plant.

Opposite-leaved Eunomia. Fl. Ju. Jul. Clt. 1827. Pl. ½ to 1 foot.

2 E. chloræfòlia (D. C. syst. 2. p. 556.) leaves opposite, almost orbicular, roughly crenulated on the margin. ♃. ♄. H. Native of Bithynia on Mount Olympus near the top. Ibèris chloræfòlia, Sibth. Smith, prod. fl. græc. 2. p. 10. Ibèris Olýmpica, Sibth. in herb. Banks. Lepídium chloræfòlium, Spreng, syst. 2. p. 865. Stems tufted, quadrangular. Leaves rather glaucous. Flowers unknown.

Chlora-leaved Eunomia. Pl. 2 inches.

3 E. corda'ta (D. C. syst. 2. p. 557.) lower leaves opposite, the rest alternate, all heart-shaped. ♄. H. Native of Armenia and Syria, on mount Lebanon and on the mountains about Erzerum. Myàgrum chloræfòlium, Willd. spec. 3. p. 407. Thláspi cordàtum, Desf. ann. mus. 11. p. 382. t. 39. Choix. cor. p. 68. t. 52. Lepídium Tournefórtii, Spreng. syst. 2. p. 866. —Buxb. cent. 1. p. 3. t. 3. f. 1. Stems erect, branched, smooth. Leaves glaucous. Flowers white. Perhaps a proper genus.

Cordate-leaved Eunomia. Fl. June. Pl. ¾ foot.

Cult. These pretty little plants will answer well for ornamenting rock-work, or to be kept in small pots and placed among other alpine plants. Those cultivated in the latter way should be grown in a mixture of sand, loam and peat, and the pots should be well drained with potsherds. They may either be increased by cuttings planted under a hand-glass in the same kind of soil, or by seeds.

LXXIII. ÆTHIONE'MA (from *αιθω, aitho*, to scorch, and *νημα, nema*, a filament; apparently in allusion to some tawny or burnt appearance in the stamens.) R. Br. in hort. kew. ed. 2. vol. 4. p. 80. D. C. syst. 2. p. 557. prod. 1. p. 208.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicles oval, usually emarginate, with navicular valves, which are winged on the back (f. 47. *b.*). Cells 1 (f. 47. *b.*) 2-seeded. Larger stamens connected, or each furnished with a tooth on the inside. Seeds ovate-oblong, appearing muricated under a microscope. Herbs or sub-shrubs, perennial or annual, branched from the base, diffuse or erect. Leaves rather fleshy, glaucous, sessile, entire, ovate-oblong, lower ones linear, and usually opposite. Stems round. Racemes crowded, terminal. Pedicels filiform, bractless. Flowers small, flesh-coloured or purplish.

1 Æ. saxa'tilis (R. Br. in hort. kew. ed. 2. vol. 4. p. 80.) pods 2-celled, many-seeded, obcordate; style very short; valves entire, winged on the back; fructiferous, racemes lax. ⊙. H. Native of many places in the south of Europe, on rocks, Spain, France, Italy, Sicily, Greece, Switzerland, &c. &c. Thláspi saxátilis, Lin. spec. 901. Jacq. aust. t. 236. Schkuhr. handb. 2. no. 1791. t. 180. Leaves lanceolate, acutish.

Var. β, obtusifòlium (D. C. syst. 2. p. 558.) Ibèris parviflòra, Lam. dict. 3. p. 221. Thláspi peregrìnum, Lin. spec. 442? Mor. hist. 2. p. 297. sect. 3. t. 18. f. 30.—Bauh. hist. 2. p. 927. f. 1. Leaves oblong, blunt. Larger stamens toothed.

Var. γ, ovalifòlium (D. C. syst. 2. p. 559.) Lepídium marginàtum, Lapeyr. abr. 365. Thláspi marginàtum, Lapeyr. suppl. p. 90. Leaves oval. According to Sibthorp these plants are shrubby in their native countries, but in gardens they are annual. Flowers of all pale-purple. Larger stamens toothed.

Rock Æthionema. Fl. May, July. Clt. 1759. Pl. 2 to 6 inch.

2 Æ. gra'cile (D. C. syst. 2. p. 559.) pods 2-celled, few-seeded, obcordate; style equal with the valves; valves winged at back and toothed; larger stamens toothed; racemes when in fruit lax. ♄. H. Native of sandy hills in Carniola, and perhaps on gravelly hills in Cappadocia. Thláspi peregrìnum, Scop. carn. ed. 2. no. 809?—Bocc. mus. p. 79. t. 70. Suffrutescent; branches and branchlets slender, elongated. Leaves lanceolate, pointed. Flowers like those of *Æ. saxátilis*.

Slender-branched Æthionema. Fl. June, July. Clt. 1820. Pl. ¾ foot.

3 Æ. crista'tum (D. C. syst. 2. p. 560.) pods 2-celled, 2-4-seeded, orbicular, emarginate both at the base and the top; valves winged at the back, and deeply crested and toothed. ⊙. H. Native of Syria, near Aleppo. Thláspi peregrìnum, Poir. dict. 7. p. 541. Stems erect, more or less branched from the base; axillary branches filiform, shorter than the stem. Leaves ovate-lanceolate, acute. Larger stamens connected together. Deless. icon. sel. 2. t. 74.

Var. β, Thláspi Arábicum (Desv. journ. bot. 3. p. 167.) ⊙. H. Lower leaves obovate, upper ones ovate, scarcely cordate at the base. Native of Syria, between Aleppo, and Mossul, Bagdad and Kermancha, Teheran and Hispahan.

Crested-podded Æthionema. Fl. June, July. Pl. ¼ foot.

4 Æ. Buxbau'mii (D. C. syst. 2. p. 560.) pods 2-celled, 2-seeded, orbicular, emarginate both at the base and the top; back of valves winged, quite entire; racemes crowded, aggregate. ⊙. H. Native of Cappadocia, in gravelly soil by the margins of rivulets; also in Iberia, near Tiflis, in sandy places which are sometimes inundated by torrents. Ibèris Arábica, Lin. amœn. acad. 4. p. 278. Thláspi Buxbaúmii, Fisch. in litt. Horn. hort. hafn. suppl. 71. Æthionèma Cappadócicum, Spreng. nov. prod. 1. no. 2. Thláspi Arábicum, Bieb. fl. taur. suppl. 430. Stems erect, branched; axillary branches filiform, exceeding the stems. Lower leaves ovate, blunt, narrowed at the base, upper ones cordate, stem-clasping, ovate or ovate-oblong, entire, acute. Flowers small, purplish.—Buxb. cent. 1. p. 2. t. 5. f. 1.

Buxbaum's Æthionema. Fl. Ju. Jul. Clt. 1823. Pl. 4 to 6 in.

5 Æ. coridifòlium (D. C. syst. 2. p. 561.) pods 2-celled, 2-seeded, obcordate, crowded; valves winged at the back, entire; leaves linear, crowded, lower ones spreading. ♄. H. Native on Mount Lebanon. Deless. icon. sel. 2. t. 76. A little shrubby plant with filiform branches. Flowers rose-purplish, largish.

Coris-leaved Æthionema. Fl. June, July. Pl. ¼ to ½ foot.

6 Æ. membrana'ceum (D. C. syst. 2. p. 561.) pods 2-celled, 2-seeded (f. 47. *b.*), obcordate, crowded; valves winged on the back, entire; leaves linear, distant, strictly appressed. ♄. H. Native of Persia, on Mount Elwend. Lèpia membranàcea, Desv. journ. bot. 3. p. 166 and 181. A little shrub with filiform branches. Flowers purplish. Leaves somewhat fleshy. Deless. icon. sel. 2. p. 75. Larger stamens toothed.

Membranous Æthionema. Fl. Ju. Jul. Clt. 1828. Pl. ¼ to ½ ft.

7 Æ. stylòsum (D. C. syst. 2. p. 562.) pods 2-celled? 2-seeded, disposed in loose racemes; valves winged on the back; style elongated; larger stamens connected; leaves ovate-lanceo-

late. ♄. H. Native on Mount Lebanon. Thláspi cárneum, Russel in Schrad. journ. 1. p. 426. A little shrub with filiform branches. Flowers flesh-coloured, larger than any other species of this genus.

Long-*styled* Æthionema. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

8 Æ. polygaloìdes (D. C. syst. 2. p. 562.) pods 1-celled, 1-seeded, opening, emarginate at each end; stem shrubby at the base; leaves oblong-linear. ♄. H. Native of the island of Scio. A very small shrub, branching from the base, with the habit of *Polýgala saxátilis*. Leaves somewhat fleshy. Flowers unknown, but perhaps purplish.

Polýgala-like Æthionema. Pl. 2 or 3 inches.

9 Æ. monospe'rmum (R. Br. in hort. kew. ed. 2. vol. 4. p. 80.) pods 1-celled, 1-seeded, indehiscent, emarginate at the top; stem herbaceous; leaves oval or obovate. ♂. H. Native of Spain. A little herb with hardish branches. Leaves blunt, coriaceous. Flowers purplish, a little larger than those of *Æthionèma saxátilis*. Larger stamens toothed.

One-seeded Æthionema. Fl. Jul. Aug. Clt. 1778. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

Cult. The shrubby kinds of this genus should be kept in pots, which should be well drained with potsherds and treated like other alpine plants. A mixture of sand, loam, and peat suits them best, and cuttings planted under a hand-glass in the same kind of soil will root readily, or they may be increased by seeds. Some of the more hardy species may be planted on rock-work, which by their dwarf growth they are well adapted for. The annual and biennial species may either be sown on rock-work or in the front of the flower-border. A light dry soil suits them best. All the species are worth cultivating.

LXXIV. REDO'WSKIA (to the honour of Redowski, a Russian botanical collector). Cham. et Schlecht. Linnæa. 1. p. 33. t. 2.

Lin. syst. *Tetradynàmia, Siliculòsa.* Calyx pilose, of 4 ovate obtuse sepals, with white margins. Petals equal, roundish-obovate, entire, twice the length of the calyx. Filaments toothless, smooth. Silicle smooth, inflated, globose; style half a line long, crowned by a 2-lobed stigma, 1-celled, from the dissepiment being wanting, 2-valved; valves with a nerve running through their middle. Seeds 8-12. Cotyledons unknown. A perennial plant with a thick root and pinnate radical leaves, with pinnatifid leaflets, which are white from short tomentum; cauline leaves pinnate with toothed leaflets, but becoming more simple as they ascend. Stem ascending, Flowers on pedicels white, at first in corymbs, but at length lengthening out into racemes.

1 R. sophiæfo'lia (Cham. l. c. t. 2.) ♃. H. Native of the north-eastern parts of Asia.

Sophia-leaved Redowskia. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

Cult. An inconspicuous plant, which will grow under any circumstance. Not worth cultivating, unless in botanic gardens.

Tribe X.

ISATI'DEÆ (plants agreeing with *Isàtis* in some characters) or NOTORHI'ZEÆ (see sub-order II.) NUCAMENTA'CEÆ (*nucamentum*, a catkin; shape of pods). D. C. syst. 2. p. 563. prod. 1. p. 209. Silicle with indistinct or indehiscent keeled valves (f. 47. *d.*) 1-celled, 1-seeded, from the dissepiment having vanished. Seeds ovate-oblong. Cotyledons flat, incumbent, apparently in the same direction as the dissepiment should be.

LXXV. APHRA'GMUS (from *α priv. φραγμος, phragmos*, a dissepiment; silicles without a dissepiment). Andrz. in litt. D. C. prod. 1. p. 209.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle lanceolate, acute, with flat, nerved valves, without a dissepiment. Seeds disposed in two rows, pendulous. Cotyledons incumbent, thick. Perhaps this genus belongs more properly to *Camelíneæ*.

1 A. Eschscholzia'nus (Andrz. in litt. D. C. prod. 1. p. 210.) Native of the Aleutian Islands.

Eschscholz's Aphragmus. Pl. 1 foot.

Cult. This plant is not worth cultivating, except in general collections. It only requires to be sown in the open ground.

LXXVI. TAUSCHE'RIA (Ignat. Fred. Tauscher, Professor of Botany at Prague, author of several botanical works). Fisch. in D.C. syst. 2. p. 563. prod. 1. p. 210.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval, almost boat-shaped, 1-celled, 1-seeded, with navicular, indehiscent valves. Seed pendulous, oblong. Annual, erect, smooth, branched, herbs, with filiform stems. Lower leaves oblong, narrowed at the base; cauline ones sessile, sagittate, entire, glaucous. Racemes opposite the leaves, or as if they were terminal upon the abortive branches, elongated, bractless. Flowers small, white.

1 T. lasioca'rpa (Fisch. in litt. icon. D. C. syst. 2. p. 563.) pods villous on the convex part. ⊙. H. Native of the Kirghisian steppe at Lake Inderskoe. The whole herb, except the fruit, is smooth, not unlike *Isàtis nàna*.

Woolly-podded Taucheria. Fl. Ju. Jul. Clt. 1824. Pl. $\frac{1}{4}$ ft.

2 T. gymnoca'rpa (Fisch. in litt. icon. D. C. syst. 2. p. 564.) pods smooth. ⊙. H. Native with the preceding. Very like *T. lasiocárpa*, but differing in the leaves being smaller, and the pods smooth.

Naked-podded Taucheria. Fl. May, June. Clt. 1820. Pl. $\frac{1}{4}$ ft.

Cult. These plants are not worth cultivating, except in botanic gardens. They only require to be sown in the open ground or on rock-work, for which, from their low growth, they are well adapted.

LXXVII. ISA'TIS (from *ισαζω, isazo*, to render equal; the plant was believed to destroy by its simple application, all roughness and inequalities of the skin). Bauh. pin. 113. Lin. gen. no. 824. Lam. ill. t. 554. D. C. syst. 2. p. 564. prod. 1. p. 210.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle elliptical, flat, 1-celled, 1-seeded, with keeled navicular valves, which are scarcely dehiscent. Seed pendulous, oblong. Tall, erect, branched, annual or biennial herbs. Stems round. Lower leaves stalked, ovate, or ovate-oblong; upper ones sessile, sagittate, with acute auricles, all more or less glaucous, entire, or a little toothed. Racemes terminal, many-flowered, disposed in lax panicles, erect, elongated; pedicels filiform, bractless, erect, at the time of flowering corymbose, afterwards deflexed, usually a little thickened under the pod. Flowers yellow. All the species of this genus furnishes a blue dye, which is used by dyers in various ways. This dye is perfectly like indigo, and is often used as a substitute for it, especially that obtained from *Isàtis tinctòria*.

Sect. I. Samera'ria (from *samera*, the seed of the elm; winged like it). D. C. syst. 2. p. 565. prod. 1. p. 210. Desv. jour. bot. 3. p. 161. t. 24. f. 6. Silicle oval or orbicular, indehiscent, girded by a broad, leafy, membranous wing.

1 I. Garci'ni (D. C. syst. 2. p. 565.) pods rather pedicellate, broadly marginate, obovate, cuneated at the base, very blunt at the top, with 2 tubercles. ♂. H. Native of Persia, Deless. icon. sel. 2. t. 77. Peltària Garcìni, Burm. fl. ind. 139. t. 46. f. 1. Perhaps a proper genus.

Garcin's Woad. Pl. 1 foot.

2 I. Arme'na (Lin. spec. 936.) pod orbicular, cordate at the base, broadly marginate, pointed with the style. ⊙. H. Native of Armenia in dry meadows on the margins of rivulets, and in

Iberia about Tiflis. Tratt. arch. 2. p. 41. t. 70. Samerària Armèna, Desv. jour. bot. 3. p. 161. t. 25. f. 6.—Buxb. cent. 1. p. 3. t. 4. Auricles of leaves blunt.

Armenian Woad. Fl. Ju. Jul. Clt. 1825. Pl. 1 to 1½ foot.

3 I. LATISI'LIQUA (Stev. mem. soc. nat. mosc. 1812. vol. 3. p. 263.) pods elliptical, blunt, sessile, broadly marginate; stigma sessile; auricles of leaves blunt. ♂. H. Native of Cappadocia, and in the Alps about Chinalug in Eastern Caucasus. I. Cappadócica, Desv. journ. bot. 1814. p. 174. Pods velvety, from short down.

Var. β, glàbra (Stev. ind. D. C. syst. 2. p. 566.) pods smooth, or nearly so.

Broad-podded Woad. Fl. Ju. Jul. Clt. 1821. Pl. 1 to 1½ ft.

4 I. LEIOCA'RPA (D. C. syst. 2. p. 567.) pods oval-oblong, sessile, somewhat truncate at the apex, with a sessile stigma; auricles of leaves acute. ⊙? H. Native on Mount Lebanon. Flowers a little larger than those of *I. tinctòria*.

Smooth-podded Woad. Fl. May, July. Pl. 1½ foot.

5 I. LUSITA'NICA (Brot. fl. lus. 1. p. 560. but not of others) pods obovate, wedge-shaped at the base, very blunt and emarginate at the apex, broadly marginate; stem and leaves smooth. ⊙. H. Native of Portugal, among rocks near Miranda do Doiro. I. glaúca, Willd. herb. from Stev. obs. ind.

Portugal Woad. Fl. May, Jul. Clt. 1739. Pl. 1½ foot.

SECT. II. GLA'STUM (from *glas*, the celtic word for blue; because of the plants yielding a blue dye like indigo). D. C. syst. 2. p. 568. prod. 1. p. 210. Silicle oval-oblong, or almost linear, with corky margins, scarcely dehiscent.

6 I. ALPI'NA (All. ped. no. 944. t. 86. f. 2.) pods oval-oblong, blunt at both ends, quite smooth, with somewhat leafy-winged margins, almost 3-times as long as broad. 2? ♂. H. Native of Piedmont on Mount Vesulo, and in the Apennines. A very distinct species, intermediate between the two sections.

Alpine Woad. Fl. April, May. Clt. 1800. Pl. ½ to 1 foot.

7 I. PRÆ'COX (Kit. from Tratt. arch. 2. p. 40. t. 68.) pods elliptical, blunt at both ends, with a coriaceous, winged margin, very smooth, almost 3-times as long as broad. ♂. H. Native of Hungary and about Astrakan. I. Dalmática, Mill. dict. no. 2.? Habit of plant very like *I. tinctòria*, but easily distinguished from it by the pods being scarcely narrower at the base, but truly elliptical.

Early-flowering Woad. Fl. Apr. May. Clt. 1820. Pl. 1½ ft.

8 I. LITTORA'LIS (D. C. syst. 2. p. 568.) pods oblong-cuneated, very blunt, truncately-emarginate at the apex, very smooth, narrowed at the base, 3-times as long as broad; cells exserted on both sides, and with the furrow distinct from the wing. ♂. H. Native of Tauria on the sea-shore about Sudak. I. littoràlis, α, Stev. in litt. Deless. icon. sel. 2. t. 78. Flowers like those of *I. tinctòria*.

Sea-shore Woad. Fl. May, Jul. Clt. 1816. Pl. 1 to 2 feet.

9 I. HEBECA'RPA (D. C. syst. 2. p. 569.) pods oblong-cuneated, very blunt, velvety, somewhat narrower at the base, hardly twice as long as broad; cells destitute of the lateral furrow. ♂. H. Native of Tauria on the sea-shore, about Sudak. Deless. icon. sel. 2. t. 79. I. littoràlis, var. β, Stev. in litt.

Blunt-podded Woad. Fl. May, June. Clt. 1627. Pl. 1½ ft.

10 I. TINCTO'RIA (Lin. spec. 936.) pods cuneated, acuminated at the base, somewhat spatulate at the end, very blunt, smooth, 3-times as long as broad; leaves biauriculate at the base. ⊙. H. Native of south and middle Europe in dry stony places from Spain and Sicily to the shores of the Baltic sea, also, but probably introduced, in the Canary Islands and Eastern Asia, in cultivated land. In England in cultivated fields and about their borders, but rare. At New Barnes near Ely, and near Durham. Smith, engl. bot. t. 97. Mart. fl. rust. t. 41. Schkuhr. handb. 2. no. 1921. t. 188. Tratt. arch. 2. p. 39. t. 67. I. heterocárpa, Andrz?

Var. β, satìva (D. C. syst. 2. p. 570.) leaves smooth, broad. I. satìva, Fusch. hist. 331. icon. Dod. pempt. 79. f. 2. Dalech. lugd. 499. f. 2. This is the variety which is cultivated for use.

Var. γ, hirsùta (D. C. l. c.) leaves narrow, hairy. I. alpìna, Vill. dauph. 3. p. 308, exclusive of the synonyms. Native of exposed rocky situations.

Var. δ, microcárpa (D. C. l. c.) leaves smooth, narrow; pods smaller. I. Dalmática, Mill. dict. no. 2.? Native on Mount Lebanon.

The common dyers' woad was formerly called *glástum*, from the Celtic *glas*, blue, whence Glastonbury derived its name. The ancient Britons are reported to have painted their bodies with the blue colour obtained from this plant, whence they received their appellation Britho, being the Celtic word for to paint, hence Britons. The Picts were so named by the Romans for the same reason. On account of the brightness of its manufactured colours, the Celts called it *gwed* (*guesde* in French to this day) whence the Anglo Saxons obtained their name of *waad* or *wad*, and the English the word *woad*. It is in occasional cultivation for its leaves, from which a dye, as a substitute for indigo, is obtained. The seeds are sown on well-prepared land in good heart. Fresh broken old pasture-land is preferred, and the great object is to have large leaves; for which purpose, as Miller observes, the culture given by the best gardeners to spinach should be imitated, that of sowing on a very rich well pulverised soil, thinning the plants so as they may not touch each other, keeping them perfectly clear of weeds, and frequently stirring the soil between the plants. The culture applied to the turnip in Northumberland would succeed well with woad. The seeds are sown in July, and the plants, when they come up, weeded and thinned; next July, or earlier, the first crop of leaves may be gathered, and two or three others will be obtained during the season. The end of the second year the plants may be ploughed down, as the third year they will run to seed, and yield but small leaves. The leaves are pressed, and the juice treated as in making indigo, but such is the cheapness of the latter article, that no British farmer can afford to raise any sort of substitute.

"The culture of woad, though not general, has been practised in Flanders. It was an object with the French government to spread the cultivation of it, and a considerable quantity of the seed was sent gratis into the country for that purpose. Woad thrives best on sandy and gravelly soils, which must be well pulverised, manured, and formed into beds as in the case of madder culture. It is sown in March or April in rows, or broad-cast, and harrowed or covered with a rake. All weeds are cleared, away and the plants thinned, if a careful culture is followed. The leaves are the part of the plant used by the indigo manufacturer. They should be gathered singly, like those of spinach, as soon as they begin to show signs of maturity, and the mature leaves taken off from time to time as they grow. This operation goes on from June to September in the first year, and from June to August in the second; when the plant, being a biennial, shoots into flower-stems. The leaves are fermented, and the dye precipitated from the liquor and dried, &c. in a manner analogous to what is practised in India with indigo, but with great improvements, made at the instigation of the French government, which in 1810 called forth the process described in a French work, and translated in the Appendix to Radcliff's Report. At present it is to be considered more as matter of curious historical information or of local adoption than of general utility; because no mode of cultivating or preparing *woad* could bring it into competition, either in the European or American market with indigo." (Loud. enc. agr. p. 81.)

Dyer's Woad. Fl. May, July. Britain. Pl. 2 to 4 feet.

11 I. CAMPE'STRIS (Stev. in D. C. syst. 2. p. 571.) pods oblong, narrowed at the base, smooth, bluntish at the apex, 4 times as long as broad, a little shorter than the pedicels. ♂. H. Native of southern Podolia in fields about Balta and near Odessa. Very like *I. tinctòria*.

Field Woad. Fl. May, July. Clt. 1820. Pl. 2 feet.

12 I. BANNA'TICA (Link. enum. 2. p. 149.) pods cuneated, acuminated at the base, somewhat spatulate and very blunt at the apex, smooth, 3 times as long as broad; upper leaves destitute of auricles. ⊙. H. Native of Bannat.

Bannatian Woad. Fl. June, July. Clt. 1819. Pl. 1½ foot.

13 I. MÆO'TICA (D. C. syst. 2. p. 571.) pods oblong, smooth, narrowed at the base, blunt and emarginate at the top, 4 or 5 times as long as broad. ♂. H. Native of marshes about the Azof Sea near Taganrog. Very like the preceding, but the pods at the apex in the adult state are emarginate, and before maturity they are perfectly linear, and almost double the length of those of *I. Bannática*. Perhaps *I. megacárpa*, Ledeb.

Mæotic Woad. Fl. May, June. Clt. 1828. Pl. 1½ foot.

14 I. TAU'RICA (D. C. syst. 2. p. 571.) pods oblong, narrowed at the base, bluntish at the apex, smooth, 5 times as long as broad. ♂. H. Native of Tauria on calcareous rocks about Bachtschisarai. Isatis e Tauria, Bieb. fl. taur. suppl. p. 422. Very near to *I. Mæótica*, but differing in the pods being emarginate at the top in all states.

Taurian Woad. Fl. May, June. Clt. 1820. Pl. 1½ foot.

15 I. OBLONGA'TA (D. C. syst. 2. p. 471.) pods elliptical-oblong, narrowed and somewhat acute at each end, smooth, 5 times as long as broad, with the cells flattened in the centre, and somewhat 3-nerved. ♂. H. Native of Siberia about Irkoutsk. A smooth herb, very much like *I. tinctòria*, but smaller in all its parts. Perhaps *I. dasycárpa*, Ledeb.

Oblong-podded Woad. Fl. May, June. Clt. 1820. Pl. 2 feet.

16 I. ORIENTA'LIS (Willd. enum. 2. p. 663.) pods oblong-linear, pointed with the sessile stigma, scarcely narrowed at the base, pubescent, 5 times as long as broad, but scarcely exceeding the length of the pedicel. ⊙. H. Native of the Levant. This species is often confused with *I. canéscens*, *I. Aléppica*, and *I. Lusitánica*, but is sufficiently distinct from all.

Eastern Woad. Fl. May, July. Clt. 1818. Pl. 1 to 1½ foot.

17 I. CANE'SCENS (D. C. fl. fr. suppl. p. 598.) pods elongated, cuneated, pubescent, narrowed at the base, somewhat spatulate at the top and blunt, 4 times as long as broad, twice the length of the pedicels, which are obconical at the top. ♂. H. Native of exposed situations on the sea-shore in Provence, and on the sea-shore at Fanar, not far from the Bosphorus. Allied to *I. orientàle* on the one side, and to *I. tinctòria var. γ hirsùta* on the other. Leaves with acute auricles.

Var. β, Ibérica (D. C. syst. 2. p. 572.) lower leaves grossly toothed; pods much more dilated at the top, and smoother. I. Ibérica, Stev. mem. mosc. 5. p. 267. Perhaps a proper species.

Canescent-podded Woad. Fl. May, June. Clt. 1823. Pl. ½ ft.

18 I. ALE'PPICA (Scop. del. insubr. 2. p. 31. t. 16.) pods linear, blunt, narrowed at the base, villous with reversed down, 8 times as long as broad, and 3 times as long as their pedicels. ⊙. H. Native on rocks by the sea-shore in Greece and Asia Minor, also about Aleppo. I. Lusitánica, Lin. spec. 936. exclusive of the synonyms. Lam. ill. t. 554. f. 2. Tratt. arch. 2. p. 41. t. 69. I. Ægyptìaca, Lin. spec. 937. but not of Forsk. I. mìnor, Mœnch. meth. ? 222. Auricles of leaves acute.

Var. β, dentàta (D. C. syst. 2. p. 573.) ⊙. H. Native of Africa near Tripoli. I. dentàta, Pers. ench. 2. p. 193. Leaves grossly toothed, not lyrate as in the species.

Aleppo Woad. Fl. June, July. Clt. 1739. Pl. 1 foot.

Cult. The hardy perennial kinds answer well for ornamenting rock-work or the front of flower-borders, as they flower very early. They may be either increased by cuttings or seeds, the former will root freely under a hand-glass. The annual and biennial kinds are only cultivated in botanic gardens, but as the latter flower very early in the season, they are worth introducing into flower-borders. They only require to be sown in the open ground, where they are intended to remain or they may be transplanted. A dry light soil suits them best, as in wet land they are very apt to damp off in the winter.

LXXVIII. MYA'GRUM (from *μυια, myia*, a fly, and *αγρα, agra*, capture. An ancient plant, so named from its properties of catching flies, which our modern plant does not possess.) Tourn. inst. 211. t. 99. D. C. syst. 2. p. 573. prod. 1. p. 212.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle compressed, almost cuneated, with 2 empty hollows at the top, and 1-celled and 1-seeded at the base. Seed pendulous, oblong. An annual smooth erect herb. Lower leaves, oblong, tapering into the stalk, upper ones sessile, sagittate, stem-clasping, with 2 acute auricles, all of which are entire or somewhat toothed. Racemes elongated, erect; pedicels short, filiform, erect, after flowering becoming obconical and hollow. Flowers small, pale-yellow.

1 M. PERFOLIA'TUM (Lin. spec. 893.) ⊙. H. Native of middle and south Europe in cultivated fields and sandy places, particularly in the south of France, Switzerland, Italy, Germany, Transylvania, and in Iberia about Tiflis. Schkuhr. handb. 2. p. 210. t. 178. M. littoràle, Scop. carn. ed. 2. vol. 2. p. 12. no. 799. t. 35. Rapístrum perfoliàtum, Berg. phyt. 3. t. 167. M. perfoliàtum var. *α*, Lam. dict. 1. p. 569. M. amplexicaúle, Mœnch. meth. 221. Cakìle perfoliàta, Lher. diss. cak. ined. p. 6.

Perfoliate-leaved Myagrum. Fl. June, July. Clt. 1648. Pl. ½ to ¾ foot.

Cult. The seeds of this plant only require to be sown in the open border, but it is hardly worth cultivating except in botanic gardens.

LXXIX. SOBOLE'WSKIA (in honour of Gregor. Sobolewski, a Russian botanist, author of Flora Petropolitana, 1 vol. 8vo. Petersburgh, 1799.) Bieb. fl. taur. suppl. p. 421. D. C. syst. 2. p. 575. prod. 1. p. 212.

LIN. SYST. *Tetradynàmia, Siliculòsa.* Silicle oblong, compressed, 1-celled, 1-seeded, valveless, membranous. Seed oblong, pendulous. Cotyledons linear, somewhat curved. A branched erect herb. Stems round, suffrutescent at the base. Cauline leaves stalked, cordate-kidney-shaped, toothed. Racemes elongated; pedicels bractless, filiform. Flowers white.

1 S. LITHO'PHILA (Bieb. cent. pl. rar. ross. 2. t. 59. fl. taur. suppl. p. 421.) ♂. H. Native of Tauria on rocks at the river Salgir and at the Black sea, also in Iberia. Deless. icon. sel. 2. t. 80. Cochleària Sibírica, Willd. spec. 3. p. 450. Ráphanus Taúricus Adami, Hoffm. hort. mosc. 1808. no. 2658. Crámbe macrocárpa, Bieb. fl. taur. 2. p. 90. Pods, many abortive, 3 lines long and 1 line broad. Root creeping.

Stone-loving Sobolewskia. Fl. May, Aug. Clt. 1823. Pl. ½ to ¾ foot.

Cult. This plant is well adapted for rock-work, where the seeds should be sown. Not worth cultivating, except in general collections

Tribe XI.

ANCHONIE'Æ (plants agreeing with *Anchònium* in some characters) or NOTORHI'ZEÆ (see sub-order II.) LOMENTA'CEÆ (from *lomentum*, a loment; shape of pods.) D. C. syst. 2. p. 576. prod. 1. p. 212. Silique or silicle separating trans-

versely into 1-seeded joints (f. 47. *e.*). Cotyledons flat, incumbent (f. 45. *i*). Seed ovate.

LXXX. GOLDBA'CHIA (in honour of G. L. Goldbach, a Russian botanist, who has communicated many observations upon cruciferous plants to De Candolle.) D. C. syst. 2. p. 576. prod. 1. p. 212.

Lin. syst. *Tetradynàmia, Siliquòsa.* Stamens free. Silique 2-jointed (f. 47. *e.*). Style almost none. Smooth branched annual herbs. Stems round or somewhat angular, leafy. Leaves alternate, oblong, almost entire, lower ones tapering to the base, upper ones sessile, a little stem-clasping, with two small auricles. Racemes opposite the leaves, elongated, slender. Pedicels filiform, bractless, erect at the time of flowering, afterwards deflexed. Flowers small, from white to lilac.

1 G. lævigà'ta (D. C. syst. 2. p. 577.) pods smooth, pendulous, 2-jointed. ⊙. H. Native in the sand about Astracan, rarer in the Kuman desert. Deless. icon. sel. 2. t. 81. Ráphanus lævigàtus, Bieb. fl. taur. 2. p. 129. Lower leaves rosulate. Flowers lilac.

Smoothed-podded Goldbachia. Fl. May, Ju. Clt. 1823. Pl. ½ ft.

2 G. torulòsa (D. C. syst. 2. p. 577.) pods somewhat cylindrical, transversely torulose, and somewhat ascendant. ⊙. H. Native of the Levant. Very like the preceding species.

Torulose-podded Goldbachia. Fl. May, Ju. Clt. 1820. Pl. 1 ft.

Cult. The seeds of these plants only require to be sown in the open ground. A light sandy soil suits them best.

LXXXI. ANCHO'NIUM (from αγχωνη, *anchone*, strangulation; form of silicles.) D. C. syst. 2. p. 578. prod. 1. p. 212.

Lin. syst. *Tetradynàmia, Siliquòsa.* Larger stamens joined. Silique 2-jointed, 2-celled. (f. 47. *e.*) Style compressed, beak-formed. Seeds 4, pendulous, oblong, solitary in the cells. An herb with a hard woody stem. Radical leaves oblong, tapering to the base, velvety with soft starry down. Floral leaves situated under the pedicels, and therefore the racemes are leafy. Flowers purple. The joints of the pods do not separate. Habit of *Alýssum.*

1 A. Billardie'rii (D. C. syst. 2. p. 578.) ♃. ♄. H. Native of Syria on mount Lebanon. Deless. icon. sel. 2. t. 82. Caudex woody. Flowers crowded. Sepals linear, villous on the outside. Stigma acute, somewhat 2-lobed.

La Billardier's Anchonium. Fl. May? Pl. ¼ to ½ foot.

Cult. This plant will answer well for ornamenting rock-work, or to be planted in pots and placed among other alpine plants; those cultivated by the latter mode should be planted in a mixture of sand loam and peat, and the pots should be well drained with potsherds. Cuttings planted under a hand-glass in the same kind of soil will root freely, but if the plant ripen seeds, this will be unnecessary.

LXXXII. STERI'GMA (from στηριγμα, *sterigma*, a fork; because the larger stamens are connected at the base, and forked at the top, f. 50. *a.*) D. C. syst. 2. p. 579. prod. 1. p. 212. Sterigmostèmon, Bieb. fl. taur. suppl. p. 444.

Lin. syst. *Tetradynàmia, Siliquòsa.* Larger stamens joined to the middle (f. 50. *a.*). Silique roundish, at length separating into many joints. Erect perennial herbs, clothed with soft starry wool. Roots hard, suffrutescent. Leaves alternate, oblong, tapering to the base, sometimes entire, sometimes sinuated or pinnatifid. Racemes elongating as they become old; pedicels filiform, bractless. Calyx covered with soft down. Flowers of a deep yellow. Siliques covered with short dense down, often interspersed with longer stiff glanduliferous hairs.

1 S. tomentòsum (D. C. syst. 2. p. 579.) leaves all sinuately-pinnatifid. ♂. H. Native of muddy fields towards the Caspian Sea, and about the Irtish. Frequent in rubbish about towns and villages on the Lower Volga; also in vineyards about Astracan, more rare in the Kuman desert. Cheiránthus Cáspicus, Lam. in Pall. itin. ed. gall. 2. p. 348. Cheiránthus tomentòsus, Willd. spec. 3. p. 523. Sterigmostèmon, Bieb. fl. taur. suppl. p. 444.—Pall. itin. 2. app. no. 115. t. K. f. 2. ed. gall. app. p. 437. no. 352. t. 103. f. 2. Stems much branched, many, rising from the same root. Larger stamens connected beyond the middle.

Woolly Sterigma. Fl. April, May. Clt. 1823. Pl. ½ foot.

2 S. sulfu'reum (D. C. syst. 2. p. 580.) lower leaves runcinately-pinnatifid, upper ones entire. ♂. H. Native of Syria near Aleppo, and between Aleppo and Mossul. Deless. icon. sel. 2. t. 83. Cheiránthus sulfùreus, Russel in Schrad. journ. 1. p. 426. Flower like those of *S. tomèntosum.* Stem branched at the base.

Sulphur-coloured-flowered Sterigma. Pl. 1 to 2 feet.

3 S. torulòsum (D. C. syst. 2. p. 580.) leaves oblong, radical ones sinuately-toothed, upper ones entire. ♂. H. Native of Iberia about Tiflis. Cheiránthus torulòsus, Bieb. fl. taur. 2. p. 121. Sterigmostèmon incànum, Bieb. fl. taur. suppl. p. 444. Leaves less woolly than those of the two preceding species, and the pods are shorter, thicker, arched, and more torulose.

Torulose-podded Sterigma. Fl. May. Clt. 1823. Pl. ½ ft.

4 S. elychrysifòlium (D. C. syst. 2. p. 581.) leaves all oblong-linear, entire. ♃. H. Native of Armenia, and in Persia in the province of Ghilan. Cheiránthus lanàtus, Gmel. from Fisch. in litt. with a drawing. Cheiránthus aùreus, Willd. herb. from Stev. obs. ined. This species has the leaves of *Anchònium*, with the fruit and flowers of *Sterígma.* Deless. icon. sel. 2. t. 84. (f. 50.)

FIG. 50.

Elychrysum-leaved Sterigma. Pl. ½ foot.

Cult. These plants are well adapted for ornamenting rock-work, but a few plants of each should be kept in pots, so that they may be placed in a frame during winter, and planted out in the beginning of summer in the border or on the rock-work; in fact they require the same treatment as other alpine plants. They can only be increased by seeds.

Sub-order III. ORTHOPLO'CEÆ (from ορθος, *orthos*, upright, and πλοκη, *ploce*, a folding together; cotyledons folded together, f. 45. *j. f.*) D. C. syst. 2. p. 581. prod. 1. p. 213. Cotyledons incumbent, folded together or plaited lengthwise through their middle, and enwrapping the radical in the recess (f. 45. *j. f.*). Style generally enlarged, with a cell and seed at its base. Seeds generally globose, never margined.

Tribe XII.

BRASSI'CEÆ (plant agreeing with *Brássica* in some characters,) or ORTHOPLO'CEÆ (see Sub-order III.) SILIQUO'SÆ (*siliqua*, a long pod; pods long.) D. C. syst. 2. p. 581. prod. 1. p. 213. Silique with the valves opening lengthwise (f. 47. *f. o. g.*), and a linear dissepiment. Seeds globose. Cotyledons folded together (f. 45. *j. f.*).

LXXXIII. BRA'SSICA (from the Celtic word *Bresic*, which signifies a cabbage.) Lin. gen. no. 820. exclusive of many species. D. C. syst. 2. p. 582. prod. 1. p. 113.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique rather terete, crowned by a small short blunt style (f. 47. *f.*). Seeds in one

row (f. 47. *f.*) globose. Calyx closed. Herbs usually biennial, rarely annual or perennial, or suffrutescent usually with a short caudex. Radical leaves usually stalked, lyrate or pinnatifid; cauline ones sessile or stem-clasping, entire. Racemes elongated; pedicels bractless, filiform. Flowers yellow, rarely white, but never purple nor veined. This genus contains the well known pot-herbs and roots, cabbage, cauliflower, turnips, rape, &c. &c.

Sect. I. Bra'ssica. (D. C. syst. 2. p. 582. prod. 1. p. 213.) Silique sessile, usually terminated by a conical seedless beak, or destitute of it.

1 B. olera'cea (Lin. spec. 932.) leaves covered with glaucous pollen, somewhat fleshy, repand or lobed, quite smooth, even in their younger state. ♂. H. Freeman, icon. t. 4, 5.

Potherbs, Borecoles, Cabbages, Cauliflowers, &c. &c.

There is scarcely an instance in the vegetable kingdom of a plant that produces varieties so different in appearance and qualities as the *B. oleràcea*. Comparing the original plant, as it is found on our shores, with very sea-green leaves, no appearance of a head, and flowering like *Wild Mustard* or *Charlock*, with the red cabbage or cauliflower, the difference is astonishing. A new arrangement of the cultivated species of *Brássica*, has been made by professor De Candolle, Hort. trans. vol. 5. and in his syst. vol. 2. which we here give without any variation.

§. 1. *Sea Colewort* or *Cabbage*, or *Wild Cabbage*.

1 A. sylve'stris (B. oleràcea, Huds. ang. 289. Smith, eng. bot. t. 637.) stem taller than in *B. capitàta*, more humble and more branched than in *B. acéphala*. Leaves not collected into a true head. Native of England on cliffs by the sea-side, particularly at Dover, on the Welsh and Cornish coasts; at Staiths, Yorkshire, abundantly; and at King's Cove, Devonshire.

§ 2. *Greens, Kale* or *Borecoles*.

2 B. ace'phala (D. C. syst. 2. p. 583.) stem round, elongated; leaves expanded; racemes panicled. Brássica oleràcea viridis, Lam. dict. 1. p. 743. no. 2. *Choux sans tete*, Audib. and Vilm. mss. *Choux verts*, cultivated in fields for the nourishment of cattle. Bosc. dict. agr. 4. p. 42.

Var. α, *ramòsa* (D. C. syst. 2. p. 583.) stem branched; leaves sinuately-pinnatifid. B. viridis procèrior, Lam. dict. 1. p. 743. no. 2. var. β. This variety is called *Chou cavalier branchu* in France, and in England Cavalier Cabbage and Thousand-headed Cabbage.

Var. β, *vulgàris* (D. C. syst. 2. p. 583.) stem almost simple; leaves sinuately-pinnatifid.

* *viridis* (D. C. l. c.)—Lob. icon. 243. f. 1.—J. Bauh. hist. 2. p. 429. f. 2.——*Chou Cavalier, Chou en arbre, Chou chèvre, Grand Chou vert* (Fr.) 100-leaved Cabbage (Eng.)

* * *purpuráscens* (D. C. l. c.)—J. Bauh. hist. 2. p. 831. f. 2.—Chabr. sciagr. 270. f. 6.—Mor. oxon. 2. p. 207. no. 7.—Open-headed Red Cabbage (Eng.)

Var. γ, *sabéllica* (D. C. syst. 2. p. 584.) stem almost simple; leaves sinuately-lobed; lobes multifid.—Ren. specim. 134. t. 133.—Lob. icon. 247. f. 1.—J. Bauh. hist. 2. p. 832. f. 1.—Lam. dict. 1. p. 743. no. 2. var. γ.——*Chou vert frisé, Chou frangé du Nord, Chou frisé non pommé, Chou frisé d'Allemagne*, (Fr.) Greens, Kale, Curles (Eng.)

* *pinnàta* (D. C. l. c.) B. tenuifòlia laciniàta, Lob. icon. 246. f. 2. obs. 123. f. 2.—*Chou aigrette, Chou plume* (Fr.)

* * *purpuráscens* or *versícolor* (D. C. l. c.) leaves either purple or variegated.

Var. δ, *palmifòlia* (D. C. syst. 2. p. 584.) stem simple; leaves sinuately-repand, a little blistered, pendant.——*Chou Palmier* (Fr.) *Palm Borecole* (Eng.)

Var. ε, *Cow Cabbage*. Stem branched, 12 feet high; leaves curled.

Var. ζ, *costàta* (D. C. syst. 2. p. 584.) stem humble, a little branched; leaves sinuately-repand, with the primary nerves very thick.—Lam. dict. 1. p. 743. no. 2. var. δ. *Chou blond à grosses côtes*, Bosc. dict. agr. 4. p. 43.—*Chou à grosses côtes, Chou à larges côtes, Chou de Beauvais.* (Fr.)

* *nepenthifórmis* (D. C. l. c.) nerves and nervules drawn out into filiform threads, terminating in leafy funnel-shaped appendages.

§ 3. *Savoy-Cabbages, and Brussels sprouts.*

3 C. bulla'ta (D. C. syst. 2. p. 584.) stem round, a little elongated; young leaves at first conniving into a head, but they are at length spreading, and all blistered or curled; racemes panicled.

Var. α, *vulgàris* (D. C. syst. 2. p. 584.) heads of leaves loose, thick, terminal, roundish.—Lob. icon. t. 244. f. 1.—Dalech. lugd. p. 520. f. 2.—B. oleràcea Sabaùda, Lin. spec. p. 932.—Lam. dict. 1. p. 743. no. 3. var. κ and λ.——*Chou pommé frisé, Chou de Milan, Chou de Savoie, Chou de Hollande, Chou cabu frisé, Chou Pancalier* (Fr.) Savoy-Cabbage (Eng.)

* *præ'cox* (D. C. syst. 2. p. 585.)—*Milan hatif, petit Milan* (Fr.) Small early Savoy-Cabbage (Eng.)

* * *hùmilis* (D. C. l. c.)—*Milan nain* (Fr.) Dwarf Savoy-Cabbage (Eng.)

* * * *Turionénsis* (D. C. l. c.)—*Pancalier de Touraine* (Fr.) Turaine Savoy-Cabbage (Eng.)

* * * * *aurìta* (D. C. l. c.)—*Milan doré* (Fr.) Eared Savoy-Cabbage (Eng.)

Var. β, *oblónga* (D. C. syst. 2. p. 585.) heads of leaves terminal, oblong.—Lob. icon. 244. f. 2.—Mor. oxon. sect. 3. t. 1. f. 4.——Winter Savoy-Cabbage (Eng.)

Var. γ, *màjor* (D. C. syst. 2. p. 585.) heads of leaves terminal, very large.—Lam. dict. 1. p. 743. no. 3. var. λ.——*Gros d'Ambervilliers, Pomme frisé d'Allemagne* (Fr.)—Great or Common Savoy-Cabbage (Eng.)

Var. δ, *gemmífera* (D. C. syst. 2. p. 585.) heads of leaves small, numerous, rising from the axils of the leaves along an elongated stem.—Delech. lugd. 521. f. 2 ?—Mor. oxon. sect. 3. t. 1. f. 3 ?——*Chou à jets, Chou à jets et rejets, Chou de Bruxelles, Chou à mille tetes, Chou vert à petites pommes le long du pied* (Fr.)—Brussels Sprouts (Eng.)

§. 4. *Cabbages red and white.*

4 D. capitata (D. C. syst. 2. p. 585.) stem round, short; leaves concave, not blistered, crowded into a head before flowering; racemes panicled.—Weinm. phyt. t. 259.—Dod. pempt. 623. f. 2.—Lob. icon. 243. f. 2.—Mor. oxon. 2. p. 206. sect. 3. t. 1. f. 1.—Lam. dict. 1. p. 743. no. 3.——*Choux cabus ou pommés*, Bosc. dict. agr. 4. p. 42.——*Chou pommé, Chou pommé à feuilles lisses, Chou en tete* (Fr.)—Cabbage (Eng.)

Var. α, *deprèssa* (D. C. syst. 2. p. 585.) heads of leaves spheroid, depressed.—Lam. dict. 1. p. 743. no 3. var. ζ.——*Chou pommé à tete aplatie*, Audib. mss. (Fr.)—Drumhead or Dutch Cabbage (Eng.)

Var. β, *sphæ'rica* (D. C. syst. 2. p. 585.) heads of leaves globose, not depressed.——*Chou cabus commun, Chou pommé commun* (Fr.)—Common Cabbage (Eng.)

* *álba* (D. C. l. c.) outer leaves green, inner ones white.——*Chou pommé blanc, Chou cabus blanc ou vert* (Fr.)—Common White Cabbage (Eng.)

* * *rùbra* (D. C. l. c.) leaves red or purple, always particularly so in the nerves.—Dod. pempt. 621. f. 2.—I. Bauh. hist. 2. p. 831. f. 1.—Lam. dict. 1. p. 743. no. 3, var. δ and ι.——*Chou à tete ronde rouge*, Audib. mss.—*Chou rouge* (Fr.)—*Red Cabbage*, Aberdeen Red Cabbage (Eng.)

Var. γ, *obovàta* (D. C. syst. 2. p. 586.) heads of leaves obovate.——*Chou à tete obovale*, Audib, mss.—Pentonville Cabbage? (Eng.)

Var. δ, *ellíptica* (D. C. syst. 2. p. 586.) heads of leaves elliptical.——*Chou a tete ovale*, *Chou d'Yorck* (Fr.)—Early York Cabbage, Small Early Dwarf Cabbage (Eng.)

Var. ε, *cónica* (D. C. syst. 2. p. 586.) heads of leaves ovate-conical.—Lam. dict. 1. p. 743. no. 3, var. δ and ε.——*Chou pain de sucre*, *Chou Chicon*, *Chou d'Ambervilliers*, *Chou de Battersea* (Fr.)—Sugar-loaf Cabbage, Antwerp Cabbage, and Battersea Cabbage (Eng.)

§. 5. *Chou rave, or Turnip-stemmed Cabbage.*

5 E. cau'lo-ra'pa (D. C. syst. 2. p. 586.) stem tumid and somewhat globose at the origin of the leaves.

Var. α, *cómmunis* (D. C. syst. 2. p. 586.) leaves plain.—Dod. pempt. 625. f. 1.—Lob. adv. app. 463. f. 2.—Bauh. hist. 2. p. 830. f. 1.——*Chou-rave* (Fr.) *Cape Cabbage* (Eng.)

* *álba* (D. C. l. c.) *Chou-rave blanc*, *Chou-rave commun*, *Chou de Siam*, *Kohl rübi* (Fr.) *Knol*, *Kohl* (Cape.)

* * *purpuráscens* (D. C. l. c.) *Chou-rave violet* (Fr.)

Var. β, *crispa* (D. C. syst. 2. p. 586.) leaves curled and fringed.——*Chou-rave crepu* (Fr.)—*Pavonazza* (Ital.)

§. 6. *Cauliflower and Brocoli.*

6 F. bo'trytis (D. C. syst. 2. p. 586.) peduncles of racemes corymbose, crowded very much before flowering, and very fleshy; flowers usually abortive.—Lob. obs. 125. f. 2.—Lam. dict. 1. p. 745. no. 4.

Var. α, *cauliflòra* (D. C. syst. 2. p. 586.) stem humble; leaves oblong, of a greyish-glaucous colour; heads of flower-buds thick, terminal.—Dod. pempt. 625. f. 2.—I. Bauh. hist. 2. p. 828 and 829. f. 1.—Lam. dict. 1. p. 745. no. 4. var. α, β, γ.——*Cavolo-fiore* Galliz. bot. agr. p. 191. no. 2,—*Chou fleur* (Fr.)—Cauliflower (Eng.)

Var. β, *asparagoìdes* (D. C. syst. 2. p. 587.) stem taller than in the Cauliflower; leaves greyish-glaucous, elongated; branchlets fleshy, bearing small flower-buds at the top; flowers abortive.—Dalech. lugd. 522. f. 2.—Mor. oxon. 2. p. 208. no. 11. sect. 3. t. 1. f. 11.—Lam. dict. 1. p. 745. no. 4. var. δ, ε, and ζ.——*Cavolo Romano seu Broccoli*, Galliz. bot. agr. p. 191. no. 2.—*Broccoli* (Fr.) Brocoli (Eng.)

* *cómmunis* (D. C. l. c.) heads of flower-buds white.——*Broccoli commun*, *Broccoli blanc* (Fr.)—White Brocoli (Eng.)

* * *violàcea* (D. C. l. c.) heads of flower-buds purple.——*Broccoli violet*, *Broccoli de Malte* (Fr.)—Purple, Red, or Maltese Brocoli (Eng.)

Cult. The varieties of *Brássica oleràcea* have been cultivated from the earliest period; they have therefore become numerous, and so distinct from each other, as to occasion a doubt in every beholder's mind whether it were possible that these numerous and distinct varieties could have originally sprung from the *Sea Colewort or Wild Cabbage* of the Dover Cliffs. Cabbages of some sort, White, in his *History of Selbourne*, says, must have been known to the Saxons, for they named the month of February *Sprout-kale*. Being a favourite with the Romans it is probable Italian cabbage would be introduced at an early period into South Britain. To the inhabitants of the north of Scotland *Cabbages* were first made known by the soldiers of Cromwell, when quartered at Inverness (Edin. encycl. art. hort.)

Having thus botanically traced the variations of *Brássica oleràcea* from the *Sea-Colewort* through *Borecoles*, *Savoys*, and *Cabbages* to the *Cauliflower* and *Brocoli*, we shall now proceed to give the cultivation and uses of these in the order we have followed above.

The space occupied by this tribe in most kitchen gardens may be estimated at one-eighth or one-fourth part of the open quarters, taking the whole year round, and in cottage-gardens the heading Cabbages and Borecoles generally occupy one-half of the whole space.

§ 1. *Sea Colewort, or Cabbage, or Wild Cabbage. Brássica oleràcea. A. sylvéstris, D. C. l. c.*

We have already said that the original Cabbage plant grows naturally on the Dover Clifts and several other parts of the English coast. It is a biennial plant, the stem-leaves are much waved and variously indented, the colour is glaucous or sea-green, with occasionally a tinge of purple, arising from the bleak situation in which it usually grows. Early in the spring the *Wild Cabbage* or *Colewort* from the sea coast is said to be excellent, but it must be boiled in two waters to remove the saltness. The roots may also be eaten but they are not very tender.

§. 2. The *Borecole, Winter Greens* (Eng.); *Chou vert* or *Chou vert non pommé*, *Caulet* (Fr.); *Kale* (Sax.); *Green Kale* (Scotch.); *Brassica oleràcea, B. acephala*, D. C.

This tribe is easily known by the leaves never conniving into a head, but the heart always open and spreading.

1 The Thousand-headed Cabbage, *Chou à mille tetes*, *Chou Cavalier branchu*, *Chou Moellier* (Fr.) (*Brássica oleracea, B. acephala* α *ramòsa*, D. C. l. c.) grows to the height of 4-feet and upwards, sending out from its main stem branches in the manner of a tree, from the ends and sides of which proceed shoots which appear as actually in growth the whole winter. The leaves are of a pale green, numerous, entire, or pinnatifid, narrower than those of any other green. It is chiefly extolled as an agricultural plant, but may be occasionally planted in gardens, because it will survive the severest frost, and be useful when every other plant of the Cabbage tribe has been destroyed. In flavour it is inferior to winter greens.

2 *Chou Cavalier*, *Chou en arbre*, *Chou à chevre*, *Grand chou vert commun* (Fr.) (*Brássica oleràcea, B. acephala*, β. *vulgaris*, * *víridis*, D. C. l. c.) This shoots up higher than the preceding variety; its stems remaining nearly single, but they are scarcely distinguishable from each other. This variety is very generally cultivated in the western part of Europe as food for cattle, and sometimes as a garden vegetable. It grows sometimes 5 feet high; this may be attributed to the stripping off the lower leaves to give them to cattle, as well as from being usually planted in rich soil.

3 Oak-leaved Borecole, *Chou à feuilles de chéne* (Fr.) This comes near to the next variety. The lobes of the leaves are deep, broad, and entire, or nearly so, and uniformly of a pale-green. This variety is not generally cultivated. Perhaps the *Chou de Milan*, p. 231. is a variety of this plant.

4 Green Borecole, Scotch Kale, Siberian Borecole (Eng.) *Chou vert frisé*, *Chou frangé du Nord*, *Chou frisé non pommé* (Fr.) (*Brássica oleràcea, B. acéphala, var.* γ, *Sabéllica, D. C. l. c.*) There are several sub-varieties under this head. The leaves are of a bright light green deeply lobed, and not very wide, curled on the edges, slightly wrinkled on the upper surface, with veins of a greenish-white colour. The margins of the leaves are plaited so closely as to widen so as to measure three times as much as if the plaits were not extended. The younger leaves in consequence look completely

fringed. The part used is the crown or centre of the plant, cut off with as much of the top of the stem as will keep the leaves together, which do not exceed 9 inches in length. It boils well and is most tender, sweet, and delicate, provided it has been duly exposed to the frost. Morgan says it is impossible to find a plant of more excellence for the table or more easily cultivated.

The following are sub-varieties of the same.

* *German Kale* (Eng.) *Chou d'Allemagne* (Fr.) (*Brássica oleràcea, B. acéphala, var. γ, Sabéllica, Germánica.*) This variety of the Green Borecole is known in Scotland under the names of German Greens, German Kale, Curled Kale, and Curlies. Morgan says this Green is of singular merit. Its leaves are more pointed and grow much longer than those of the others; their margins are not so much plaited, but being still considerably so, give them a curled or fringed appearance, but not so richly and beautifully so as the true Scotch Kale. The chief difference consists in its furnishing abundance of side shoots or sprouts for the table after the crown has been gathered. It grows tall, and this disposition ought to be encouraged by early planting, for the supply of shoots is nearly in proportion to the length of the stem. It is rather more hardy than the Scotch Kale, in taste it is the same, but when not mellowed by frost has something of a bitter flavour (Loud. encycl. gard.)

* * *Chou aigrette, Chou plume* (Fr.) (*Brássica oleràcea, B. acéphala, var. γ, Sabéllica, * pinnata, D. C. l. c.*) The leaves of this variety are thin, and very deeply jagged and curled, the indentations being so deep as to appear almost pinnated. It is not much cultivated, and it does not appear to possess any superior quality.

* * * *The Ragged Jack.* (*Brássica oleràcea, B. acéphala, var. γ, Sabellica, laciniàta.*) This variety grows short on the ground, and in the spring shoots up strongly from the crown and sides. The leaves are very glaucous, much cut and divided; the edges are marked with small blunt crenatures, and there arise from several points on the upper surface of each leaf, and particularly on the large ones, small leafy appendages similar in texture to the main leaf. This plant is almost entirely confined to cottage and farm gardens.

* * * * *The Jerusalem Kale.* (*Brássica oleràcea, B. acéphala, var. γ, Sabéllica, Judáica Delaware Cabbage.*) This variety agrees with the preceding in habit and growth. The leaves are long, with several deep indentations on each side; their edges are serrated but not deeply so, the upper surface having a purplish hue, the under surface being a pale green, and the veins are purple, inclining to a pink colour. The whole plant when growing appears of a dingy purple, and is extremely hardy; when the taller winter greens have ceased to be good by running to flower the shoots of this are ready to take their place at the table. This with the preceding and following are perhaps referable to *B. campéstris, Nàpo-Brássica.*

* * * * * *The Buda Kale, Russian Kale, Prussian Kale,* and by some called *Manchester Kale.* (*Brássica oleràcea, B. acéphala, var. γ, Sabéllica.—Ruthénica.*) Like the preceding. This is dwarf in its habit, but more close and compact; with leaves like the German Kale, and curled on the edges in the same way. Before the plant begins to shoot in the spring it appears purple, the back and edges of the leaves being tinged with that colour, which of course are more in view in their growing state than when expanded. It is equal in value to any variety of Borecole, sweet and well-flavoured, perfectly hardy, and remains till late in the spring before it comes to flower. As this variety is expected to furnish a supply much longer than any of the others, and until late in the spring, a greater breadth of ground should be allowed for it, and a second plantation made in August for the later gathering. A writer in Hort. Trans. Lond. has, by blanching *Buda-Kale*, very much improved it; and the process is performed nearly in the same manner as that for *Sea Kale.* It is blanched by inverting a large flower-pot over it, any other *Kale* may be rendered more delicate by this process, and it might be had at a time when Sea-Kale cannot be procured, and would be an excellent substitute for it.

* * * * * * *The Variegated Borecole* (*Brássica Oleràcea, B. acéphala, var. γ, Sabéllica * * versicolor, D. C. l. c.*) Of several of the sub-varieties of Borecole, there are varieties which are blotched or striped with white or red; these are chiefly cultivated for ornament or curiosity.

* * * * * * * *The Purple Borecole* or *Brown Kale* of the Germans (*Brassica Oleràcea, B. acéphala, var. γ, Sabéllica * * purpuráscens, D. C. l. c.*). This variety differs from the others in the leaves and entire plant being of a deep purple colour, becoming somewhat greenish as the leaves enlarge, but the veins and ribs still remaining purple. It is a more hardy plant than the green Borecole, but of less delicate flavour. When boiled the purple colour in a great degree disappears. (Loud. ency. gard.) *Chou rouge frisé* (Fr.).

5 The Palm Kale *Chou Palmier* (Fr.) (*Brássica Oleràcea, B. acéphala, var. ε, palmifòlia, D. C. l. c.*) This variety is described by Delaunay in "*Le bon Jardinier,*" as rising to the height of 6 or 12 feet, with a straight bare stem, the leaves displaying themselves only at the top, and thus producing the appearance of a little palm-tree; the leaves are much puckered, and so much rolled inwards at the edges, that they appear narrow, while at the same time they hang in a curved manner, thus aiding the illusion. It is almost peculiar to Italy, and not very hardy. The Palm Borecole is said to be cultivated to considerable extent in Jersey and Guernsey in orchards, the outer leaves for feeding cattle, and the heart is used for culinary purposes, and is said to be very good.

6 The Cow Cabbage (Loud. gard. mag. vol. 5. f. 14.) or Cesarean Kale (*Brássica Oleràcea, B. acéphala, var. ζ, arboréscens*). This plant is almost similar in habit to the preceding, but the stem rises to the height of from 10 to 16 feet, the leaves are not so puckered nor rolled inwards at the edges, nor do they hang down so much. The stem is naked and simple, crowned by a head of leaves like a palm-tree. Sixty plants of this variety are said to afford sufficient provender for one cow for a year, and as the side leaves are only to be used, it lasts four years without fresh planting. In La Vendee this plant is said to attain the height of 12 or 16 feet. In Jersey the plant is sufficiently hardy, and where it grows from 4 to 12 feet. The little farmers there feed their cows with the leaves, plucking them from the stem as they grow, leaving the crown at the top. The stems being strong are also used by them for roofing small outhouses. When the gathering of the leaves is finished, at the end of the year, the terminating bud or crown is boiled and is said to be particularly sweet. It is not sufficiently hardy to stand the climate of Britain, unless planted in a very sheltered situation.

7 The Ribbed Cabbage or Kale; *Chou blond à grosses cotes, Chou à grosses cotes, Chou à larges cotes* (Fr.). *Cove tronchuda* (Port.). (*Brássica Oleràcea, B. acéphala, var. ι, Costàta, D. C. l. c.*) The stem of this variety is humble and a little branched. The leaves are sinuately repand with the nerves very thick. It is much cultivated in France and Portugal.

8 The Nepenthes-like Borecole or Kale (*Brássica Oleràcea, B. acéphala, var. nepenthifórmis, D. C. l. c.*). The nerves of the leaves of this variety are drawn out like threads, and these threads are terminated by funnel-shaped appendages. This variety is only cultivated for curiosity, and it is seldom to be seen in the collections of this country. Hort. trans. 5. t. 1.

Propagation of Borecole. All the sorts are raised from seeds, and for a seed bed of 50 feet square half an ounce is sufficient.

Sow the last fortnight in March, and April, and in the beginning of May and in August. The first week in April for a principal crop of German kale, and the first week in August for the crop of Buda kale, and which will be ready to transplant in September.

Subsequent culture. When the plants have leaves one or two inches broad, take out some from the seed-bed, and prick them into other open beds six inches apart, giving water, in which let them have four or five weeks' growth. Those left in the seed-bed, as well as these will have all acquired proper strength for transplanting finally in May, or thence till August. Plant them in an open spot in rows two feet and a half asunder for the first forward planting in summer, the other two feet, allotting the whole similar distances in the rows, taking advantage of moist weather, but give occasional watering if the weather is dry until they have struck root. In their advancing growth hoe once or twice to cut down the weeds, and to draw earth about the bottom of their stems to encourage their growth, in the production of large full heads in proper season in September, October, &c. At the approach of winter the stems should be earthed up, especially the taller sorts. When the distances between the plants are such as have been recommended, the hills round each plant will be of such a size and breadth as to cherish the roots of the dwarf varieties, and serve as a protection to the tall sorts in stormy weather.

Gathering. The heart is to be gathered of all tall sorts, after which, with the exception of the *German kale*, and the *Chou de Milan*, the stalks should be pulled up and taken to the compost heap; but the stems of the two sorts excepted are to be left for the sake of their side shoots or sprouts. Of the dwarf sorts the heart may either be cut off, for which the *Buda kale* and *Coleworts* are well suited, or the leaves gathered when the plant begins to grow, which corresponds with the habits of the *Egyptian* and *Jerusalem kale*.

To save. Plant a few plants about twice the distance from each other, as they stood formerly, in an open space in the spring. The seeds will be ready to gather in autumn, when they may be threshed out, and the seed, after being dried, may be put up into bags. This cannot be done with more than one sort in the same garden, on account of promiscuous impregnation by bees, the wind, &c. &c.

§ 3. *Savoys. Chou pommé frisé, Chou de Savoie, Chou cabu frisé. Chou Pancalier, Chou de Holland, Chou de Milan, &c.* (*Brássica oleràcea, C. bullàta, D. C. l. c.*) These plants are easily known by the leaves being blistered, and growing into heads or cabbages.

The savoy is in use as a table vegetable from November till spring, unless destroyed by frost, in which case it is succeeded by the borecoles or winter greens. These two tribes usually supply the table from November till May.

The following are the varieties of Savoy :—

1 The Green Savoy ; *Milan vert.* (Fr.) *B. oler. bull. viridis.*)

2 The Dwarf Savoy ; *Milan nain.* (Fr. *B. oler. bull. húmilis, D. C. l. c.*)

3 The Yellow Savoy ; *Milan jaune.* (Fr.) (*B. oler. bull. lutea.*)

4 The Small Early Savoy ; *Milan hatif, petit Milan.* (Fr.) (*B. oler. bull. t. præcox, D. C. l. c.*)

5 The Eared Savoy ; *Milan dore.* (Fr.) (*B. oler. bull. aurita. D. C. l. c.*)

6 The Drumhead or Great Savoy ; *Chou gros d'Ambervilliers, Pommé frisé d'Allemagne.* (Fr.) (*B. oler. bull. var. γ, major, D. C. l. c.*)

7 The Oblong Savoy. (*B. oler. bull. var. β, oblónga, D. C. l. c.*)

8 Tourraine Savoy ; *Pancalier de Touraine.* (Fr.) (*B. oler. bull. vulg. Turionensis*).

There are several sub-varieties of the above with round, oblong, conical, or sugar-loaf heads, all of them are excellent autumnal greens. The Green Savoy should be first used, as it is less hardy than the Yellow, and the Dwarf is said to be the hardiest of them all. Any of them will, however, stand ordinary frosts, by which the delicacy of their flavour is much improved. The Savoy is always raised from seed, and for a seed-bed 4 feet and a half by 8 feet, half an ounce of seed will be sufficient. This esculent answers on a light rich soil, poor or exhausted ground should be manured according to the defects of it. Allot an open compartment in the full air, that the seedlings and advancing plants may grow stocky, and not draw up weak and long-stemmed, as they are liable to do in close situations or narrow borders under walls. As to the time of sowing the seeds a sufficient succession is obtained by three or at most four sowings. The first about the middle or latter end of February, these will be ready in August or September, and they will be finely cabbaged by October, and continue in good perfection all November, December, and perhaps January. The second about the middle or latter end of March ; these will be ready to serve from about Michaelmas to Christmas. The third both at the beginning and end of March, full crops should now be sown for the first considerable autumn and winter crop. The fourth in May. For the culture of the Savoy the ground should be previously trenched to a good depth. Four feet is a convenient width for the seed-beds. Sow broad-cast, and rake it in a quarter of an inch deep. As soon as the plants have two or three leaves, an inch or two in width, if they stand too crowded, thin the seed-beds by drawing out a quantity regularly, and prick them into other beds 4 inches asunder ; and should the weather be dry, water those left as well as those removed. Permit both divisions to remain three, four or five weeks to gain a good stocking size for final transplanting. When the plants are advanced with several leaves 2 or 3 inches broad or more, transplant them finally into the most open quarters of ground, where they will be less annoyed by caterpillars, that they may cabbage with large full heads, planting them at different times as ground becomes vacant. Remove the most forward in May or June for early autumn heading in August or September. But plant the principal crops in June or July, and from the beginning to the middle of August, taking all possible advantage of showery weather ; in drawing the plants observe if any are clubbed or knotty at the root, cut off the protuberances close. Plant those removed in May, June, or July in rows about two feet asunder, and by the same distance in the rows, others late planted in August or September two feet by eighteen inches. In scarcity of vacant ground, some Savoys may be occasionally planted between wide rows of previous standing crops, such as Beans, Cauliflowers, and early Cabbage, that are sufficiently forward to be gathered off by the time the Savoys will want the entire ground. Before and after planting in dry weather watering would be of essential service. As the plants of the different successions advance, keep them free from weeds by occasional draw-hoeing. At the same time loosen the surface of the earth, and draw some about the stems of the plants, let this be done twice or oftener, to forward them in a free enlarging growth. They will gradually heart, fully cabbaging in September, October, November, and December, &c. as they are the crops of the forward or the later sowings ; they may be cut for use accordingly, and during the winter. The Savoys left standing will continue good till the middle or end of February, when, or in the course of March they open and send up seed-stalks.

* *Brussels sprouts. Chou à jets, Chou à jets et rejets, Chou de Bruxelles, Chou à mille tetes, Chou vert à petites pommes le long du pied.* (*Fr.*) (*Brássica oleràcea, C. bullàta δ, gemmífera, D. C. l. c.*)

The Brussels sprouts is only considered a sub-variety of the

Savoy. It produces an elongated stem, often four feet high, beset with numerous green heads like Savoys in miniature, the whole ranged spirally along the stem, the main leaves of which drop off early. The top of the plant resembles that of a Savoy planted late in the season; it is small, with a green heart of little value. Van Mons says, Hort. trans. vol. 3. "If this vegetable be compared with any other that occupies as little space, lasts as long, and grows as well in situations generally considered unfavourable, such as between rows of potatoes, scarlet-runners or among young trees, it must be considered superior in utility to most others." Nicol considers it deserving more general culture in Scotland; and Morgan, Hort. trans. vol. 2. says it is an excellent sort of green for the winter, but not sufficiently hardy to last through the winter in England. The sprouts are used as winter greens, and at Brussels they are sometimes served at table with a sauce, composed of vinegar, butter, and nutmeg, poured upon them hot after they have been boiled. The top, Van Mons says, is very delicate when dressed, and quite different in flavour from the sprouts. The plants are raised from seed, of which an ounce may be requisite for a seed-bed 4 feet by 10. The first sowing of a full crop should be in April. The second in May. Van Mons, in a paper already referred to, says, "The seed is sown in spring under a frame, so as to bring the plants forward; they are then transplanted into an open border with a good aspect. By thus beginning early, and sowing successively till late in the season," he says, "we contrive to supply ourselves in Belgium with this delicious vegetable full ten months in the year, that is, from the end of July till the end of May. The plants need not be placed at more than 18 inches asunder, as the head never spreads wide, and the side leaves soon drop off. In this and every other respect, the cultivation is the same as the Borecole." As to gathering the crop, Morgan says, the sprouts must have some frost before they are gathered, but this, Van Mons says, is an erroneous opinion. In Belgium the small cabbages are not esteemed if of more than half an inch in diameter. It is usual to cut the tops off ten or fifteen days before gathering the sprouts from the stem. In spring, when the sprouts are disposed to run to flower, their growth is checked, by taking up the plants and laying them in the ground in a shaded spot. As to the saving of seeds, Van Mons says it is usual to save indiscriminately from topped or untopped plants, but that he intends to save them from the topped plants only, hoping thereby to improve the progeny. In order to procure genuine seed of the Brussels sprouts, it is necessary to have them sent direct from Brussels.

* * *Chou de Milan* is considered as a variety of the Brussels sprouts, and it grows with an elongated stem something like it as well as in general habit, except that the side shoots, instead of forming little close cabbages, are open like Borecoles. The principal leaves of this plant are not very large; they are wrinkled like the Savoy, and form a small crown on the top of the plant, which remains open and does not cabbage, the top may be cut off and used in February. Even if not wanted for use, the head should be taken off at that period to forward the growth of the sprouts, which come into full use early in March, when those of the German kale are too far advanced. When dressed they are particularly rich and delicate. Abercrombie says this plant, to admit of its full growth, requires a yard square, but that it continues the longest in spring of any of the tall greens without running to seed. The cultivation, in every other respect, is the same as the Borecoles or Brussels sprouts.

To save seed. The grand object is to place the plants where they will be in no danger of being impregnated with the farina of any other of the *Brássica* tribe. A few good plants should be selected and planted in an open spot by themselves in the spring, where the seeds will ripen in August. No more than one sort can be safely grown in the same garden, &c.

§ 4 *Cabbage. Chou pomme*, or *Cabus, Chou en tete, Chou pommé à feuilles lisses, Brassica Oleràcea, D. capitata*, D. C. l. c. *Kopfkohl*, (*Ger.*) *Cavolo, Capuccia.* (*Ital.*)

* White Cabbage.

The varieties of the White Cabbage are too well known, and their uses too universal, to require any description here. They produce firm compact heads, glaucous green, or greenish-yellow leaves externally, but blanched within; and varying in different sorts from 3 to 12 or 15 inches in diameter, and from 2 to 15 or twenty pounds weight. The varieties are numerous, but the sorts chiefly cultivated are as follow:—

* *Heads oblong, or elliptical.*

1. Small early dwarf
2. Early dwarf, York
3. Large early York
4. Large oblong hollow
5. Long-sided hollow

} *Brássica oleràcea, D. Capitàta, S. elliptica* D. C. l. c. *Chou à tete ovale, Chou d'York, &c.* (Fr.)

* * *Heads conical.*

1. Early dwarf sugar-loaf
2. Large sugar-loaf
3. East Ham
4. West Ham
5. Early Battersea
6. Late Battersea
7. Early Imperial
8. Wellington
9. Antwerp
10. Russian
11. Early London hollow
12. Large hollow sugar-loaf
13. Emperor
14. Early heart-shaped
15. Paington
16. Plaw's early Deptford

} *Brássica oleràcea, D. Capitàta, E. conica*, D. C. l. c. *Chou pain de sucre, Chou chicon, Chou d'Ambervilliers, Chou de Battersea, &c.*, (Fr.)

This last variety is excellent, both for early and late crops.

* * * *Heads large round.*

1. Large round winter white
2. Great round Scotch, or White Strasbourgh, from which the German sour krout is chiefly made.

} *Brássica oleràcea, D. Capitàta, B. sphæ'rica álba. Chou cabus commun, Chou pommé commun, &c.* (Fr.)

* * * * *Heads with flat tops.*

1. Great drum-head flat-topped
2. Bainbrige's flat Dutch

} *Brássica oleràcea, D. Capitàta, a depressa. Chou pomme à tete aplatie. Audib.*

* * * * * *Heads obovate.*

1. Obovate headed Cabbage, or Pentonville. This is a large obovate-headed kind; leaves white and fleshy, wrinkled like the savoy. Very delicate and fine, in perfection during the latter summer months, when other cabbages are of strong flavour.

} *Brássica oleràcea, D. Capitàta, γ obovàta* D. C. l. c. *Chou à tete obovale Audib.* It appears from the description that the *Pentonville Cabbage* is a variety of *Savoy*.

The first seven or eight sorts are suitable for the earliest and secondary crops; and the middle-sized and large kinds for the principal summer, autumn, and winter supplies. 1. For the earliest crops allot some of the small kinds, such as the Early dwarf York, East and West Ham, Early Imperial, Early Battersea, Wellington, Early London hollow, Early dwarf sugar-loaf, Plaw's early Deptford, &c., for cabbaging in April, May, and June. 2. Raise more considerable quantities of the middle-sized

sorts; particularly Large early York, Large hollow sugar-loaf, Early Battersea, Plaw s early Deptford, Penton, Early Imperial, Antwerp, Russian, Emperor, Wellington, Large oblong hollow, &c., for general summer crops. 3. Choose the larger later sorts, for succession, summer, and general autumn cabbages. The Large hollow sugar-loaf, Large oblong hollow, Long-sided hollow, Large round winter (white), Late Battersea, Large sugar-loaf, &c., are excellent for late cabbaging in August, September, or October, till Christmas; or any of the middle-sized varieties may be eligibly sown for latter succession-crops in summer and autumn, to cut in light young growth; also to cultivate for cabbage-colewort, either with small hearts, or as open greens for family and market supply, in autumn, winter, spring, and returning summer. 4. Large round winter cabbage, Great round Scotch, Great drum-head, Baimbridge's flat Dutch, and American kinds, all reaching a very expanded bulk in autumn and winter, are not usually so well fitted for family consumption as the foregoing, being more commonly adopted for field culture, to feed cattle in winter.

Propagation. All the kinds are raised from seed annually, of which, according to Abercrombie's seed-estimate, for a seed-bed to raise the Early York and similar varieties, 4 feet wide, by 20 in length, 2 ounces will be required. For a seed-bed to raise the Large sugar-loaf, and other luxuriant growers, 4 feet by 36 in length, 2 ounces. But according to Mac-Kintosh, one ounce of seed of the early sorts will sow a seed-bed of 40 feet square; and for the more luxuriant sorts, 1 ounce will sow a seed-bed of 60 feet square. Sow at four different seasons, covering the seed from an eighth to a quarter of an inch thick; that is, 1. In February, for use in July, August, or September; but if the winter has destroyed many of the plants which were sown the preceding August, it will be proper to sow some of the seed of the earlier sorts as the weather will permit; and if a few be forwarded by sowing them in a slight hot-bed, it will be a great advantage. 2. In April. Prefer for this sowing the Battersea, Antwerp, and Pentonville. 3. May. Sow the Sugar-loaf and any close quick hearting kinds for summer and autumn, colewort, and young autumn cabbages. 4. In August, in the first and second week, this time being most conducive to ultimate success. Some sow in the end of July, to have the plants stronger before the approach of winter; but of a crop so forward, many of them, and often all, run to seed. For this sowing prefer the Dwarf York, East Ham, Early Emperor, and Sugar-loaf, for the first crops; Large York, Large Sugar-loaf, Battersea, Penton, Imperial, Antwerp, Russian, &c. for the secondary spring crops.

Soil and situation. The soil for seedlings should be light, and, excepting for early sowing, not rich. Where market Gardeners raise great quantities of seedling cabbages, to stand the winter, and to be sold for transplanting in spring, they choose, in general, the poorest and stiffest piece of land they have got, more especially in Scotland, where large autumnal sowings of Winter drum-head and round Scotch are annually made, and where the stiffness of the soil gives a peculiar firmness of texture and hardness of constitution to the plants, and prevents their being thrown out of the soil during the thaws. Transplanted cabbages require a rich soil, rather clayey than sandy, and, as Mr. Neill and Mr. Nichol observe, it can scarcely be too much manured, as they are an exhausting crop. Autumnal plantations, intended to stand the winter, should have a dry soil, well dug and manured, and of a favorable aspect. The cabbage tribe, whether in the seed-bed or final plantation, ever require an open situation; for under the drip of trees, or in the shade, seedlings are drawn up weak, and grown crops are meagre, worm-eaten, and ill-flavoured.

Autumnal sown crop, or those sown in August. Sow each sort separately; give occasional watering if the weather is dry or hot, or sometimes shade with mats in hot sunny days, till the plants come up fully; after which continue necessary moderate watering, if a dry season, to forward and strengthen the crop. When the plants have two or three leaves, an inch or two broad, in September, or the beginning of October, lift some considerable portion from the seed-beds, and prick into beds of good earth, about 4 inches apart, giving water. All these are to remain in the intermediate beds during winter, to gain strength for transplanting in the spring. Those left in the seed-beds will thus have more room to advance equally for transplanting, the most forward of the early sorts in the same year, towards the end of October, or in November or December; and the principal in the spring, the last fortnight of February, or in March or April.

February, March, or April sown crop. It is requisite to sow in the spring, to raise plants to succeed the August-sown crop, for use the same year, partly as young summer cabbages, and partly for heading in the autumn and winter. For this purpose sow at the close of February or in March, or the beginning of April. A few for early summer use may be sown on a slight hot-bed, or on a warm border under glass. Sow the different kinds separately, and treat them in the same manner as recommended for the last sowing. When the plants are of sufficient size for final transplanting, in May, June, or July, taking advantage of moist weather if it occurs, plant them out in rows, from one to two feet asunder for the dwarf and middle-sized kinds, and for the large kinds from two feet and a half to a yard distant. Give water at planting, if the weather be dry. In their subsequent growth draw-hoe them occasionally, to kill weeds, and to draw earth round the stems.

May to July-sown crops. For late young summer and autumn cabbages, and winter plants, sow small portions at any time from May to July, principally of the quick-hearting kinds. Plant them out finally in summer and autumn, to produce young heads and small cabbage-hearted coleworts in August, September, October, and thence till midwinter. The large, late, family cabbages, which make returns for autumn, winter, and early spring; also the largest kinds usually adopted for field-culture, are to be excluded from this sowing, as they are properly raised as part of the principal crops sown in August, and early in spring. *Abercrombie.*

Kinds proper for Coleworts. The original variety of cabbage called colewort, is, or seems to be, lost; and is now succeeded by what are called cabbage-coleworts. These, Abercrombie says, are valuable family plants, useful in three stages; as young open greens, as greens with closing hearts, and as greens forming a cabbage growth. Procure seeds of some middle-sized early kind, quick-hearting, and of close growth, such as the early and large York, East Ham, Sugar-loaf, and Wellington. Occasionally for larger coleworts, you may adopt some Battersea, Imperial, Antwerp, and Early London hollow; but avoid the larger late kinds, which, in a colewort state, are too spreading and open; the others are close, stocky, and full of heart, and boil most tender and sweet for the table.

Times of sowing Cabbage for Coleworts. To have a good supply of coleworts for autumn, winter, or spring and returning summer, it is proper to make three or four sowings in summer and autumn; that is, one sowing towards the middle of June, a second at the same time in July, and the third in the last week of the same month. These crops are for transplanting in August, September, and October, and will amount to a continued provision for autumn, winter, and early spring coleworts, from September till March or April. At this time the plants of these sowings will start for flowering. To succeed these a considerable sowing should be made in the beginning, from the 3d to 6th of August. Having been transplanted in autumn, the for-

wardest of these plants will be fit for gathering in the course of winter, if the weather be mild; but the principal part should be set apart for a continuing spring crop, to increase in growth from March till June, without running to seed, as would generally be the case if sown before the time just specified. What are not used in their colewort state in spring, will advance to cabbaging, to be cut either with small hearts, or with middling or full heads, in the early part of summer and autumn; and if it be required to have coleworts in a younger state in summer and autumn, you may sow at the time of raising the spring-sown crop of cabbages.

Taking in the crop. After taking off the head, never neglect immediately to pull up the stalk, and carry it off, with all the refuse leaves, to the compost heap, in order that the stems may not push out shoots to exhaust the ground needlessly, as well as to promote neatness and order. Some, who instead of removing the roots and stems of the main summer crop, leave them in the ground, deprived of their injured leaves, and with the intervals between the rows stirred, and perhaps manured, allow them to stand till spring. Thus treated they push out in autumn; and in January or February abound in fine cabbage-sprouts, not much inferior to young cabbages. Sometimes this practice is applied to the earliest spring or summer sorts, in which case the sprout cabbages come into use the following autumn. *Cabbage Coleworts* are gathered when the leaves are as broad as a man's hand. The largest are drawn up by the root, which is usually allowed to remain attached to those taken to public market, as it retains the sap, and tends to preserve them succulent a longer period than if the root was taken off.

** *Red Cabbage. Chou pommé rouge* (Fr.) *Roth Kopfkohl* (Germ.) *Cavolo rosso (Ital.) Brássica oleràcea, D. Capitata.* ** *rubra*, D. C. l. c.

This variety is similar in form to the White Cabbage, but of a purple or brownish-red colour. The red cabbage is chiefly used for pickling or garnishing; and the dwarf red variety, Mr. Neill observes, certainly does make one of the most beautiful pickles that can be presented at table. Both the dwarf and large sorts are sometimes shredded down in winter salads, like beet-root; and the Germans prepare sour krout from all or any of the varieties.

The following are the principal varieties of Red Cabbage:

1 Large red, or Red Dutch, with a large firm round head, usually cultivated in market gardens.

2 Dwarf red, with a small round, firm, delicate head, less common than the other, chiefly cultivated in gentlemen's gardens.

3 Aberdeen red, with an open leafy head, chiefly found in cottage gardens in the north of Scotland, and is an ingredient in the national dish, the kale brose.

The propagation, sowing, and culture, are in all respects the same as for the winter cabbages, excepting that the heads are not used when imperfectly formed, or as coleworts, but the plants should in all cases be allowed to stand till they have formed close firm heads. Sow in August, for a crop to stand the winter, and to come in at the close of next summer, and thence till the end of autumn. Sow early in spring for returns in the following winter or spring.

To save seeds of the different kinds of Cabbages, says Mr. Neill, affords employment to many persons in various parts of England. No plant is more liable to be spoilt by cross-breeds than the cabbage tribe; therefore the kinds must be kept, when in flower, at a considerable distance from each other. Bees are extremely apt to carry the pollen of one to the other, and produce confusion in the progeny. Market gardeners, and some private individuals, raise seed for their own use. For this purpose some of the handsomest cabbages are dug up in autumn, and sunk in the ground to the head; early next summer the flowers appear, and abundance of seed is produced. When the seed has been well ripened, it will keep good for eight or ten years. It has been observed, that seed gathered from the entire plant produce better plants than those that are gathered from the sprouts of plants that the heads have been taken off.

§ 5. *Turnip-stemmed Cabbage. Chou-rave* (Fr.) *Rabi-kale or Cole or Kohl-rube* (Germ.) *Egyptian kale. Cape Cabbage.* (*Brássica oleràcea, E. caulo-ràpa, D. C. l. c.*)

These resemble the Swedish turnip, which has shot into a head. The stalk is very thick, and extends above ten inches above the ground, and this thick stem has the appearance of a turnip above ground. The principal varieties are the following:

1. *Egyptian Kale, Rabi-kale (D. C. l. c.)* The stalk of this variety is very thick, and extends about 10 inches above the ground; the leaves are narrow without crenatures, but generally have at the lower part a strong undulation on each side; they are of a glaucous-green, like those of the Swedish turnip. It is chiefly grown in cottage-gardens, but this is not the true Turnip Cabbage. This plant is probably a slight sub-variety of the following.

2 *White Turnip-stemmed Cabbage* (Engl.) *Chou-rave-blanc. Chou-rave-commun, Chou de Siam,* (Fr.) *Knol-kohl* (Cape.) *B. oleràcea, E. caulo-ràpa* * *álba,* (*D. C. l. c.*) *Kohl-rube,* or *Kohl-rabi* (Germ.) *Cabola* (Ital.) The stem is thick with a round or oval gibbosity in the middle like a turnip, two or three inches from the ground, from which the leaves proceed; they are glaucous-green. The heart is open and not cabbaged. The plant has not long been introduced, and has chiefly been cultivated as food for cattle. It is very common in the north of Europe, especially in Sweden and Poland, where it is to be found in every cottage-garden. The turnip part of the stem pared and sliced down, is used in soups like the turnip, and sometimes also served whole, but unless they are used when very young they soon become rank. The leaves are used like those of greens or coleworts, but as Abercrombie remarks, unless when very young, are disagreeable and rank tasted. This appears scarcely to be a variety of the last. *Knol-kohl* of the Cape and East Indies.

3 *Chou-rave-violet* (Fr.) *Purple Turnip-stemmed kale. Brássica oleràcea, E. Caulo-ràpa* ** *purpurascens,* (*D. C. l. c.*) This variety is distinguished from the last in having purplish leaves and stems. The turnip on the stem is nearly of the same shape, and the plant is cultivated for the same purposes.

4 *Chou-rave crepu* (Fr.) *Puvonazza* (Ital.) (*Brássica oleràcea, E. caulo-ràpa β, críspa D. C. l. c.*) This variety grows short on the ground, and in the spring shoots up strongly from the crown and sides, which are curled and fringed on the edges. The bulb on the stem is not so thick as in the two last varieties. The plant is chiefly cultivated at Naples.

The propagation, sowing, culture, and saving seed are in all respects the same as for the varieties of Borecole, which see.

§ 6. *Cauliflower and Brocoli.* (*Brássica oleràcea, F. botrytis, D. C. l. c.*) These are distinguished from the other varieties of *Brássica oleràcea,* by the peduncles and racemes being corymbose, very fleshy, and very much crowded before flowering.

* *Cauliflower, Chou-fleur* (Fr.) *Blumenkohl* (Germ.) *Cavolo fiori* (Ital.) This is one of the most delicate and curious of the whole of the *Brassica* tribe, the flower-buds forming a close firm cluster or head, white and delicate, and for the sake of which the plant is cultivated. These heads or flowers being boiled, wrapped generally in a clean linen cloth, are served up as a most delicate dish. Cauliflower is a particular favourite in this country. "Of all the flowers in the garden," Dr. Johnson used to say, "I like the cauliflower." Its culture, however, had been but little attended to till about the close of the 17th century; since that time it has been greatly improved, insomuch

that Cauliflower may now fairly be claimed as peculiarly an English product. Till the time of the French Revolution quantities of English cauliflower were regularly sent to Holland and the Low Countries, and even France depended on us for cauliflower seed. Even now, English seed is preferred to any other. For the early supply of the London market, very great quantities of Cauliflower are fostered under hand-glasses during winter and the first part of spring; and to behold some acres overspread with such glasses, gives a stranger a favourable idea of the richness and luxury of the capital. (*Neill.*)

The following are the names of the varieties most in cultivation:—

1 Early, for the first early crops.

2 Later or Large, for principal early and main crops.

3 Red Cauliflower, having the stalks or heads of reddish-purple colour, esteemed more hardy than the others, and good for an early crop.

Very little difference in quality has been discovered between these three varieties. Their distinctions are too trifling to merit the attention of practical horticulturists. Like the rest of the tribe they are apt to sport into degenerate varieties. "An action for damages was brought in Westminster Hall, against a poor but unfortunate gardener for selling cauliflower seed, which only produced long-leaved cabbages." This circumstance has been particularly noticed by Linnæus.

Propagation and Soil. The Cauliflower is raised from seed, of which half an ounce is sufficient for a seed-bed four feet and a half wide by ten in length, or a bed of 40 square feet. The soil for the seed-bed may be light, but for final transplanting it can hardly be too rich, the Cauliflower, like the vine, being reputed "a rough feeder." Cleanings of streets, stables, cess-pools, &c. ought therefore to be liberally supplied during the growth of the plants, when very large heads are desired.

Times of sowing. The early and main superior crop, brought to fruit by the longest nursery attendance; the late summer succession crop, raised by the shortest course, and the Michaelmas crop, obtained at the least expense, are sown respectively at three different periods. The principal sowing is made about the end of the third week in August, or about the middle of the month, to stand over the winter under frames, hand-glasses, or half sheltered in warm borders, for the early and main superior crops next summer. A secondary sowing in February or March, for succession and late inferior crops, but in order to bring the plants up early and to forward them twelve days or a fortnight in their growth, it will be well to sow them in a moderate hot-bed. Make the bed about twenty inches or two feet thick of dung, on which put a frame, then lay four or five inches in depth of rich earth over the bed. Sow the seed on the surface, cover it a quarter of an inch thick of like rich earth, and then set the glass on. As soon as the plants appear, let them have air every day by tilting the glass a considerable height, and in mild weather the lights may be taken quite off in the day-time, for if kept too close it would cause them to grow up weak. But where there is not the convenience of a frame, cover the bed at nights and in bad weather with Dutch mats over hoops or long sticks, sprinkle them with water occasionally if the weather be dry. Those sown in March require the same treatment as the February sowings. Cauliflower for a successional crop may be sown any time in the month of May on a sheltered border, about the end of this month a second sowing may be made for the last crop of the season, on a free open spot of light earth; these last will come into use the following autumn or winter.

Mr. W. Ball finds that if cauliflower-seed is not sown till the last week in August, and that if the seedlings are not transplanted till the middle or near the end of November, before the hard weather sets in, no sort of covering is necessary, nor any other protection than that afforded by a wall having a south aspect; in such a border, and without any covering, young cauliflower-plants have uniformly stood well for many successive winters, and have always proved better and sounder plants for spring planting than such as have had additional shelter. The seedlings protected with glass-frames generally grow too gross in the stems, which become partly blackened, and the plants being thus unhealthy are not fit for planting out. Late raised seedlings which spend the winter in the open border, uniformly become the largest and finest table cauliflowers during the summer, though they certainly do not come in quite so early. Cauliflower plants, it is probable, are often killed with too much attention. Seedlings raised in autumn seem to be very tenacious of life. (*Caled. hort. mem.* 3. *p.* 192.)

A method of producing Cauliflower pretty early and with great certainty is this; the plants are set in small pots in the winter season and kept in any convenient part of the floor of a vinery or other glazed house. In the beginning of March they are taken out of the pots with the ball of earth attached, and planted in the open ground. If they be here protected against severe frosts with bell-glass covers, they come into head in the course of April, if the weather prove favorable. (*Neill.*) The following method of obtaining a crop of early cauliflower is recommended by an anonymous correspondent in Loudon's Gardener's Magazine. From a seed-bed which has been sown two or three days after rather than before the customary period, select a score or two of healthy plants; pot them singly in the smallest sized garden-pots in rich loamy compost, water and plunge them in a cold frame, shading for a short time until they have taken root. Afterwards give them air daily, drawing on the lights at night and defending them from severe frost with mats, water frequently with tepid manured water, and keep clear from decayed leaves and weeds. Examine the state of the roots from time to time, and as they become in the least degree matted, immediately shift in forty-eight sized pots with the before-mentioned compost, and replace them carefully in the same frame and attending to them as before. When the roots have nearly filled these last pots, shift into thirty-twos, and in due time they will ultimately require twenty-fours, or if they have grown rapidly even eighteens. After being firmly established in these, they may be removed into a vinery, peach, or other forcing-house, there to remain till the end of March or beginning of April, when they may be turned out into the open air between the asparagus-beds or any other warm or sheltered spot. They will require to be put in very deep and protected by hand-glasses, or at least by boughs of trees, that they may not suffer from the sudden transition of weather or inclement skies. It is hardly necessary to add that the whole success of this method of culture depends entirely on the plants receiving no check in any stage of their growth, either from want of timely repotting, water, air, of sufficient protection from frost; while in the house if not supplied with water in pans they are very liable to button, and thereby wholly defeat the end in view.

Crop to stand the winter. For the early and general crops next summer, make considerable sowings from the middle till near the end of August, to stand the winter, some being finally planted out the same year in warm borders in October or November under hand-glasses, and the others pricked out into frames and warm borders for planting out finally in the spring into the open ground to succeed the hand-glass heads or for the general summer-crop. Sow in a bed of rich light mellow earth. After sowing give occasional light waterings in dry weather, and shade in hot sunny days till the plants come up, when these have leaves an inch or an inch and half broad in September, prick them into intermediate beds three or four inches apart,

watering and occasionally shading from the mid-day sun, till they have taken root; to remain in such beds till they have gained strength till October.

Hand-glass Division. "Towards the close of October, transplant a quantity finally into rich ground, which has been well dunged, under hand-glasses in rows three feet and a half or four feet asunder, with intervening alleys a foot wide, and three feet apart in a row. Set three, four or six plants centrally under each glass about four inches apart, with the design of retaining only two or three of the best plants in the spring. Give a moderate watering at planting, and put on the glasses close till the plants take root, discoverable in a week or ten days, by their shewing a renewed growth; then raise the glasses on the warmest side, one or two inches in mild days, to admit free air to the plants. Continue the glasses all winter, but in all temperate weather tilt up the south side daily two or three inches to give the requisite admission of free air. You may occasionally take the glasses off, especially if the plants appear to draw or get on too fast in growth, as they are sometimes apt to run into small button heads in their nursery state, useless for future culture; but put on the glasses early towards evening, and always keep them on at night and during cold rain, snow, and frosts, shutting them close down in all inclement weather, and during rigorous frosts it would be advisable to give some protection with long dry stable litter round the glasses, or to cover with mats, removing the covering when mild settled weather occurs. Thus conforming to the vicissitudes of the weather, continue the glasses till the close of April or beginning of May, giving larger admissions of free air as the warmer season of spring advances, and sometimes in fine mild weather admit a moderate warm shower of rain. Meanwhile in March, if all or most of the plants under the glasses have stood the winter, be careful to leave only one or two of the strongest under each glass, transplanting the superabundant into the open garden in a quarter of rich mellow earth, improved with rotten dung dug in a spade deep; setting the plants two feet and a half asunder, and giving water. In thinning the plants be careful in taking out those with black shanks, but do not take the trouble to transplant them, for they will prove abortive. At the same time, to assist those remaining under the glasses, draw a little earth about the stem of each. To these continue the glasses till the period mentioned above to forward them in full growth for the most early production; but as they expand in the herb raise each glass upon the props three or four inches high, to admit air freely, and to give a larger scope of room above, for the free growth of the plants, or when further advanced you may draw a small ledge of earth round the bottom of each glass, both to raise the props higher for an additional upward space, and to contain water when occasionally given in dry weather. Towards the end of April or the beginning of May, when the plants will in a manner have filled the glasses, remove these from the most forward, but continue the aid of glass as long as practicable, to accelerate the plants into early heading in May. Thus the most early crop will produce a supply of flower-heads for gatherings in succession in May and June."

Frame Division. "The other plants of the same sowing designed for wintering in frames, may in young growth, at the end of September or beginning of October, be either pricked at once into the winter beds, or be at that time removed into a preparatory bed in the open garden, to have a month's growth in order to be transplanted into the frame beds in the end of October or beginning of November in rows, crosswise, four or three inches apart in the bed, covering the surface with dry ashes or sharp sand. Give a light watering, and put on the lights close till the plants have taken root, then prop up the lights behind two or three inches, or draw them off occasionally to the back of the frames in mild dry days, but keep them on when very cold, and in rain, snow, frost, and always at night, and in severe frost cover the glasses and round the frames with dry long strawy litter and mats; but in all mild, dry weather admit the air fully as in managing the hand-glasses. Then in March or beginning of April, transplant the whole into the open garden in rows two feet and a half asunder, and they will come into full production in July and August."

Half-sheltered Portion. "In want of frames or hand-glasses, you may in October either prick some plants into a warm south border close under the fence, three inches apart to be protected in rigorous frosts with mats, dry litter or reed pannels; or you may prick some into a bed, arched over with hoops, to receive a covering of mats during cold nights or heavy rains, snow or frosts in the day-time in winter. Give the full air in all moderate weather till March or April, then all to be transplanted finally as above."

Secondary sowing or first spring-raised crop. "For late succession summer cauliflower to succeed the autumn-raised early and main summer crops, or if none were raised to stand the winter. Sow in February or beginning of March in a moderate hot-bed, or where that cannot be had, in a warm border under a frame or hand-glass, and when the young plants have leaves an inch broad, prick them into other beds of the same description, three inches apart, to gain strength by three or four weeks growth, in order to be planted out into the open garden at the end of April or beginning of May, where they will produce tolerable heads in July or August. Sow also in the open garden during the last fortnight in March and the first in April for a later succession with small heads in August and throughout autumn. Plants of the late crop removed as late as May for fruiting the same year should be planted in a shady border."

Second spring-raised crop. "The next and last sowing is for the late autumn and winter crop, commonly called the Michaelmas crop, to be made towards the 24th of May, in a bed of light earth. Prick out the young plants in June to remain in the intermediate bed till about the middle of July, then to be transplanted two-feet and a half asunder. Give occasional watering till they have taken good root. They will begin to produce heads in October, but they will be of superior size in November and December if temperate weather follows.

Final culture of the three crops. "With respect to the culture of the different crops, after being finally transplanted, it is to hoe the ground occasionally in order to cut down weeds, and as well to loosen the earth and draw some round the stems of the plants. When the early crops are nearly advanced to full growth in May and June, one or two good waterings to the roots will contribute to their producing large heads. In the dry weather of meridian summer water those not in flower twice a-week, and those in flower every second day. As the flower heads shew themselves turn down some of the larger leaves to defend them from sun and rain, and to preserve them white and close in perfection." *Abercrombie.*

Insects and Slugs. "Cauliflower plants when first planted out are frequently infested with flies or their larvæ, to attract which it is not uncommon to sow a little radish-seed on the Cauliflower ground a fortnight before transplanting, the flies preferring the tender leaves of the radish to those of the cauliflower, the latter are thus suffered to escape." *Loudon.*

Look carefully once a-week or oftener, if mild weather, over the cauliflower plants, as slugs will destroy many of them, the best way is to pick them carefully off with the hand. Laying a little chaff round the plants is said to keep off slugs. In severe weather mice and rats will be apt to destroy them; recourse must then be had to poison and traps. The plants should be kept clean from dead leaves and weeds.

Storing or Preserving during Winter. "Cauliflowers may be preserved for a considerable time by various methods. About the end of the month of October pick out all those that have close and well-shaped heads, lift them carefully with a spade, dress off most of the leaves above the flower, remove them to an open-shed, and lay them in by the heels, as it is called, among rotten tan or dry mould, place them closely together, but not so as to touch each other. In this state, if kept free of damp, they will continue good for some time after those in the open air are exhausted. They may also be carefully taken up, and stored in the same way in the borders of any peach-house or vinery, observing to shut up the lights during rain, and also on frosty nights. They may also be protected in deep garden-frames, or they may be taken up in a dry day and carried to an airy shed, and tied in pairs, and hung up on poles or strong nails with their heads downwards; or they may be cut over about six inches below the flower, and a few of their leaves left to be wrapped round them, and buried about eighteen inches below the surface, in a dry bank or among sand, in a cellar or out-house.

"The most successful method we have practised for preserving Cauliflower in perfection through the winter months is to cut them in dry weather, dress off all their leaves, put them in an airy place to dry for a day or two, then bury them in casks or boxes amongst bog-mould, composed of vegetable matter, such as is dry for fuel. This kind is antiseptic and capable of resisting putrefaction, particularly when excluded from atmospheric air. Cauliflower preserved in this way should be well washed previously to using, as they become black when buried any length of time; not that such blackness proceeds from any decomposition of the heads, but arises from the more subtile particles of the mould adhering to their surface." *Mackintosh.*

A method of preserving Cauliflower is mentioned, *Cal. hort. soc. mem. vol.* 1. *p.* 129, and which consists in burying the entire plant in a pit about eighteen inches deep, dug along the bottom of a wall. On a dry day the plants are taken up and the leaves are wrapped round the head or flower, they are then deposited in the trench, the heads sloping downwards and the roots extending upwards, so that the roots of one layer cover the tops of another. Next the whole are covered closely with earth, sloping it from the wall and beating it smooth with the back of the spade so that the rain may run off. In this way they are preserved from November to January.

To save Seed. "Mark and leave some prime plants of the thoroughly nursed early and main crops in May and June, when the flower heads are in highest perfection, as those of late production will not ripen seed effectually. The stools will afford ripe seed in September, when be careful to watch the chaffinches, green-birds, &c. to gather the branches as the seed upon them ripens. Lay them elevated from the ground in some sunny, airy situation, to dry and harden to full maturity; after which let the seed be beaten or rubbed out, cleaned and sifted from the husky parts, spread on a cloth to dry the whole equally, and then put up for sowing the following year." *Abercrombie.*

* * *Brocoli*, (Eng.) *Broccoli* (Fr.) *Italienesche Kohl* (Ger.) *Cavolo Romano*, or *Broccoli* (Ital.) (*Brássica oleràcea, F. botrytis.* * * *asparagoìdes*, D. C. l. c.)

Brocoli is scarcely distinguishable from *Cauliflower.* The stem is usually taller; the leaves are more elongated; the peduncles are fleshy at the top, bearing small flower-buds, and of a hardier constitution. The varieties are divided into the *White* and *Purple Brocoli;* there are numerous sub-varieties of each.

In Miller's Dictionary, under the article *Brassica*, the few *Brocolis* that were then known are supposed to have proceeded from the *Cauliflower*, which was originally imported from the Isle of Cyprus about the middle of the 16th century. Miller mentions the *White* and *Purple* or *Maltese Brocoli* as coming from Italy, and it is conjectured that from these two sorts all the subsequent kinds have arisen, either by accidental or premeditated impregnation. Miller mentions the *Roman Neapolitan* and *Black Brocoli* as being in use in his time, but he says of those the Roman is the best.

Mr. Neill observes, that no culinary plant is so liable to sport as *Brocoli;* so that new kinds, slightly different, are continually coming into notice or favour, and as speedily sinking into neglect. Maher observes (Hort. trans. 1. p. 116.) that as all plants of the *Brassica* tribe become less alkalescent and more palatable in proportion as they approach to a pale or white colour, such varieties of *Brocoli* will undoubtedly be preferable to purple ones if they turn out equally hardy. An able writer on this subject, H. Ronalds, of Brentford, has given (Hort. trans. 3.) a description of different varieties of *Brocoli*, with an account of the method of cultivating them; from this and any new additional information on this subject, in Loudon's encycl. gard., we shall chiefly compose this article.

§. *Varieties and their Culture.*

1 *Purple, Cape,* or *Autumnal Brocoli.* This has a close compact head, of a beautiful colour; the leaves are almost entire, erect, concave, lobed at the base, and much waved, short, and regularly surrounding the head; the veins and midrib are stained with purple, which stain is a test of its being true; the head is exposed to the view in growing; in general it is not very large, as it enlarges the projecting parts of the flower shew a greenish-white colour mixed with purple. When boiled the whole head becomes green. If the season is showery, and this variety is planted in good ground, it comes as large as *Cauliflower.*

Cult. Sown about the middle of May or beginning of June, it will produce in regular succession from August till December, or until the frost destroys the heads. When sown in July or August, if the winter is mild, it will bring good heads in spring. When sown in the beginning of September and then preserved in frames as *Cauliflowers*, fine heads may be expected in the months of June or July. Thus by good management this kind may be in use the greater part of the year, but it is not hardy enough to be depended on in the winter months. The plants grow from one foot to a foot and a half, and should be placed about two feet apart in every direction.

Maher's mode of treating the *Purple Brocoli* is as follows. Three crops are sown annually: the first between the 12th and 18th of April, a second between the 18th and 24th of May, the third between the 19th and 25th of August; these successive crops supply the family from September till the end of May. The seeds are sown very thinly on a border of very rich light earth. Not a weed is suffered to grow, and when the plants have from eight to ten leaves, which is in about a month, they are finally transplanted, two feet asunder every way, in a piece of sandy loam, which has been well prepared by digging, and enriched by a large proportion of very rotten dung, frequently turned over to pick out every sort of grub or insect. The ground is kept clean by frequent hoeing, and the loose surface is drawn round the stems into a heap. The second crop is treated exactly as the first, but the weaker plants are left in the seed-bed eight or ten days longer to gain strength. They are then transplanted from the bed into eighteen sized pots filled with rich earth, then placing them close to each other in the shade, and duly watering the plants till they begin to grow freely. After this the pots are plunged in the open ground two feet distance each way, and about three inches under the common level of the ground, by this means a basin is formed round each plant, to retain any water given to them when necessary until the autumnal rains commence, when the basins are filled up by drawing the earth round each plant, at the same time pressing it firmly down, to prevent the wind from shaking them. A few of these sometimes

shew flowers too soon, and to guard them from early frost, a leaf or two is broken down over them. On the approach of settled frost in December or January, all the pots are taken up and removed to a frame-pit or shed, where they can be sheltered from the severity of the weather, but they should have plenty of air when it is mild. By this method a supply is preserved for the table in the hardest winters. Brocoli always succeeds best if planted finally from the seed-bed; if planted oftener the head is less in size, and runs much sooner after it forms, and even general crops should never be pricked out. The seeds of the third crop are sown in a frame or under hand-glasses, and about the third week in October the plants become strong enough to remove as in the two former crops.

2 Green Cape or Autumnal Brocoli. This sort differs but little from the preceding except in the colour and in the heads, as well as the plant proving in general larger. The leaves are long and narrow, much like those of *Cauliflower*; they are little waved, and consequently have a smooth appearance. The veins and mid-rib are green. The head, which has some resemblance to a *Cauliflower*, is of a greenish-white colour, and is usually somewhat covered by the leaves. These two sorts are very sportive, running much into each other, and have a strong tendency to degenerate, yet are quite distinct, and when so are very beautiful. The greatest care should be taken in sowing the seeds from plants that are very true. This remark applies generally to all sorts.

3 Grange's Early Cauliflower Brocoli. If this sort is sown at three different times from the beginning of May until the end of June, it will bear heads in succession from Michaelmas to Christmas, if the weather is not severe. The leaves covering the head defend it from slight attacks of frost, they have long naked foot-stalks, are wider and shorter than those of the *Green Cape*, and lobed at the base, but not much waved; the veins and mid-rib are whitish-green; the head is large and quite white. The plants should be planted two feet asunder each way. This kind will amply repay the expence of cultivation.

4 Green Close-headed Winter Brocoli. This is a good sort, apparently a seedling from the *Green-Cape*, which it closely succeeds in coming into use. The plants are dwarf, with spreading leaves, which are moderately indented, numerous, much waved, and large; the veins and mid-rib are white; the flowers grow exposed, nearly resembling that of the *Green-Cape* in appearance, and does not attain a great size. The peculiarity of this sort is that it continues to bear during the whole of the winter, if the weather is mild. A single plantation made from seeds sown in May, Ronalds found to yield heads fit for use through the months of November, December, January, and February. Plant from one foot and a half to two feet distance.

5 Early Purple Brocoli. This is a very excellent kind, of a deep purple colour, if the true sort; it is close-headed at first, afterwards it branches, but it is apt to come green and too much branched, especially in rich ground. The plants are from 2 to 3 feet, high growing, strong; the leaves are much indented, of a purplish-green colour; they spread out wide, but not long, though the stalks are so; the head is quite open from the leaves; small leaves are sometimes intermixed with the head, the plants produce sprouts or flowers from the axils of the leaves. When this kind is sown in April it begins to produce heads in November, and continues bearing heads and sprouts throughout the winter; if sown in June, it produces abundance of sprouts in March and April.

6 Early White Brocoli. The heads of this sort are of a close texture, and of a pure white colour. It grows to about 3 feet in height, with erect, concave, light-green, and nearly entire leaves. To obtain fine early heads of this sort, the seed should be sown in February or beginning of March on a slight hot-bed. The plants when about 3 or 4 inches high, must be transplanted into beds of light rich earth 3 or 4 inches apart, and defended from the frosts and cold nights by a mat covering; they will be strong enough to plant out finally at 2 or 3 feet distance by the end of April; under this treatment they will produce beautiful heads in November, and continue to do so until Christmas, if the weather is tolerably mild. This sort, as well as several others, is sometimes cut in considerable quantities by the market-gardeners previous to an expected frost, and kept in sheds or cellars for the supply of the market.

7 Dwarf Brown Close-headed Brocoli. This sort, from its colour, is supposed to have sprung from the *sulphur-coloured* Brocoli, from which, however, it differs in coming in earlier, as well as in the shape and colour of the heads; the leaves are also broader and shorter; they are small, not much waved, dark-green, with white veins; they grow upright, and do not cover the head at all. Most of the heads are green on their first appearance, but soon change to large handsome brown heads. If this kind be sown about the middle of April, it is in use throughout March and April. Two feet distance every way is sufficient for the plants when put in.

8 Tall Large-headed Purple Brocoli. This sort grows from 2 to 3 feet in height, and produces large purple heads. If sown towards the end of March, it will prove a useful kind in March and April following. The plants require to be 3 feet asunder, in good ground.

9 Cream-coloured or Portsmouth Brocoli. This kind exceeds all the others in size; the heads are of a buff or cream-colour, very compact and firm; the leaves are large and broad, with white veins; they spread out widely, but the small centre leaves cover the flower. A head of this kind was sent by Mr. Oldacre to the Horticultural Society from Spring Grove, Brentford, that measured 2 feet in circumference, although it was quite close. If seeds of this sort are sown in April, they will produce heads in the following February, March, and April. It bears near the ground. The plants should be 3 feet asunder. This kind merits general cultivation.

10 Sulphur-coloured Brocoli. This is a hardy and valuable sort; if sown in April it produces in the following April and beginning of May, fine, compact, conical, sulphur-coloured heads, some of them slightly dotted with purple. The leaves have long footstalks, are much indented, of a bluish-grey-colour. Two feet asunder is sufficient for the plants.

11 Spring White or Cauliflower Brocoli. This sort grows very robust, with large flat narrow leaves, which have thick veins; the leaves encompass and compress the head, so as to render it generally invisible even when fit to cut, which is a great preservative from the frosty mornings common in the spring months. If the seeds of this kind are sown in March, and finally planted out at 3 feet asunder, these, if in good ground, will produce very fine heads perfectly white throughout the months of April and May of the following year.

12 Late Dwarf Close-headed Purple Brocoli. This is the latest purple Brocoli, being in perfection throughout April and the greater part of May. The plants seldom rise above a foot in height; the flower at first shews small and green, but soon enlarges, and changes to a close conical purple head; the leaves are short and small dark-green, with white veins, much sinuated, deeply indented, and forming a regular radius round the head, giving the whole plant a singular and beautiful appearance. The seeds of this kind should be sown in April. Plant finally from one and a half to two feet asunder.

13 Latest Green, or Siberian, or Danish Brocoli. This is the latest and hardiest of all the Brocolis, for the severest winters will not destroy it. The leaves are much waved and indented, long, and narrow, with a tinge of purple colour on the

stems. If this sort is sown towards the end of April, it will produce large compact green heads during the whole of May in the succeeding year. Two feet distance is sufficient for the plants.

14 Sprouting Brocoli. This is a hardy spring sort. If sown in April it will produce in the following spring. Two feet asunder is sufficient for this kind.

15 Belvidere Brocoli. The heads of this kind are very handsome and excellent. The plant is not very hardy. Sow in April, and plant finally two feet asunder.

General observations on the culture of Brocoli. All the sorts are raised from seed, and half an ounce is sufficient to sow a bed of 40 feet square. Ronalds directs the seed-beds to be prepared of rich mould well dug, and if dry watered the evening before sowing. The seeds should be thinly sown, and the beds should be covered with mats or litter till the plants appear; the covering may then be removed, and then watered occasionally as the state of the weather requires: the best method is to transplant when the plants are about 2 or 3 inches high into other beds about 4 inches apart. Being several times refreshed with water, if the weather is dry, they will in a fortnight or three weeks be sufficiently strong for a second planting. This mode offers some advantage in giving time to clear off many crops, such as peas, &c. thereby obtaining ground which could not otherwise be conveniently had at the first season of planting out. The four first sorts on the list, which Mr. Ronalds considers as congeners, should be only once transplanted, as the check their removal occasions is apt to produce the head prematurely, which in that case will be small, and indifferent in quality. If the season is showery, it will be requisite to cover the beds as soon as sown with netting, to keep off the birds, also to sprinkle the plants with lime-water when they appear, or to strew on them fresh slaked lime to destroy the slugs. In this case, when the plants are six or eight inches high, they may be planted finally at the distances recommended for each sort. Brocoli in general succeeds best in fresh loamy soil, where it is supposed they come more true to their kind and hardier, but if this situation cannot be had, deep digging with plenty of manure, or where the ground is exhausted with reiterated cropping, a good quantity of fresh loam obtained from a common, dug in, would materially improve the Brocoli, and be a lasting use to future crops, are the only remaining alternatives to procure good crops. Deep digging also buries the insect which causes all the *Brassica* tribe to club at the roots. Soap ashes dug into the ground is supposed to be a good preservative from the club, and if the roots of the plants, just previously to planting, are dipped and stirred well about in mud of soap ashes with water, its adherence will in a great measure preserve them from attack; perhaps a mixture of stronger ingredients, such as soot, sulphur-vivum, tobacco, &c. would be still better (Hort. trans. vol. 3.).

Mr. Wood, a writer in the Cal. Hort. Mem., has paid considerable attention to the cultivation of *Brocoli* for forty years. He finds that manuring with a compound of *sea-weed* and horse-dung produced the finest and largest heads he had seen during a practice of fifty-four years.

Preserving Brocoli during Winter. Ronalds says, that though *Brocolis* come larger and finer on the spot where they are planted, yet it is prudent to take up a part of the later sorts in November, disturbing the roots as little as possible, and lay them in slopingly, with their heads towards the north, only a few inches above the ground, and about eighteen inches asunder. By this means the crown of the plant, lying low, is soon covered and protected by the snow which generally falls previous to long and severe frosts. The plant is also rendered tougher in fibre, and hardier, by the check received in this last removal. Mr. A. Knight having practised laying in his *Brocoli* plants in November, in the usual way, found but small heads produced from them in the succeeding spring, till he tried trenching or laying them in September, and "so low as that the centre of the stem at the top of each plant was level with the surface of the ground." The plants are watered, roots are properly emitted, and the earth drawn round each plant, before snow is apprehended. The consequence of this treatment is, that the plants are fresh and vigorous in spring, and produce large heads. (Hort. Trans. I. p. 305.) Nicol takes up the most forward crops of Brocoli in the end of October, and lays them on their sides, so as the heads may not touch each other. In a dry soil, and open situation, the plants will thus resist the severest winter.

Gathering Brocoli. In gathering Brocoli, five or six inches of the stem are retained along with the heads; and in dressing, the stalks are peeled before boiling. Some of the kinds produce sprouts from the sides of the stems, with small heads; these should be gathered when ready, and are very good when boiled.

To save seed. The largest, finest, and best formed heads are selected for this purpose, taking particular care that no foliage appears on the surface of the heads. These are marked, and in April are laid in by the heels, in a compound of cleaning of ditches, tree-leaves, and dung. When the head begins to open, or expand, the centre is cut out, leaving only four or five of the outside shoots to come to seed. Lifting prevents them from producing proud-seed, as it is called, or degenerating. The above method produces seed the most genuine of all the methods that have been tried. The *Sulphur Brocoli* is the most difficult to procure seed from. (Nicol. in Cal. Hort. Mem. 2. p. 267). Abercrombie says that Brocoli seeds degenerate in this country, and that the best seed is obtained from Italy.

Insects which the Brássica tribe are liable to be attacked by.

The whole of this tribe are liable to the attacks of the larvæ of the *Tipula oleràcea*, Lin. on their roots, and of the caterpillars of butterflies and moths on their leaves, as well as *aphides*, or cabbage-lice, snails, and slugs. There is no remedy for the first, excepting that of taking up, cleaning, and transplanting in fresh soil, in a different part of the garden; and it is in general easier to plant afresh from the seed-bed. With respect to caterpillars, snails, and slugs, they can only be gathered by hand, and the way to do this effectually is to begin, as soon as they appear, to look them over daily, early in the morning. Poultry, and especially ducks and sea-gulls, are sometimes of use in keeping these and other insects under; a hen and chickens will devour caterpillars greedily, but are apt to scratch the soil afterwards if not timely removed; Turkey-fowls are better. Nature has furnished a remarkable quantity of eggs in the bodies of caterpillars or pupæ, which are there hatched; the larvæ have no feet; they are soft and cylindrical, and feed on the substance of the caterpillar, which never turns to a perfect insect; while the larvæ of the ichneumon spin themselves a silky web, and change into a *pupa incompleta*, and in a few days the fly appears. (*Entymologist's Companion*, p. 68.)

Field Culture of the Varieties of Brássica oleràcea.

The Cabbage tribe, for the common purposes of farming, will afford little profit; but near large towns or sea-ports they will answer the purpose of the farm-gardener. The varieties commonly cultivated in fields are the large field-cabbages, called Scotch, or Strasburgh, and the drum-head, &c. For the purposes of domestic economy all the varieties may be cultivated,—*Cabbages*, *Borecoles*, *Savoys*, *Brussels-sprouts*, *Brocolis*, and *Kohl-rübe*; for the time and manner of cultivating see Garden Culture. Any soil that is rich will suit all varieties. The best mode of preparing for field-culture is that for *Potatoes* or *Turnips*, the

plants being dibbled in along the centre of a ridgelet. For early crops no ridgelets are required, as the plants are inserted in rows by a line at much narrower distances. The season for planting a full crop of field-cabbages is in March; but cabbages may be planted as late as June, and produce a tolerable crop in November; and in this way they may be made to succeed an unsuccessful crop of turnips. The plants used in March should be the produce of seed sown in the preceding August; but those planted in May or June may be the produce of February or March sowings.

The after-culture consists in horse and hand-hoeing, and weeding; and the crop is taken by chopping off the heads with the spade, leaving an inch or two of stalk to each. They may be preserved by housing, but only for a short time. The produce is said to be from 35 to 40 tons per acre. Sir Humphrey Davey found 1000 parts of *cabbage* gave 73 of nutritive matter, of which 41 are mucilage, 24 saccharine, and 8 gluten.

The application of field-cabbage is generally for feeding milch cows, and sometimes to the fattening of oxen, and for sheep in the lamb-season.

The diseases of the varieties of *Brássica oleràcea* are the same as those of the *Turnip*, with the exception of the forked excrescences, and they neither admit of prevention or cure by art; but like the turnip, under favorable circumstances they do not occur.

Calendar of the work necessary to be done to the varieties of Brássica oleràcea.

1 *January.* Lay out ground for planting *Cabbages*, if the weather is mild, digging in some rotten dung a spade deep, properly mixed with the earth in the bottom of the trench. About the end of the month plant about three feet asunder, if large growing sorts. The *Sugar-loaf* and *Early York Cabbage*, are the best for this planting. Fill up the places of the plants that have died in the former plantations. On the same ground where *Cabbages* are planted, a thin crop of round-leaved *Spinach* may be sown, broad-cast, which will be fit to gather in April, or the beginning of May. Transplant *Cabbages* and *Savoys* for seed in the beginning of the month, if it has been neglected in November or December. Examine the frames in which young *Cauliflower* plants have stood the winter, and let the withered or damaged leaves be picked off, and stir the surface of the ground a little, if it can conveniently be done. In mild weather let the plants have plenty of free air, by tilting the glasses, or taking them entirely off, keeping them close down during night, and in frosty weather. If the weather is very severe, cover the glasses every night, and in the day-time if necessary, with mats, straw, or ferns; also lay some litter round the edges of the frames or hand-glasses, which will prevent the frost from penetrating at the sides. Look carefully over the *Cauliflower* plants, and pick the slugs, &c. off with the hand. In severe weather mice and rats will be apt to destroy many of the plants; recourse must then be had to traps.

Cape Brocoli managed exactly according to the directions given for Cauliflower plants. The crops of *Brocoli* may now be still further protected from the frosts by laying some bean-haulm and other litter on the ground amongst their stems, and then stick the ground full of pea-stakes and other branches, in imitation of natural coppice. The shade afforded by this process will greatly counteract the effects of sunshine succeeding severe frosts, which at this time, and in February, are so hurtful to all culinary vegetables.

2 *February.* *Early Sugar-loaf Cabbage*, and other *Cabbages*, should be transplanted finally, the strongest in the beginning, and the weakest in the latter end of the month. Sow *Cabbage* seeds about the middle or latter end of the month, for July, August, and September use. If the winter has destroyed many of the plants of the August sowing, some of the earlier sorts may be sown on a gentle hot-bed. Sow some *Red Cabbages* for next winter's supply. *Cabbages* and *Savoys* for seed may be planted if not done before. Savoy seed may now be sown for the first crop, about the middle or latter end of the month, for September, October, November, and December use. Stir the mould, and earth-up the *Cabbages* that were planted in October; this will invigorate the plants, and promote their growth.

Cauliflower plants in frames, and under hand-glasses, should have plenty of air every mild day, by entirely removing the glasses. About the end of the month some of the strongest plants should be finally transplanted, in a rich sheltered spot of ground, about a yard distant each way: these should be sheltered occasionally if required. Thin the *Cauliflower* plants under hand-glasses, if there be more than four under each glass: observe to draw the weakest, raise some earth round the stems of those that remain at the same time. The plants that have been drawn out should be planted in a sheltered situation, allowing them sufficient room to come to perfection. Sow *Cauliflower* seeds about the end of this month, to raise plants to succeed the early crop; if sown on a slight hot-bed they will be a fortnight earlier, giving plenty of air in mild weather.

3 *March.* Plant finally the *Cauliflower* plants which have been in frames or warm borders during winter, if not done in the former month, in a good spot of ground, well manured, and dug in rows about thirty inches apart, allowing the same space between the rows. Raise earth round the stems of the *Cauliflowers* under hand-glasses, the glasses to be removed in fine weather. Prick out those plants raised from seed sown the preceding month, into a bed of good earth, in a warm situation: a hot-bed is preferable, as it will forward them greatly. Sow *Cauliflower* seeds early in this month, if it was not done in February, in a moderate hot-bed, or in a bed of good earth, in a warm situation, for August use. Sow *Brocoli* about the middle or towards the end of the month, in a warm open situation. If sown earlier *Brocolis* are apt to start, or button. Transplant finally all sorts of *Cabbages*. Sow seeds of *Cabbages* in the beginning or middle of this month; the early kinds for successional and young summer *Cabbages*, the late kinds for autumn and winter *Cabbages*. *Red Cabbage* should now be sown for winter use. These will be well cabbaged about Michaelmas. Sow *Savoy* seed for a principal crop, to serve from about Michaelmas to Christmas. Sow *Brussels sprouts* any time this month.

4 *April.* Draw earth round the stems of those *Cauliflower* plants under hand-glasses; let them be fully exposed in mild weather, and when there are warm showers. Finish the planting out of *Cauliflower* plants in frames, warm borders, &c. if not done last month. Prick out those plants raised from seed sown last month. *Cauliflower* plants which were raised from seed early this spring should be finally planted about the end of the month in a piece of good open ground, well dunged, and dug about two feet asunder, water them as soon as they are planted. Sow *Cauliflower* seed for a successional crop on a sheltered border, and guard the seed well against birds at this season. The *Cauliflower* plants which were kept in pots during winter may now be finally planted out if the weather is fine. Make holes sufficiently large to admit a spade full of rotten dung, and upon this set the plants, one in each hole. They should be carefully turned out of the pots with balls; settle the mould about them by gentle watering, these will require to be sheltered during inclement weather until the month of May. The *Cape Brocoli* sown in autumn, and wintered with the *Cauliflowers*, may now be finally planted, and treated in the same manner as *Cauliflowers;* they should be protected by a few branches until the weather is set-

tled. Sow a moderate quantity of *Early Purple Brocoli, Portsmouth, Sulphur-coloured, Cauliflower-Brocoli, Late Dwarf Purple Brocoli,* and *Siberian* or *Danish,* in a rich sheltered border, covering them with mats if the weather is frosty, give plenty of water if the weather is mild and dry, and when the plants are two or three inches high prick them out two or three inches apart. Sow and plant all sorts of *Cabbages,* and earth up and clear from the crops already planted. Prefer for this sowing the *Battersea, Pentonville, Imperial,* and *Antwerp.* Sow full crops of *Savoys* both at the beginning and end of this month, as well as *Brussels Sprouts.* Sow sorts of *Borecole* and *Chou Raves* in borders of middling ground. The *Woburn Kale* is propagated by cuttings, these may be planted finally at once.

5 *May.* Sow *Cauliflower* about the end of this month for the last crop of the season for the winter supply, give plenty of water if the weather is dry, and occasional shading. Plant *Cauliflower* finally in a north or shaded border, the coldest and dampest situation in the garden is the best for this planting. Hoe and earth up the former planted crops. Pay proper attention to those under hand-glasses as regards air and water. If any are coming to flower on any of the crops, break a leaf or two down upon them. Sow a full crop of *Brocolis,* and water if the weather is dry. Prefer the kinds recommended last month, to which may be added, *Grange's Early Cauliflower Brocoli, Purple Cape,* and *Green Cape.* Plant finally those *Brocoli* plants which are fit, at two feet asunder, dung the ground well, and water freely if the weather is dry. Avoid ground that has been under the same crop the preceding year. Cape Brocoli is said to succeed best planted finally from the seed-bed, or the seeds are sown where the plants are intended to remain, for this purpose sow two or three seeds at two feet distance, and when the plants are grown up two or three inches remove all but the strongest; and the same mode is recommended to all spring sown *Brocolis, Cauliflowers, Lettuces,* and many other vegetables. Transplant spring sown *Cabbages* of all sorts for autumn and winter use, in an open situation; some may be planted between rows of *Early Cauliflowers* and wide rows of *French Beans.* Plant in moist weather if possible, give each a little water immediately after planted. Earth up the early and general crops of *Cabbages.* As the early crops will now be advancing to maturity, they may be forwarded into cabbaging by tying the leaves together with strings or matting, the best time for doing this is when the leaves begin to turn inwards. Sow *Sugar-loaf Cabbage* seed and any other quick hearting kinds, for summer and autumn, and young autumn *Cabbages.* Sow *Brocoli* of sorts for next autumn, winter, and spring use, if not done in March or April, which is the best time; and as soon as they have attained a moderate size prick out into beds four inches apart, that they may attain a proper size for final planting. Sow *Brussels Sprouts* and *Savoys,* and prick out the plants of the former sowing.

6 *June.* Prick out the *Cauliflowers* sown in May for an autumnal crop in a bed of rich earth in an open situation, water, and shelter them occasionally in the middle of the day if hot. Look over the plantation of early *Cauliflowers,* and if the heads are appearing, break down some of the large leaves over them, which will blanch them, and render them more delicate. Those *Cauliflowers* coming into flower or advancing in growth, should have plenty of water in dry weather. This is a proper time to select *Cauliflower* plants, from which the seed is to be obtained, and allow these to stand. Sow *Cabbages* for a successional crop, hoe and earth up the advancing crops, as they may occasionally require. To prevent aphides and worms from destroying *Cabbages,* give plenty of water at the roots if the weather is dry. Sow some *Coleworts* about the middle or end of the month. Plant full crops of *Brocoli* in well dunged and dry open situations, water if the weather is dry. Sow *Brocoli* for early spring use. Prick out those *Brocolis* sown in April or May, and if the weather is dry give occasional watering. Plant out finally sorts of *Brocoli* as the ground becomes vacant, or between the rows of crops, which will be soon cleared off the ground. Plant a considerable quantity, as they will be of great use in winter. Plant crops of *Brussels Sprouts* and *Savoys*; the directions given for *Brocoli* are applicable to these; if ground be scarce, plant them between rows of crops that will be soon cleared off the ground.

7 *July.* Plant out the *Cauliflowers,* which were sown in May and pricked out in June, in an exposed situation in a rich soil, about 18 or 20 inches apart each way, regularly watering them if the weather is dry; these will be ready for storing in October. Plant full crops of *Cabbages* for autumn and winter use; let the ground be well dug, and moderately dunged, water if the weather is dry; let the plants be about 2 feet asunder. Plant finally different sorts of *Borecole.* Let every piece of vacant ground which is not intended for any other crop be planted with *Borecoles, Brussels-sprouts, Savoys,* and *Brocolis.* Situations which are least exposed to the action of the sun are best, or high dry situations, avoiding situations under the shade of trees. Hoe and earth up the crops planted last month. Sow *Brocoli* seed for a late spring crop, and last sowing of the season; not later than the fifteenth of the month, in a bed of rich mellow earth, and if the weather is dry a moderate watering should be given. Plant finally a full crop of *Brocoli* in a rich well-dug and manured piece of ground at about 2 feet asunder, give water for two or three days regularly after planting. Slugs are now very common, therefore they should be carefully picked off every morning from all the *Brássica* tribe. Sow full crops of *Coleworts* for autumn and winter use, and also for plants to stand until the spring, when the *Savoys* and other greens have been consumed. Sow *Yorkshire* or *Sugar-loaf Cabbage* seed, *Battersea* and *Antwerp* kinds for *Coleworts.* If Coleworts are wanted for winter, sow in the last week in June; this will produce plants fit for use in November and December.

8 *August.* Sow *Cauliflower* seed for early crops next year, either in the middle of the second week or the middle of the third week, in a border of light earth, and give water if the weather require it. Sow sorts of *Cabbages* for next year's use, about the fifth, but not later than the twelfth of August; prefer for this sowing the *Early Dwarf York, East Ham, Early Emperor,* and *Sugar-loaf* for first crops; the *Large York, Large Sugar-loaf, Battersea, Penton, Imperial, Antwerp, Russian,* &c. for secondary spring crops. If a succession of *Coleworts* are required still plant as directed. Plant out *Savoys* for autumn and winter use in ground well dug up and manured, or on ground where early potatoes or such crops as have not much exhausted the ground have been. *Savoys* and all sorts of greens may with propriety be sown between rows of beans, peas, and such crops. At the beginning of the month prepare a piece of ground for *Brocoli* in an open spot; let it be well dug and dunged. Plant in rows three feet apart each way; give water immediately on planting. Those *Brocolis* transplanted last month should now have the earth drawn up round their stalks, at the same time giving them a liberal watering.

9 *September.* Prick out those *Cauliflowers* sown last month into a nursing-bed; for this purpose prepare a bed of light rich mould about the size of a frame, in order that a frame may be set over them as the weather becomes inclement, plant about three inches apart in rows each way, gently watering them, shading them from the sun, and sheltering them from heavy rains, for this purpose the lights should be put on. The plants having remained five or six weeks in this bed they will be ready to transplant. Hoe and earth up the Michaelmas crop, or those

sown in July, they will begin to shew their heads about the latter end of the month. If the weather is dry, make a hollow or basin round the roots of these plants, into which pour a quantity of water; by this means their growth will be accelerated, and the heads will become much larger. Plant those *Cabbage-Coleworts* which were sown about the end of July, about the middle or end of this month, in a sheltered part of the garden: plant in rows about seven or eight inches apart, the rows about a foot distant. Some of these will be fit for use about Christmas. Prick out those *Cabbage* plants which were sown about the middle or latter end of August in nursery-beds in a piece of good ground in a sheltered situation, well dug and divided into beds; plant four or five inches apart, give a moderate watering if the weather is dry three or four times for the first ten days. About the first or second week of this month the last crop of *Brocoli* should be finally transplanted into a warm situation, and they should be planted in rows about a foot and a half apart, and about the same distance from each other in the row. Hoe the ground and draw the earth round the stems of the former crops of *Brocoli*.

10 *October*. The *Cauliflowers* sown in August and beginning of September will now be fit to prick out in beds, where they are to remain during winter; prepare a piece of ground of the same size and form as recommended last month, in a sheltered but not in a shaded situation; plant about four inches apart each way, water and settle the mould about their roots, place a frame over them if such can be spared, exposing them as much as possible in good weather, covering them when frost or heavy cold rain is apprehended. Guard against the attacks of mice and slugs. If a frame cannot be had, prick them out in the same way under a wall or paling, sloping the ground in digging towards the sun, or they may be protected in beds on a warm spot, covered occasionally with mats, supported by hoops; in either case let them enjoy a free circulation of air, and to be kept as dry as possible. Store *Cauliflowers* as directed. Plant out finally towards the end of the month early *Cabbage* plants, for cabbaging early in the following summer, in a good spot of ground well manured and trenched, make ridges and plant between them, and in wet ground even on the top of the ridges. If both survive the winter, make the one row make good the other, preferring to leave the row at the bottom of the ridge, these last are most likely to be preserved, as they will be sheltered from the cutting winds. The *Brassica* tribe seldom succeed if planted twice in the same ground. Plant in rows about two feet apart each way. Some of the early *Cabbage* plants should be allowed to remain in the nursery-beds till January or February, for in many instances the plants that are planted out early are destroyed by the frost, should this take place, then have recourse to the nursery-beds to supply their places. If any *Cabbage* plants remain in the seed-beds, remove them into the nursery-beds in the beginning of the month, to gain strength to endure the ensuing frosts. Clear the crops of *Brocoli* from weeds, and mould them up for winter; prefer a dry day for this operation. The crops of *Brussels-sprouts* should be treated in the same manner.

11 *November*. Admit free air every fine day to the *Cauliflowers*, in fine dry weather during the day-time by wholly removing the glasses, tilting them only in wet weather; clear off the dead leaves and keep them free from weeds; those plants under bell or hand-glasses require the same treatment, draw a little earth round their stalks. Where *Cauliflower* plants were neglected to be pricked out last month, let it be done as early in this month as possible. Planting *Cabbages* for next spring use should be finished as early in this month as possible, that they may become sufficiently rooted before severe weather sets in; the weakest plants may remain in the seed-bed during winter, to make up vacancies in the plantations in spring.

12 *December*. Treat *Cauliflowers* as directed last month; keeping free from frost, damp, and slugs, admitting free air in good weather.

2 B. campe'stris (Lin. spec. 931.) leaves rather fleshy, covered with glaucous bloom; first ones rather hispid or ciliated, lyrate, toothed; the rest cordate, stem-clasping, acuminated, partly pinnatifid. ♂. H. Native of Britain, Lapland, Spain, Transylvania, and in the Crimea in fields.

* *A. oleífera* (D. C. syst. 2. p. 588.) root fusiform, slender; stem elongated. ⊙. H. Smith, eng. bot. 2224. Dalech. lugd. 523. Native of Britain, Lapland, &c. in fields, and about the banks of rivers and ditches. Wild navew. Pet. hort. brit. t. 45. f. 9. Stem 2 feet high. Flowers yellow, corymbose. *Colsat*, *Colsa*, or *Colza*, Pomet. hist. drog. p. 17. f. 2. *Chou de Champs Navette* (Fr.) Coleseed, Wild Navew or Navette (Eng.)

This plant is very extensively cultivated in Belgium, Switzerland, and Germany for food for sheep, and for the seed to be pressed for its oil. It is sometimes sown broad-cast, but it is alleged, that transplanting has many advantages; one is, that the seed-bed occupies but little room, whilst the land which is to carry the general crop is bearing corn. In the latter end of September, or second week of November, the plants are put in with the dibble or the plough without apprehending any miscarriage. The seed-bed is usually sown in July or August. In October, or sooner, the stubble is ploughed over, manured, and ploughed again. The plants are dibbled into the seams of the ploughing (each furrow being 12 inches broad) and are set out 12 inches distance in the rows. Instead of dibbling upon a second ploughing, in many cases they lay the plants at the proper distances across the furrow, and as the plough goes forward the roots are covered, and a woman follows to set them a little up, and give them a firmness in the ground where necessary. After the frost in spring, the intervals are weeded and hand-hoed, and the earth drawn up to the plants, which is the last operation till the harvest. It is pulled rather green but ripens in the stack; it is threshed in the common way, and the haulm is burned to ashes for manure, which is found to be more valuable than any other kind of manure, and it is considered that upon clover, a dressing of one-third less of it is amply sufficient. The seed is sold for crushing, or, as is frequently the case, crushed by the farmer himself.

There is a variety of this called *Colsa de Mars*, which may be sown in spring and harvested in the same year, but is less productive. The two varieties have a very different aspect. Some authors speak of the *White-flowered Colsa;* but this name appears to have arisen from some confusion in nomenclature.

** *B. pabulària* (D. C. syst. 2. p. 589.) root fusiform, slender; stem short. ⊙. H. Native of Europe; cultivated in fields for sheep fodder, but very rarely; it bears frequent cutting. *Chou à faucher*, Commerel in mem. soc. agr. par. 1789.

*** *C. Napo-Brássica* (D.C. syst. 2. p. 589.) root tumid, turnip-formed. ♂. H. Frequently cultivated in fields. Brássica oleràcea Napo-Brássica, Lin. spec. 932. Cavolo navone o Rutabàga, Galliz. bot. agr. 3. p. 192.

Var. α, commùnis (D. C. l. c.) root white or purplish; neck and petioles greenish or purplish. ♂. H. Cultivated in fields. *Chou-navet commun; Chou-navet blanc; Chou-navet rouge.* The Turnip-rooted Cabbage is little known in the English gardens, though not uncommon in French horticulture. Mr. Neill observes it has a root under ground as sweet as a Swedish Turnip. The root is either white or red.

Var. β, Rutabàga (D. C. syst. l. c.) root yellowish, rather globose. ♂. H. Cultivated in fields. *Rutabàga, Navet jaune, Chou de Laponie, Chou de Suede, Navet de Suede* (Fr.) Swedish Turnip (Eng.) *Navone di Laponia* (Ital.)

Swedish Turnip. This root is extensively cultivated in fields for cattle, on account of its large size and hardy nature; it is also occasionally raised in gardens for the table to use in young growth. The cultivation of this root is the same as that for common turnip both in agriculture and horticulture, which see.

Wild or *Field* Navew and Swedish Turnip. Britain. Fl. June, July. Pl. 2 to 3 feet.

3 B. Ra'pa (Lin. spec. 931.) radical leaves lyrate, destitute of glaucous bloom, green, covered with bristly hairs, middle cauline ones cut, upper ones quite entire, smooth. ♂. H. Native throughout Europe in cultivated fields and their borders. Smith, eng. bot. 2176. Mart. fl. rust. t. 49 and 50. B. asperifòlia var. γ, Lam. dict. 1. p. 746. Sinàpis tuberòsa, Poir. dict, 4. p. 346. Br. tuberòsa, Sal. prod. 272. Sinàpis ràpa, Brot. fl. lus. 1. p. 586. Long. Turnep. Pet. herb. brit. t. 45. f. 8.

Rave Navet (Fr.) *Sleckrübe* (Germ.) *Navone* (Ital.) Turnip (Engl.)

A. deprèssa (D. C. syst. 2. p. 590.) root tumid under the neck, globose depressed, ending abruptly in a slender tail. ♂. H. Cultivated. *Navet ronde* or *Rave plate. Rabioule Rave, Grosse Rave* (Fr.) Round Turnip (Eng.)—Mor. oxon. sect. 3. t. 2. f. 1.—Blackw. herb. t. 231.

* *álba* (D. C. l. c.) root white on the outside, or purplish at the neck.—White Turnip.

** *flavéscens* (D. C. l. c.) root yellowish both inside and outside.—Yellow Turnip.

*** *nígricans* (D. C. l. c.) root blackish on the outside.—Black Turnip. This is a very doubtful plant.

**** *punìcea* (D. C. l. c.) root with a scarlet or red skin. —Red Turnip.

***** *víridis* (D. C. l. c.) root green.—Green Turnip.

****** *præ'cox* (D. C. l. c.) Early Dutch Turnip.

B. oblónga (D. C. l. c.) root oblong, gradually tapering to a point.—Math. comm. 330. f. 1.—Lob. icon. t. 197. f. 2. &c. —Oblong, Tankard, or Decanter Turnip.

C. oleífera (D. C. l. c.) root slender.—B. napélla, Vill.—Math. comm. 330. f. 2.—Lob. icon. 298. f. 1.—Oil-bearing Turnip. Cultivated in Dauphiny, where it is called *Navette*, for the sake of its seed, from which an oil is obtained. It is less productive than the common *Rape* and *Colza*, but it is nevertheless useful as it grows in soil unfavourable to every other oleaginous plant. The seeds are sown after harvest, and ripen in the June following. See *B. nàpus oleífera* for the culture of the plant.

Turnip. Fl. April, July. Britain. Pl. 2 to 4 feet.

The *Turnip* is a biennial plant, growing in a wild state in some parts of England, but better known as an inhabitant of the gardens or the farm; the root leaves are large, of a deep green colour, very rough jagged, and gashed; in the second season it sends up a flower-stalk furnished with stem-clasping leaves, which are smooth.

Use. The use of the root, boiled and mashed as a dish, in broths, soups, and stews, or entire, is known all over Europe. The top shoots, from such as have stood the winter, are gathered whilst tender and dressed as spring-greens or spinach, under the name of *Turnip-tops*.

The following varieties are in general cultivation.

§. 1 *Round White Turnips. Brássica ràpa. A. deprèssa * álba, D. C. l. c.*

1 Early white Dutch.
2 Early stone.
3 Common round white.
4 Large round white.
5 Green topped, large round white, skin of the crown green.
6 Red topped, large white.
7 Small round French, petit Berlin (*Fr.*) Teltaw (*Ger.*)
8 Large Scotch.
9 White globe.

§ 2. *Round Yellow Turnips. Brássica ràpa ** flavéscens, D. C. l. c.*

1 Yellow Dutch.
2 Aberdeen yellow.
3 Maltese golden, an excellent and beautiful root.
4 Large yellow field.
5 Scarisbrook or Preston yellow.
6 Mouse-tail or six-week yellow.

§ 3. *Black Turnip. Brássica ràpa. A. deprèssa *** nígricans, D. C. l. c.*

1 Black Russian. This turnip appears to be lost.

§ 4. *Red Turnip. Brássica ràpa deprèssa **** punìcea, D. C. l. c.*

1 Large round red.
2 Red six-week or stone.

§ 5. *Green Turnip. Brássica ràpa deprèssa **** víridis, D. C. l. c.*

1 Green turnip.

§ 6. *Oblong Turnip. Brássica ràpa, B. oblónga, D. C. l. c.*

1 Tankard or Decanter Turnip, large oblong, white, red, and green.

§ 7. *Oil-bearing Turnip. Brássica ràpa, C. oleífera, D. C. l. c.*

1 Navette of Dauphiny.

Estimate of sorts. "The first three sorts are the fittest for early, first succession and main summer crops for the table. The early white Dutch is proper, both for the most early and first succession crops, as is also the early stone. The common round white is highly eligible for the main crop; and the large round white stands nearly on a par with that, and, if not sown to come in with it, should at least succeed it, as a late summer and autumn crop. In large grounds portions of the large white-green-topped, and the large white-red-topped, may be sown for autumn and winter, but the surest plant for winter consumption is the yellow Dutch; although constituted to stand the intense frost unhurt, it has a fine flavour, and is very nutritive. Small portions of any of the other sorts may be cultivated in secondary crops for variety, or to answer a particular demand."

Time of sowing. "This root can be obtained most part of the year by sowing every month in spring and summer. Make the first sowing in the last week of February or first week in March, on a slight hot-bed; by this means the plants will be more likely to bulb, than shew a disposition to run to seed, and will be an acceptable addition to spring vegetables. For the first early full crop sow about the middle or latter end of March in an open situation, and where the ground is light. For the second crop to succeed those sown last month, sow about the middle or end of April, either in drills an inch deep or broadcast thinly. They may be sown between crops of *Asparagus* or *Sea-kale*, provided the soil be light; the early Dutch and stone are best for this and the preceding sowings. For the third crop sow in May, and by the latter end of July they will be sufficiently large for use. Sow in a light soil in warm situations. The fourth and principal crop should be sown in June, about the middle or end of the month, for autumn and winter use, and considerable benefit will be derived in sowing in showery or rainy weather, or to retard the sowing if a prospect of such weather coming on, in all the sowings. Particular care should be taken in sowing the seed equally, and immediately afterwards tread it down and rake it evenly. The fifth crop should be sown in July in an open situation. This time may be considered a very favour-

able time for sowing *Turnips* for autumn use; the first of these will be fit for the kitchen in September, and will improve in growth from Michaelmas to Christmas, and should a moderate winter follow, they will continue in perfection until the following spring. Care must be taken to sow immediately after the ground is prepared. The sixth and last crops of the season should be sown at the beginning and towards the latter end of August, taking advantage of moist weather. The kinds best for this sowing are all the yellow *Turnips*, viz. Dutch, Aberdeen, and Maltese; however in families, where the colour of these may be objected to, the common round white may be substituted; but is not so hardy, nor so good a root for keeping."

Seed estimate. For a seed-bed four feet and a half by twenty-four feet, sown broad-cast, the plants to remain and be trimmed to seven inches distance from each other, half an ounce.

Process of sowing. Let the ground be well broken by well digging, and neatly levelled to receive the seed. Procure bright well dried seed; the seed may be then put into the ground either alone or mixed with sand.

Precautions against the fly. "It appears from a trial of Mr. Knight, at the suggestion of Sir Humphrey Davy, that lime slaked with urine, and mixed with a treble quantity of soot, if sprinkled in with the seed at the time of sowing, will protect the seeds and germs from the ravages of the fly, but this antidote cannot be applied unless the sowing be in drills. A simpler remedy, which has been found by Mr. Mean to be perfectly successful, is to steep the seed in sulphur-water, putting an ounce of sulphur to a pint of water, which will be sufficient for soaking three pounds of seed." *Abercrombie.* Arch. Gorrie, a gardener of merit, tried several methods without effect. At last he tried dusting the rows when the plants were in the seed-leaf, with quick-lime. He says, "a bushel of quick-lime is sufficient to dust over an acre of drilled *Turnips;* and a boy may soon be taught to lay it on almost as fast as he could walk along the drills. If the seed-leaves are powdered in the least degree, it is sufficient; but should rain wash the lime off before the *Turnips* are in the secondary leaves, it may be necessary to repeat the operation if the fly begin to make its appearance." *Cal. hort. mem. vol.* 1.

Mixing equal parts of old seed with new, and then dividing the mixture, and steeping one half of it twenty-four hours in water, has often been tried with effect and especially by farmers. By this means, four different times of vegetation are procured, and consequently four different chances of escaping the fly. *Radish*-seed is also frequently mixed with that of the *Turnip*, and the fly preferring the former, the latter is allowed to escape. *Loud. ency. gard.* One of the easiest methods, Mr. Neill observes, "is to sow thick, and thus ensure a sufficiency both for the fly and the crop." "But the most effectual preventive on a large scale is found in sowing late, where that can be done; the fly in its beetle state having fed on other herbage disappears before the *Turnip* comes into leaf." *Loud. l. c.* "In the heat of summer it is of great importance to wait for rain, if the ground be too extensive to be properly watered; for the fermentation, caused by copious rain, and heat, gives an extraordinary quick vegetation to the seed, which in a few days will be in the rough leaf and out of all danger from the fly. This insect is weakened or killed by drenching showers, and does no injury to the *Turnip* when much rain falls. When a crop is destroyed by the fly, the necessary reparation is immediately to dig, or stir the ground, and make another sowing, watering soon and occasionally afterwards, unless rain falls." *Loud. l. c.*

Subsequent culture. "As soon as the plants have leaves about an inch broad, hoe and thin them to six or eight square inches distance, cutting up weeds. As the *Turnips* increase in the root, a part may be drawn by progressive thinnings, so as to leave those designed to reach a full size ultimately ten or twelve square inches. Water garden crops sometimes in hot dry weather."

Taking in the crop and preserving it by housing. In successive crops begin to draw as directed above in a thinning order, that such others as are coming forward may have room to enlarge in succession, by which means a regular supply will be procured till March or April of the second season; specific sorts being sufficiently hardy to continue good through ordinary winters. But of the winter crops for the table, draw a portion occasionally in November, December, or whenever there is an appearance of the frost setting in severe. Cut the tops off close and house the roots in some lower shed or cellar, laid in sand ready for use while the ground is frozen. "Instead of cutting the top and roots close off, some prefer leaving about an inch of the top, and the whole of the root; and, when the bulbs are kept in a sufficiently cool store, this seems preferable, as more likely to retain the sap." *Abercrombie.*

Turnip-tops. These are to be gathered from the earlier spring-produced leaves, either from the crown or flower-stalk. They are equally good from any of the varieties, and less acrid from those of the *Swedish Turnip.* Sometimes very late sowings are made in September and October, which never bulb, but which are preserved entirely for their produce as greens in spring. *Loudon, l. c.*

Field Turnips. Where a family can be supplied from the field, the roots will always be found of a better flavour, and the same remark applies to all the culinary kinds of *Brassica, Cauliflower* and *Brocoli* excepted.

Varieties commonly cultivated in the fields. These may be arranged as whites and yellows.

1 *White Turnips.* By far the best and most generally cultivated, is the globe, but there are also the green-topped and purple-topped, which though they do not produce so large a crop as the globe or oval, stand the winter better, and the red-topped, it is said, will keep till February. The pudding or tankard *Turnip*, has a white bulb which rises from eight to twelve inches high, standing almost wholly above the ground. It is less prolific than any of the others, and more liable to be injured by frost.

2 *Yellow Turnips.* There is the yellow field *Turnip*, which is more hardy than the globe, and answers well for succeeding that variety in spring, as well as the *Swedish Turnip*, which may be preserved for consumption in June. See *B. Campéstris Rutabàga.* The *Siberian Turnip* has a bulb and a branching top, but both of inferior quality. It is said to be a hybrid between the *White Swedish Turnip* and field *Cabbage*, or between the *Rape* and the *Cabbage.* The sorts are limited by the best farmers to the white globe, yellow, and Swedish, according as early, middling, or late supplies are wanted.

Choice of seed. Farmers must rely on the integrity of the seed-dealer, as it is impossible to discover by the grains whether the sorts are true. Turnip seed requires to be frequently changed, and the best is generally procured from Norfolk and Northumberland. Those who wish to have *Turnips* in perfection should procure fresh seed from Norfolk every year, for after two years it degenerates. New seed is preferable to old, as it vegetates several days sooner, and more vigorously, and it is well known that the healthy and vigorous plants escape the fly, while the stunted or sickly seldom or never escape it. Hence it would seem that plants raised from fresh or new seed are more secure from the fly than those raised from old seeds.

Soil, should always be of a light description, as they can never be advantageously cultivated on wet tenacious soils, but are grown on all comparatively dry soils under all the variations of our climate, but even in clayey soils they are frequently cultivated, though on a smaller scale, to be eaten by cattle, for the

purpose of augmenting and enriching the manure into which the straw of corn is converted.

Climate. The climate most desirable for the *Turnip* is cool and temperate. *Turnips* in the south of Europe never grow large, and a rapid climate is disadvantageous to the *Turnip*, and they are accordingly found of no size in Russia, Sweden, and many parts of North America.

Preparing the soil. "The first ploughing is given with a deep furrow, soon after harvest, usually in the direction of the former ridges, though if the soil be dry it is of little consequence in what direction. As soon as the spring seed-time is over, a second ploughing is given across the former, and the harrows, and if necessary the rollers are set to work in order to clean and pulverise the soil, and the weed-roots are carefully burnt or carried off the field to form a compost, usually with lime. The land then generally undergoes a third ploughing, and weed-roots carried off as before, again harrowed well, sometimes also rolled. It is next laid up in ridgelets from 27 to 30 inches wide, either with the common swing plough, or one with two mould-boards which forms two sides of a ridgelet at once. Well rotted dung at the rate of 12 or 15 tons per acre, this is spread equally over the ground. The plough immediately follows, and reversing the ridgelets forms new ones over the dung, and the drill-barrow, commonly one that sows two drills at once, drawn by one horse, deposits the seeds as fast as the new drills are formed. This machine has usually two rollers, one that goes before the sowing apparatus and levels the pointed tops of the ridgelets, and another that follows, for the purpose of compressing the soil and covering the seed. Ground cannot be made too rich for the *Turnip*, for in fact the weight of the crop depends upon its condition in this respect."

Time of sowing. "The several varieties are somewhat different; the Swedish should be put in earliest, and then the yellow, both of them in the month of May. But as these kinds are much less extensively cultivated than the globe, the month of June is the principal seed-time. In the southern counties, *Turnips* are frequently sown in August after peas, wheat, or tares. The crop, however, is always light, and only fit to be eaten down by sheep in spring, or to send their tops to market as greens. After a crop of hotspur peas, sold green for the London market, the land is well cleansed with the horse-hoe, and upon once ploughing *Turnips* are sown, and when the plants first appear, the field receives a light top dressing of soot, ashes, &c.: this has a good effect in preserving the plants from the depredation of the fly."

Mode of sowing, in all the best cultivated districts is on raised drills, for sowing broad-cast, or even sowing in rows on a flat surface, is never found to answer.

After culture. The turnip farmer, as soon as the *Turnip* has put forth the rough leaf, runs a horse-hoe between the ridgelets, and cuts up the weeds on each side almost close to the ridgelets, clearing out the bottom of the interval at the same time. The hand-hoers are always set to work as soon as possible after, and the plants are left about 9 inches apart or more. A few days after this a small swing plough enters the intervals between the rows, and taking a furrow slice off each side, forms a smaller ridgelet in the middle. If the weeds still arise in great abundance, the horse-hoe may be employed again; otherwise, the next operation is to go over them a second time with the hand-hoe, when the intermediate ridge is levelled. When no more manual labour is necessary, a small plough with two mould-boards is employed to lay up the earth to the sides of the plants, leaving the ridgelet the same form as when sown, which finishes the process.

Use of Turnips. They are either eaten by sheep on the spot, lotted off by means of hurdles or nets that they may be regularly consumed in grass fields or fold-yards; when the weather is wet or the fields are moist, when the sheep ought not to be allowed to lie on the field. Eating *Turnips* on the spot is of great advantage both in manuring and consolidating the ground. *Turnips* are also used for feeding cattle and sometimes milch cows, but the far greater part, wherever they are extensively cultivated, by sheep. The Swedish and yellow *Turnip* are eaten greedily by horses, and affords a very nutritive and salutary food along with hay or straw for working stock. During severe frost *Turnips* become so hard that no animal can eat them; in this case lay them in running water, which effectually thaws them: or placed in close feeding-houses, the *Turnips* intended for next day's use may be stored up over night in one end of the building, and the warmth of the animals will thaw them sufficiently by morning. But in those months when frosts are severe, it is always advisable to have a few days' consumption in the turnip barn. It is necessary to slice with a spade or chopping-knife, or crush them by means of a heavy wooden mallet, for sheep and young cattle in their first year towards spring, when the loosening and shedding of their teeth render them unable to break the large roots. A wine is said to be made from the *Turnip* by the London manufacturers of imitations of foreign wine. A kind of bread is also said to be made of the *Turnip*.

Sir Humphrey Davy has proved that *Turnips* contain 42 parts in 1000 of nutritive matter, of which 7 were mucilage, 34 sugar, and 1 gluten. Swedish *Turnips* afforded 64 parts of nutritive matter in 1000, of which 9 were starch, 51 sugar, 2 gluten, and 2 extract.

"To raise plants for seed the usual mode is to select the most approved specimens at the season when they are full grown, and either remove all others from the field, and leave them to shoot into flower-stems next year, or transplant them to a place by themselves, where they will be secure from the farina of others of their genus. In either case, they must be protected by earthing up from winter's frost."

The diseases and injuries to which *Turnips* are liable are various. At their first appearance the leaves are liable to the attacks of the fly (*Aphis and Chrysomela*, Lin.) of the caterpillar (*Papilio noctua*, &c. Lin.) of the slug (*Limax*, Lin.) and of mildew. Their roots are attacked by worms of various kinds; by a singular tendency to monstrosity, known provincially by the names of fingers and toes; by the ambury; by canker, and by wasting or gangrene from water or frost. Of all or most of these injuries or diseases, it may be observed that they neither admit of prevention or cure by art, but under favorable circumstances of soil, climate, culture, and weather they seldom occur, and therefore all that the cultivator can do is to prepare and manure his land properly; and in the sowing season supply water when the weather is dry or the soil deficient in humidity.

4 B. NA'PUS (Lin. spec. 931.) leaves smooth, of a greyish-glaucous-hue, radical ones lyrate, stem ones pinnatifid and crenated, uppermost ones cordate-lanceolate, clasping the stem; siliques divaricate-spreading. ♂. H. Native country not known. Cultivated in fields. It is to be found almost naturalized in waste ground and on ditch banks in Britain. Smith, engl. bot. t. 2146. Schrank. fl. mon. 3. t. 218. Sinàpis Nàpus, Brot. fl. lus. 1. p. 586.

* *A. oleífera* (D. C. syst. 2. p. 592.) root slender ♂. H. B. oleífera, Mœnch. meth. 253. B. Nápus, Nestl.—*Navette d'hiver Navette, Rabette* (Fr.) *Rüben, Reps, Winter Reps*, (Germ.) *Rape, Navew, Coleseed, Winter Navette* (Eng.)—Lob. icon. t. 200. f. 2.

Rape. Navette, (Fr.) *Rubsamen*, (Germ.) *Naba Sylvestre*, (Ital.) This is the British Rape, or Colsat. It is distinguished from the Colsat or Colsai of the continent, by the smoothness of its leaves, the other being hispid. It would be desirable, De Candolle observes, if all cultivators would examine whether

the plant they cultivate is *Brássica Campéstris oleífera*, or the *Brássica Nàpus oleífera*, which can easily be ascertained by the roughness or smoothness of the leaves. Experiments made by Gaujac shew the produce of the first, compared to that of the second, to be 955 to 700, (Hort. trans. 5. p. 23.) "For its leaves, as food for sheep, and its seeds for the oil manufacturers, *Rape*, or *Coleseed*, has been cultivated from time immemorial. It may be grown by sowing broad-cast, or in rows, like the common turnip, or transplanted like the Swedish turnip. The culture of *Rape* for seed has been much objected to by some, on account of the great degree of exhaustion of the land that it is supposed to produce. But where it is grown on a suitable soil and preparation, with proper attention in the after-culture, and the straw and offal, instead of being burnt, as is the common practice, converted to the purpose of feeding or littering cattle, it may in many instances be as proper and advantageous a crop as can be employed by the farmer. The soils best suited for the culture of *Rape* are the deep, rich, dry and kindly soils. Young says that on open fen and peat soils, and bogs, it thrives well, and especially on pared and burned land, which is the best preparation for it; but it may be grown with success on fenny, marshy, and other coarse waste lands, that have been long under grass, after being broken, and reduced into a proper state of preparation. As a first crop, on such description of land, it is often the best that can be employed. The author of the *New Farmer's Calendar* thinks that this plant is not perhaps worth attention on any but rich and deep soils; for instance, those luxuriant slips that are found by the sea-side, fens, or newly broken up grounds, where vast crops of it may be raised." The land on which the *Rape* is to be sown needs nothing more than a deep ploughing, and sufficient harrowing to bring the surface to a fine mould, in February or March, immediately before sowing, or in July, or after the hay-crop if the sowing is deferred to that season. When sown on old tillage-land, the method of preparation is the same as that which is usually given for the common turnip. Wheat is considered the best crop to follow *Rape:* by its being taken off early there is sufficient time allowed for getting the land in order for sowing wheat. The time of sowing *Rape* is the same as that for the turnip, and the manner, either broad-cast or in rows. Where the object is the keep of sheep in autumn or winter, by eating it down, the broad-cast method, and thick sowing, is evidently the best, and is that generally resorted to in Lincolnshire and the fenny districts. The quantity of seed, when sown thick, may be a peck an acre; but when drilled, or sown thin, two or three pounds will suffice. Vacancies may always be filled up by transplanting. The season for transplanting is soon after harvest. One deep ploughing is sufficient, and a sufficient degree of harrowing: the plants are then dibbled in rows a foot apart, and the plants six inches asunder. These will not be so strong as those sown in June or July, where they are to run to seed. The seed-beds where the plants are to be obtained for transplanting, should be sown in June or July. The after-culture is the same as that for the turnip, which consists in hoeing and thinning. In poor soils they may be left at 6 or 8 inches apart, but in rich soil 12 or 15 inches. When *Rape* is grown purposely for feeding sheep, no hoeing nor thinning is necessary. The seeds begin to ripen about the last week of June, and must then be protected from birds. In harvesting *Rape* great care is necessary not to lose the seed by shaking, or by exposing it to high winds or rain. It is reaped with the hook, and the principal point is to make good use of fine weather, for it must be threshed as fast as reaped, or at least without being stacked like other crops. The use of *Rape-seed* for crushing for oil is well known: it is also employed as food for tame birds, and sometimes it is sown by gardeners in the same way as mustard or cress, for early salading. *Rape-cake*, and *Rape-dust*, the first adhering masses of seed-husks after the oil has been expressed, and the second loose dry husks, are used for top-dressings for crops of different sorts, but it has little or no effect if rain does not immediately follow after it has been scattered on the ground. The haulm is used as hay, and the tops are eaten with avidity nearly equal to cut straw. The green leaves, as food for sheep, are scarcely surpassed by any other vegetable, in so far as respects its nutritious properties; but in quantity it is inferior to both turnips and cabbages. The sheep are folded upon *Rape* in the same manner as practised with turnips, from November to April. *Rape* is cultivated in gardens as a small salad herb, to be gathered young in the seed-leaves, and used as cresses and mustard. Like these it has a warm flavour, and is recommended as a stomachic. This plant is very generally cultivated in the eastern parts of France.

"*Culture for small salading*. Sow at the same time with cresses *Lepídium Satìvum* mustard, *Sinàpis álba*, in spring and winter, or at any season when small salading is required. Sow in drills, and follow the culture directed for White Mustard."

* B. esculénta (D. C. l. c.) root fusiform, thickened under the neck. Lob. icon. 200. f. 1.—Bauh. hist. 2. p. 842. icon.—Mor. oxon. 2. p. 214. sect. 3. t. 2. f. 1. This plant is usually confused with the *Swedish turnip* and the *common turnip*.

Var. α, álba; (D.C. syst. 2. p. 593.) root white, esculent. Nàpus dúlcis. Blackw. herb. t. 410. This is the most common variety.

Var. β, flàva; (D. C. l. c.) root yellow, esculent.

Var. γ, nígricans; (D. C. l. c.) root with a black skin, esculent.

"The *Navew*, *Navet*, *Chou Navet*, or *French turnip*, Dickson observes, (Hort. trans. vol. I.) enriches all the foreign soups. Stewed in gravy it forms a most excellent dish, and being white, and of the shape of a carrot, when mixed alternately with those roots upon a dish, it is very ornamental. In France, as well as Germany, few great dinners are served up without it in one shape or other." "In using it there is no necessity to cut away the outer skin, or rind, in which, indeed, the flavour chiefly resides; scraping it will be quite sufficient." Justice observes, (Brit. gard. direct. p. 159.) that it is neither fit to be boiled alone, nor raw, but that two or three of them, in seasoning, will give a higher flavour than a dozen of any common turnips.

"The great advantage attending the cultivation of this root is, that it requires no manure whatever; any soil that is poor and light, especially if sandy, suits it, where it seldom exceeds the size of one's thumb or middle finger; in rich manured earth it grows much larger, but it is not so sweet, or good in quality." *Justice and Dickson.* Sowing broad-cast, in the way of *Turnips*, is the way of cultivating the *Navet*.

Rape or Coleseed. Fl. April, June. Clt.? Pl. 2 to 3 feet.

5 B. præcox, (Waldst. et Kit. ined. D. C. syst. 2. p. 593.) leaves smooth, covered with greyish-glaucous bloom; radical and lower stem-leaves lyrate, upper stem-ones cordate-lanceolate, stem-clasping, crenated; pods erect. ⊙. H. Cultivated throughout middle Europe, in fields in the mountains. *Navette d'été* (Fr.) *Kohl Reps*, *Summer Reps* (Germ.). Flowers sulphur-coloured. The summer *Navette* is less cultivated than the *Coleseed*, being less prolific, the seeds being much smaller. It is chiefly cultivated on hilly ground, where the winter *Navette* will not grow. Being an annual it is sown in the spring and reaped in the autumn.

Early Coleseed. Fl. Aug. Clt.? Pl. 2 feet.

6 B. Crética (Lam. dict. 1. p. 747.) stem shrubby at the base; leaves ovate-roundish, crenated, stalked, smooth. ♄. F. Native of Crete, as well as in all the islands of the Archipelago, in the fissures of rocks. Smith. fl. græc. t. 645. Flowers racemose. Similar to *B. oleràcea*. Stem a foot high, dividing into 2 or 3 short thick branches at the top.

Cretan Cabbage. Fl. April, May. Shrub 2 ft.

7 B. Chine'nsis (Lin. amœn. 4. p. 280.) herbaceous; leaves oval, almost quite entire, floral ones lanceolate, clasping the stem; calyx longer than the claws of the petals. ♂. H. Native of China. B. violàcea, Burm. fl. ind. p. 140? Stem tall, erect, branched; the whole plant rather glaucous. Flowers yellow or violet.

Chinese Cabbage. Fl. June, July. Clt. 1770. Pl. 3 to 4 ft.

8 B. viola'cea (Lin. spec. 932.). herbaceous; leaves ovate-lanceolate, glabrous, undivided, toothed; sepals and ovaries villous; pedicels furnished with bracteas. ♂. H. Native of China. Racemes terminal. Flowers whitish-purple, reticulated; petals twice the length of the calyx.

Violaceous-flowered Cabbage. Fl. May, June. Pl. 2 feet.

9 B. Magella'nica (Juss. ined. Pers. ench. 2. p. 207.) herbaceous; leaves glabrous, pectinately pinnate-parted; flowering racemes rather corymbose. ♂? H. Native of the Straits of Magellan. Petals obovate, apparently white, about the size of those of *B. Cheiranthos*. Deless. icon. sel. 2. t. 85.

Magellan Cabbage. Pl. 2 feet?

10 B. Helenia'na (Burch. fl. st. hel. ined. no. 128.) herbaceous; leaves lyrately-pinnate, rather scabrous, radical ones with 9 or 10 pairs of leaflets, stem-ones with 1 or 2 pair; terminal lobes very large. ♂. H. Native of the island of St. Helena, in moist situations in the valley called Arno's Vale, near Longwood. Root twisted, slender. Stem ascending, branched. Flowers white or purple, veined with black. Perhaps a species of *Ráphanus*.

St. Helena Cabbage. Pl. 2 feet.

11 B. villòsa (Biv. ex Spreng. syst. app. p. 243.) suffruticose, villous; leaves all stalked, lyrate, and toothed. Flowers paniçled; sepals erect; pods somewhat tetragonal. ♄. F. Native of Sicily.

Villous Cabbage. Pl. 2 foot.

12 B. inca'na (Tenor. app. hort. nap. cat. p. 59.) plant clothed with hoary soft down; lower leaves stalked, lyrate; terminal lobe large, toothed; stem suffruticose at the base; siliques smooth, 5-times longer than the beak. ♄. F. Native of Goat's Islands, and near Naples, and on the higher mountains of Sicily, on rocks. Flowers pale-yellow.

Hoary Cabbage. Fl. April, May. Clt. 1820. Shrub 2 ft.

13 B. Balea'rica (Pers. ench. 2. p. 206.) plant smooth; lower leaves stalked, sinuated, somewhat fiddle-shaped, rather fleshy; stem suffruticose at the base; siliques 5-times longer than the beak. ♄. H. Native of the Balearic islands, and on the red rock at Nice. Deless. icon. sel. 2. t. 86. B. sempervìrens, Schrank hort. mon. t. 10. Stem branched. Leaves resembling those of oak. Flowers pale yellow. Perhaps a species of *Erùca*.

Balearic Cabbage. Fl. May, July. Clt. 1820. Shrub 2 ft.

14 B. Gravìnæ (Tenor. app. prim. cat. hort. nap. p. 59. fl. neap. t. 62.) plant covered with hispid pubescence; lower leaves oblong, runcinate, with the teeth or lobes entire and acute; calyx spreading; siliques glabrous. ♃. H. Native of Naples, on the mountains in Abruzzo. Caudex radiciform, suffrutescent, short. Stem annual, erect, branched a little. Flowers yellow. Stigma capitate, 2-lobed.

Gravina's Cabbage. Fl. May, June. Clt. 1823. Pl. 2 ft.

15 B. hy'brida (Tenor. prod. fl. nap. p. 59.) stem shrubby at the base, smooth above, leafy; leaves smooth; lower ones lyrate, denticulated, upper ones somewhat hastate, sessile; pedicels very short; calyx coloured, closed. ♄. H. Native of Naples. Flowers yellow.

Hybrid Cabbage. Pl. 2 feet.

16 B. pinnati'fida (Desf. fl. atl. 2. p. 95. t. 166.) leaves pinnatifid, glabrous; lobes lanceolate, serrated; ribs and petioles rather hairy; siliques somewhat tetragonal. ♂. H. Native of Mauritania and Spain. Stem branched, hairy at the base. Flowers the size and colour of those of *B. oleràcea*.

Pinnatifid-leaved Cabbage. Fl. May, June. Clt. 1818. Pl. 2 to 3 feet.

17 B. lyra'ta (Desf. fl. atl. 2. p. 96. t. 166.) leaves hispid, radical ones lyrate, stem ones deeply toothed; calyx and siliques hispid; stem ascendant. ⊙? H. Native of the north of Africa, in sandy deserts. Stems numerous from the same tuft, simple or branched, hispid. Flowers small, violaceous, reticulated. Habit of *Diplotáxis erucoìdes*.

Lyrate-leaved Cabbage. Fl. in the water. Pl. ¾ foot.

18 B. hu'milis (D. C. syst. 2. p. 598.) leaves all radical, fleshy, pinnatifid; lobes entire, bearing hairs at their apex; scapes naked; siliques spreading, tapering to the base, terminated by a thickish style. ♃. H. Native near Montpelier. Sisýmbrium repándum β, D. C. cat. hort. monsp. 62. Root long, hard, with numerous naked scapes rising from it. Flowers yellow.

Humble Cabbage. Fl. May, June. Clt. 1820. Pl. ½ foot.

19 B. repa'nda (D. C. syst. 2. p. 598.) leaves all radical, fleshy, glabrous, repand-toothed; scapes naked; style slender, distinct from the silique. ♃. H. Native of Dauphiny, Piedmont, and Provence, on mountains in exposed situations. Sisýmbrium Monénse, Vill. dauph. 3. p. 350. t. 39. S. repándum, Willd. spec. 3. p. 497. Very like the preceding in habit.

Repand-leaved Cabbage. Fl. June, Aug. Clt. 1820. Pl. ½ ft.

Sect. II. Eruca'strum (altered from *Erùca*.) D. C. syst. 2. p. 598. prod. 1. p. 216. Siliques sessile, ending in a conical beak which contains 1-2 seeds at the base.

20 B. Riche'rii (Vill. dauph. 3. p. 331. t. 36.) leaves smooth, lower ones oblong, somewhat toothed, stalked, upper ones linear-lanceolate, few. ♃. H. Native of the Alps of Piedmont, Dauphiny, and Provence, in stony meadows. All. ped. no. 967. t. 58. f. 1 and 76. f. 2. Root hard, twisted, woody, with numerous annual stems rising from the neck. Flowers yellow, very like those of *B. oleràcea*.

Richer's Cabbage. Fl. July, Aug. Clt. 1820. Pl. 1 foot.

21 B. Mone'nsis (Huds. angl. 291.) leaves smooth, rather fleshy, and somewhat glaucous, pinnatifid; lobes linear, distant, toothed. ♃. H. Native on the sandy sea-coast, plentiful on the coast of Cumberland and in Walney Island. Anglesea but rare, also near Liverpool. In the isles of Bute, Arran, and Man, and several other parts of the western coast of Scotland, also between Dundee and Forfar. Sisýmbrium Monénse, Lin. spec. ed. 1. p. 658. Smith, engl. bot. 962. Lightf. fl. scot. 1. p. 352. t. 15. Lam. ill. t. 565. f. 2. Man Rocket, Pet. herb. brit. t. 46. f. 7. Root woody, thick, with numerous stems rising from the neck. Cauline leaves very few. Racemes corymbose, 7-8-flowered. Flowers large, yellow, veined.

Isle-of-*Man* Rocket or Cabbage. Fl. June, July. Britain. Pl. ½ to ¾ foot.

22 B. Eruca'strum (Lin. spec. 932.) leaves runcinate, smoothish; lobes unequal, bluntly sinuated; stem hispid at the base. ⊙. H. Native of France, Italy, Switzerland, &c. in sand and among rubbish. Bull. herb. t. 331. Sisýmbrium Erucástrum, Vill. dauph. 3. p. 342. Erùca sylvéstris, Lam. fl. fr. 2. p. 497. Erùca Erucástrum, Baumg. fl. trans. 2. p. 265. Erýsimum Erucástrum, Scop. carn. ed. 2. p. 27. The synonyms are very doubtful. Flowers yellow, veined. The beak of the pod is sometimes very small and 1-seeded, sometimes without seeds.

Eruca-like Rocket. Fl. June, Aug. Clt. 1790. Pl. 1 foot.

23 B. cheira'nthos (Vill. dauph. 3. p. 332. t. 36.) leaves stalked, hispid, pinnatifid; lobes sinuately-toothed, oval-oblong; stem hispid at the base; silique 4-times longer than the beak. ♂? H. Native of the south of France, Dauphiny, Piedmont,

Savoy, Switzerland, in sand on the banks of rivers and rivulets. Sinàpis Tournefórtii, All. ped. no. 692. exclusive of the synonyms. Sisýmbrium Monénse, Gilib. elem. 2. p. 184. Erýsimum arvénse, Thor. chlor. land. 284. Flowers yellow. This is a very polymorphous plant.

Var. β, *Sinàpis recurvàta* (All. ped. no. 963. t. 37.) Perhaps this plant is specifically distinct from the calyx, being more loose, and the beak of the pod rougher. Native of Piedmont and Mauritania on hills in exposed situations.

Var. γ, *B. montàna* (D. C. fl. fr. 4. p. 651.) Native of the Pyrenees on the higher mountains. This plant is humble, almost stemless, and tufted.

Wallflower Cabbage. Fl. Ju. Sep. Clt. 1819. Pl. 1 to 2 ft.

24 B. cheiranthiflòra (D. C. syst. 2. p. 601.) radical leaves stalked, lyrately-pinnatifid, rather hispid, cauline ones few, with entire acute lobes; root slender; siliques 3 times longer than the beaks. ⊙. H. Native of Spain, France, in sandy places. Sisýmbrium Burgundìacum, Hort. taur. Ráphanus cheiranthiflòrus, Willd. hort. berl. 19. t. 19. Root slender, perpendicular. Stem simple. Flowers yellow.

Stock-flowered Cabbage. Fl. Ju. Aug. Clt. 1806. Pl. 1 ft.

25 B. Tournefo'rtii (Gouan. ill. p. 44. t. 20. f. A.) radical leaves stalked, hairy, lyrately-pinnatifid; lobes ovate, crenated; siliques twice as long as the beak. ⊙. H. Native of Spain and Egypt on the margins of sub-humid fields. Erùca erécta, Lag. cat. hort. madr. 1815. p. 20. Root slender, perpendicular. Stem rather hispid at the base. Flowers pale-yellow.

Var. β, *B. sisýmbrioìdes* (Fisch. in litt.) ⊙. H. Native of Persia about Lencheran. This plant differs from the species, in the habit being smaller, as well as in the leaves being pinnate; the lobes are equal, and the terminal one is hardly larger than the lateral ones.

Tournefort's Cabbage. Fl. June, July. Clt. 1818. Pl. 1 ft.

26 B. lævigà'ta (Lag. varied. p. 40. no. 19.) radical leaves on short stalks, hairy, runcinately-pinnatifid; lobes acutely toothed; stem smooth, almost naked, siliques 4 times longer than the beak. ⊙? ♂. H. Native of Spain in sandy places. Root white, perpendicular. Leaves rather glaucous. Petals white, streaked with livid veins.

Smoothed Cabbage. Fl. June. Clt. 1820. Pl. 1 foot.

27 B. Valenti'na (D. C. syst. 2. p. 603.) lower leaves stalked, clothed with stiff hairs, pinnatifid; lobes a little toothed, upper leaves smooth, almost entire; pedicels shorter than the calyx; silique round, 3 times longer than the beak. ⊙. H. Native of Spain about Madrid, and in the province of Valencia. Sisýmbrium Valentìnum, Lin. spec. 920. Erùca híspida, Cav. mss.—Barrel. icon. t. 195. f. 1. Root hard, white, branched. Flowers white.

Valencia Cabbage. Fl. March, April. Clt. 1818. Pl. 1 foot.

28 B. erysimoi'des (Sieb. ex Spreng. syst. 2. p. 912.) hispid; stem branched; leaves lyrate; pods erect, beset with reflexed hairs, crowned by a long beak. ♂? H. Native of Egypt. Flowers pale-yellow.

Erysimum-like Cabbage. Pl. 2 feet?

29 B. strigòsa (D. C. syst. 2. p. 603.) lower leaves lyrately-pinnatifid, hispid; lobes ovate, toothed, terminal one large; stem hispid at the base, with retrograde hairs; silique 4 times longer than the beak. ⊙? H. Native of the Cape of Good Hope. Sisýmbrium strigòsum, Thunb. prod. 109. Ery'simum scabròsum, Banks, herb. Root long, perpendicular. Stem simple, a little furrowed. Flowers yellow?

Strigose Cabbage. Fl.? Pl. 1 foot.

30 B. fruticulòsa (Cyr. pl. rar. 2. p. 7. t. 1.) lower leaves rather pilose, lyrate; lobes blunt, toothed, terminal one very large; stem suffruticose at the base, and hispid, but glabrous at the apex; siliques torose, 4 times longer than the beak. ♄. H. Native of Naples, Spain, Sicily, Greece, &c. on arid hills and in cultivated places. Sinàpis radicàta, Desf. fl. atl. 2. p. 98. t. 167. Smith, fl. græc. t. 648. Flowers pale-yellow. This is a species apparently between *Brássica* and *Sinàpis*; it has a spreading calyx as in *Sinàpis*, but the habit and fruit is that of *Brássica*.

Shrubby Cabbage. Fl. May, July. Clt. 1818. Pl. 1½ foot.

31 B. Cyreni'aca (Spreng. syst. 2. p. 911.) smooth; upper leaves cordate-ovate, serrulated, stem-clasping; calyx smooth; pod torulose; beak tetragonal, 2-edged, obtuse. ♂. H. Native of Lybia or Cyreniaca. Ráphanus amplexicaúlis, Viv.

Cyrenian Cabbage. Pl. 2 feet.

32 B. pinna'ta (Spreng. syst. 2. p. 912.) smooth; leaves pinnate; leaflets linear, obtuse, almost entire; pods spreading, furfuraceous, torulose, crowned by a long beak. ♂. H. Native of the north of Africa in the great Syrtis. Ráphanus pinnàta, Viv. fl. lyb.

Pinnate-leaved Cabbage. Pl. 2 feet?

Sect. III. Micropòdium (from μικρος, *mikros*, small, and πους, *pous*, a foot; in allusion to the siliques being seated on short pedicels.) Silique elevated above the receptacle on a short pedicle, terminated by the short slender style, which is tipped by a capitate stigma. Allied to *Diplotáxis*, but there is only one row of seeds in each cell.

33 B. elonga'ta (Ehrh. beitr. 7. p. 159.) leaves stalked, lower ones sinuately-pinnatifid, hispid, upper ones smooth, toothed; stem smooth. ♂. H. Native of Transylvania, Hungary, Tauria, and Caucasus, on sandy hills, and by way-sides in sterile places. Waldst. et Kit. hung. 1. p. 26. t. 28. Sinàpis lævigàta, Pall. ined. taur. Habl. p. 164. This species is truly difficult to class as the calyx is not closed as in *Brássica*, nor is it loose as in *Sinàpis*. Flowers yellow. This species is cultivated in Hungary for the sake of expressed oil of the seeds. The cultivation of *Sinàpis nìgra* will answer well for this plant.

Elongated-racemed Cabbage. Fl. June, Oct. Clt. 1817. Pl. 2 to 4 feet.

34 B. sabula'ria (Brot. phyt. p. 97. t. 43.) radical leaves rather pilose, pinnatifid or runcinate, upper ones linear; stem hispid at the base. ⊙. H. Native of Portugal in sandy fields, especially about Coimbra and Lisbon, also of Sardinia. Sisýmbrium Párra, Lin. mant. 255. Calyx greenish-yellow; petals yellow. This plant was supposed to have originally come from Para in Brazil, whence the Linnæan name.

Sand Cabbage. Fl. June, July. Clt. 1818. Pl. 2 to 3 feet.

35 B. fra'gilis (Sieb. ex Spreng. syst. 2. p. 912.) smoothish; leaves oblong, running into the petiole, unequally toothed; racemes elongated; pedicels hispid; pods erect, stipitate, crowned by the shortish thick style. ♂. H. Native of Egypt.

Brittle Cabbage. Pl. 1 foot.

† *Species not sufficiently known.*

36 B. bu'nias (D. C. syst. 2. p. 606.) ♂? H. Native probably of the Levant. This plant has been confused with the true *Bùnias orientàle*, Lin. and is mixed with it in his herbarium, but it differs from that plant in the young pods being terete, slender, and smooth, terminated by a filiform style, adult ones oblong, crowned by a seedless conical beak. Bùnias foliis retrorsùm sinuatis, Lin. hort. ups. 186. The terminal lobe of the leaf is very large, and the lateral ones incline backwards; the cauline ones are small and entire. Racemes panicled and elongated.

Bunias-like Cabbage. Fl. June, July. Pl. 2 to 3 feet.

37 B. rectangula'ris (Viv. append. fl. cors. in Schlecht. Linnæa 1. p. 502.) leaves rectangularly-pinnate; outer pinnæ confluent; leaflets sessile, and are as well as the segments broad-linear, deeply serrated; claws of petals, as well as the stamens,

exceeding the length of the calyx; beak compressed, equal in length to the pod, which is smooth. Native of Corsica. Flowers yellow.

Rectangular-pinnate-leaved Cabbage. Pl. 1 foot?

38 B.? HI'RTA (Mœnch, suppl. p. 85.) ⊙. H. Native of? Leaves smooth, rather fleshy, lanceolate or linear-lanceolate, a little sinuated. Petals obcordate, emarginate, cream-coloured, with fuscous veins. Pods 4-6-seeded, hairy, crowned by a permanent pilose style, which is rather longer than the pod. This is perhaps a species of *Erùca*. Stem decumbent.

Hairy Cabbage. Fl. June, July. Pl. ½ to 1 foot long.

39? B. Forska'hlii (Schultz, obs. p. 131. no. 1012.) ⊙? H. Native of? Leaves all doubly pinnatifid, strigose. Stem and calyxes hispid. Siliques erect, smooth. Petals greenish-yellow.

Forskahl's Cabbage. Pl. 1 foot.

40? B. purpura'scens (Russ. in Schrad. journ. 1. p. 426.) ♂? H. Native about Aleppo. Leaves lanceolate, pinnatifid. Stem pilose. Pods jointed, smooth, crowned by an awl-shaped elongated beak. Perhaps a species of *Erucària* and is probably *E. Aléppica*.

Purplish Cabbage. Pl. 1 foot.

41? B. pseu'do-eruca'strum (Brot. fl. lus. 1. p. 581.) ⊙. or ♃. H. Native of Portugal in woods. Radical leaves half a foot long, lyrately-pinnatifid. Stem-leaves glaucous, uppermost ones of these linear-oblong, entire. Calyx erectly-closed, pilose at the apex. Pod smooth, brownish-green, an inch and a half long, crowned by the ensiform style. Seeds globose, black. Petals pale, streaked with brown. Perhaps a species of *Erùca*.

False-Erucastrum. Pl. trailing.

42 B. monta'na (Raf. specch. 2. p. 69.) ♄. H. Native of Sicily on the Nebrodes. Shrubby; leaves stalked, lyrately-pinnatifid, oblong, unequally toothed; petioles compressed. Perhaps the same as *B. oleràcea* and *B. crética*, Tinea.

Mountain Cabbage. Fl. June, Oct. Clt.? Pl. 2 feet.

43 B. cri'spa (Raf. specch. 2. p. 69.) ♄. H. Native of Sicily on the Nebrodes. Shrubby; leaves stalked, lyrately-pinnatifid, obovate, sinuated, curled, obtuse, smooth; petioles depressed. Racemes simple.

Curled Cabbage. Pl. 3 feet?

44 B. macroca'rpa (Gusson, fl. sic. prod. ex Schlecht. Linnæa 4. p. 34.) ♂. H. Native of Sicily. Habit and leaves of *B. Baleárica*, but the pod is almost as thick as a finger.

Long-podded Cabbage. Pl. 2 feet.

Cult. The culture of the common esculent species and varieties of this genus we have given under their proper species above, the rest require only common culture. Those species natives of the warmer parts of the world, require shelter in the winter. None of the species are worth cultivating for ornament.

LXXXIV. SINA'PIS (σιναπι is said to be derived from the Celtic word *nap*, a designation for all plants resembling the turnip or cabbage). Tourn. inst. 227. Lin. gen. no. 821. Gært. fruct. 2. p. 299. t. 143. D. C. syst. 2. p. 607. prod. 1. p. 217.

Lin. syst. *Tetradynàmia, Siliquòsa*. Silique rather terete, with nerved valves. Style small, short, acute. Seeds disposed in one row in each cell, subglobose. Calyx spreading. Herbs rarely suffrutescent, usually annual, branched, smooth, but usually pilose, sometimes their habit is referable to *Brássica*, sometimes to *Sisýmbrium*. Leaves of various forms, lyrate, or deeply toothed. Racemes terminal, bractless. Flowers yellow. Seeds of most of the species acrid, as in the white and black mustard. The English name mustard is a modernization of *mustum ardens*, hot must.

Sect. I. Melanosina'pis (from μελας, *melas*, *black*, and σιναπι, *sinapi*, mustard, that is to say, black-mustard). D. C. syst. 2. p. 607. prod. 1. p. 217. Silique terete, somewhat tetragonal. Style short, small, not beak-formed.

1 S. ni'gra (Lin. spec. 933.) siliques smooth, even, somewhat tetragonal, appressed to the peduncle; lower leaves lyrate, upper ones lanceolate, quite entire, stalked. ⊙. H. Native throughout Europe, Spain, France, Britain, Denmark, Germany, Italy, Transylvania, Greece, &c. in cultivated fields, waste grounds, and on banks by road sides. Mart. rust. t. 51. Smith eng. bot. t. 969. Woodv. med. bot. 3. p. 409. t. 151. Horn. fl. dan. 1582. This species is easily distinguished from the rest in the leaves being pendulous, as well as in the pods being closely pressed to the rachis.

Black mustard differs materially from *white mustard* in the flowers and seeds being smaller, the latter are black; they possess the same medicinal qualities, and the young plants are used for the same purpose. It is sometimes cultivated in gardens, and the tender leaves used as greens early in spring, but the grand purpose for which the plant is cultivated is for the seeds, which ground produce the well-known condiment mustard. "If the seeds," Mr. Neill observes, "be taken fresh from the plant, and ground, the powder has little pungency, but is very bitter; by steeping in vinegar, however, the essential oil is evolved, and the powder becomes extremely pungent. In moistening mustard powder for the table, it may be remarked that it makes the best appearance when rich milk is used; but the mixture in this case does not keep good for more than two days."

"To raise seed for flower of mustard and other officinal occasions, sow either in March or April, generally the black, or occasionally the white, in an open compartment, or large sowings in fields, where designed for public supply. Sow moderately thick either in drills six or twelve inches asunder, or broad-cast, after the ground has been properly ploughed and harrowed, and rake or harrow in the seed. When the plants are two or three inches high, hoe or thin them moderately, where too thick, and clear them from weeds. They will soon run up to stalks, and in July, August, or September, return a crop of seed ripe for gathering; being tied up into sheaves and left three or four days on the stubble. It is then stacked in the field. It is remarked that rain damages it. *Black mustard* is an exhausting crop, but profitable when the soil answers, and especially in breaking up rich loamy lands, as it comes off earlier than *white mustard*, and allows time for preparing the soil for wheat. This plant is cultivated to great extent in Durham. The seed of the *black mustard*, like the *charlock*, is difficult to extirpate, for it will remain in the ground if buried to the depth of 3 or 4 inches for ages without germinating until it is raised to the surface. The *black mustard* is exclusively used for grinding into flower of mustard, and the black husks of the seeds are separated by very delicate machinery. The French either do not attempt or do not succeed in separating the husks, as their mustard when brought to table is always black. It is, however, more pungent than ours, because the quality resides chiefly in the husk. The constituents of mustard appear to be chiefly starch, mucous, a bland fixed oil, an acrid volatile oil, and an ammoniacal salt.

Var. β, *torulòsa* (Pers. ench. 2. p. 207.) leaves broad, hastately-lobed, upper ones ovate, repand; silique torulose.

Var. γ, *túrgida* (Pers. ench. 2. p. 207.) leaves lobed, repand, auriculate at the base; pods turgid, veiny, appressed, with a conical striated beak.

Var. δ, *villòsa* (Merat. fl. par. p. 265.) lower leaves ovate, toothed, somewhat sinuated, smooth, upper ones lanceolate; pods villous. ⊙. H. Native of France. S. incàna, Thuil. fl. par. ed. 2. vol. 1. p. 343. but not of Lin.

Var. ε; *lævigàta* (Burm. prod. fl. cap. p. 18.) leaves and stem smooth.

Black Mustard. Fl. June, July. Britain. Pl. 1 to 2 feet.

2 S. GENICULA'TA (Desf. atl. 2. p. 98.) pods pubescent, striated, somewhat tetragonal, appressed to the rachis, each terminated by a jointed mucrone; lower leaves lyrate, upper ones lanceolate. ⊙. H. Native of Mauritania, in corn-fields. This plant differs from *S. nìgra*, which it is very like, in the pods being slenderer, and pubescent.

Jointed-podded Mustard. Fl. Ju. Jul. Clt. 1819. Pl. 1 to 2 ft.

3 S. RETRÓRSA (Burch. cat. geogr. afr. austr. no. 4215.) pods smooth, spreading; leaves lyrately-pinnatifid; lower lobes in the form of stipulas, and are, as well as the stem, pubescent from appressed and reflexed hairs. ♂. H. Native of the Cape of Good Hope. Stem erect, branched from the base, angular, purplish. Very like *S. nìgra*.

Bent-back-haired Mustard. Pl. 2 feet.

4 S. OLIVERIA'NA (D. C. syst. 2. p. 609.) pods smooth, erectish; leaves lyrately-pinnatifid; lobes acute, terminal lobe pinnatifid, in the upper ones linear. ♂. H. Native of Persia, between Teheran and Hispahan. Flowers white, the size of those of *Ráphanus*. Stem hispid at the base.

Oliver's Mustard. Pl. 2 feet.

5 S. LEPTOPE'TALA (D. C. syst. 2. p. 610.) pods smooth, spreading; petals linear; leaves runcinately-pinnatifid, hispid in the petiole; young branches hispid. ♃? G. Native of the Cape of Good Hope. Flowers yellow; petals hardly longer than the calyx. Deless. icon. sel. 2. t. 87. Root thick, perpendicular. Stem much branched.

Slender-petalled Mustard. Pl. 2 feet.

6 S. AMPLEXICAU'LIS (D. C. syst. 2. p. 610.) pods smooth, spreading, shorter than the pedicel; leaves stem-clasping, oblong, almost entire. ⊙. H. Native of Algiers, on hills. Sisýmbrium amplexicaúle, Desf. atl. 2. p. 81. t. 153. Seeds small, rufescent, ovate-globose. Stem rather hairy at the base.

Stem-clasping-leaved Mustard. Fl. Ju. July. Pl. 1 foot.

Sect. II. CERATOSINA'PIS (from κερας, *keras*, a horn, and σιναπι, *sinapi*, mustard; pods) D. C. syst. 2. p. 611. prod. 1. p. 218. Silique crowned by a seedless conical beak.

7 S. LANCÉOLA'TA (D. C. syst. 2. p. 611.) smooth; lower leaves rather lyrate; lower lobes small, tooth-like, terminal one large, and deeply toothed; upper leaves linear-lanceolate, entire. ⊙. H. Native of Santa Cruz, and Guadaloupe. Ráphanus lanceolàtus, Willd. spec. 3. p. 562. S. integrifòlia, Vest. ex Willd.

Lanceolate-leaved Mustard. Pl. 1½ foot.

8 S. LÆVIGA'TA (Lin. amœn. 4. p. 281.) smooth; leaves stalked, lyrately-pinnate-parted; lobes acutely-toothed, terminal one large ovate; petioles not auricled at the base; upper leaves linear, almost entire. ⊙. H. Native of Spain, Portugal, and Sicily. S. cérnua, Poir. dict. 4. p. 342. S. virgàta, Presl. del. prag. Erucástrum virgàtum and E. oleràceum, Presl. ex Spreng. Silique 3-times longer than the pedicel.

Smoothed Mustard. Fl. June, July. Clt. 1769. Pl. 1 to 2 ft.

9 S. AURICULA'TA (D. C. syst. 2. p. 611.) smooth; petioles auriculately stem-clasping at the base; leaves sublyrate, somewhat auricled; upper leaves linear, almost entire. ⊙. H. Native of? S. lævigàta, Poir. dict. 4. p. 344.

Eared-leaved Mustard. Fl. Ju. July. Clt. 1800. Pl. 2 feet.

10 S. INTEGRIFÒLIA (Willd. hort. berol. t. 14.) smooth; leaves ovate-lanceolate, undivided, acutely-toothed; siliques erectish, torose, tipped by the awl-shaped style. ⊙. H. Native of the East Indies and China. This plant is perhaps not sufficiently distinct from the following.

Entire-leaved Mustard. Fl. Ju. July. Clt. 1820. Pl. 1½ to 2 ft.

11 S. JU'NCEA (Lin. spec. 934.) smooth; lower leaves ovate-lanceolate, deeply serrated, upper ones lanceolate, entire; branches fascicled; pods erectish, pointed by the awl-shaped style. ⊙. H. Native of China and Egypt. Cultivated extensively in China and Cochin-China. Jacq. vind. t. 171. S. brassicàta, Lour. fl. coch. ed. Willd. 2. p. 485. S. nìgra of Forsk. ex Delil. ill. no. 604. Very like *S. brassicàta*, but the cauline leaves are not dilated into stem-clasping auricles at the base.

Rushy Mustard. Fl. June, July. Clt. 1782. Pl. 1 to 2 feet.

12 S. CHINE'NSIS (Lin. mant. 95.) leaves deeply pinnatifid; lobes toothed, with the nerves on the under surface rather hairy; pods erectish, acuminated with the style. ♂. ⊙. H. Native of China. Cultivated both in China and Cochin-China for the sake of its seed, which is ground into Mustard, as well as being made into a sinapism. Stem furrowed slightly.—Ard. specim. 1. p. 23. t. 10. Flowers very like those of *S. júncea*.

Chinese Mustard. Fl. June, July. Clt. 1782. Pl. 1 to 2 feet.

13 S. BRASSICA'TA (Lin. syst. nat. 3. p. 231.) smooth; cauline leaves cordate, stem-clasping, oblong, nearly entire, lower ones lyrately-pinnatifid; siliques spreading, terminated by a conical beak. ⊙. H. Native of China. Habit of *Brássica oleràcea*, glaucous. Perhaps the same as *S. Chinénsis* of Lour.

Brassica-like Mustard. Fl. Ju. July. Clt. 1801. Pl. 1 to 2 ft.

14 B. CE'RNUA (Thunb. fl. jap. 261.) smooth; radical leaf lyrate, with the terminal lobe very large-ovate and deeply toothed; flowering branches drooping. ⊙. H. Native of China, and cultivated in Japan. Flowers terminal, racemose, white. Stem branched at the top. The Japanese call this plant *Takana*; the ground seeds are used by them as mustard.

Drooping-branched Mustard. Fl. June, July. Clt. 1819. Pl. 1 to 2 feet.

15 S. JAPO'NICA (Thunb. fl. jap. 262.) smooth; leaves deeply pinnatifid, with round angles; pods erect, smooth. ⊙. H. Native of Japan. Flowers yellowish.

Japan Mustard. Fl. June, July. Pl. 1 to 2 feet.

16 S. PUBE'SCENS (Lin. mant. 95.) leaves villously-pubescent, lyrately-pinnate-parted, with the terminal lobe large and ovate; pods hairy. ♃.? H. Native of Sicily, Spain, and Naples. Arduin. specim. 1. p. 21. t. 9. Every part of the plant is covered with long soft villi. Pods erect, not torose.

Pubescent Mustard. Fl. June, July. Clt. 1789. Pl. 2 feet.

17 S. CIRCINNA'TA (Desf. atl. 2. p. 96.) leaves velvety-pubescent, lyrately-pinnate-parted, terminal lobe large, circinnate. ⊙. H. Native of Mauritania in corn-fields. This is very like the preceding species, and perhaps not distinct from it.

Circinnate-leaved Mustard. Fl. June, July. Pl. 2 feet.

18 S. ARVE'NSIS (Lin. spec. 935.) pods smooth, many-angled, torulose, thrice as long as the two-edged slender beak. ⊙. H. Native throughout the whole of Europe, a pest in corn-fields, abundant in ground newly disturbed. Oed. fl. dan. t. 783. Curt. lond. t. 321. Smith, engl. bot. t. 1748. Schkuhr. handb. 2. no. 1871. t. 186. There are several varieties of this plant. *Charlock* is a common annual weed in corn-fields. The young plant is eaten in the spring as turnip-tops, and is considered not inferior to that vegetable. The seeds of it have sometimes been sold for feeding birds instead of rape; but being hot in its nature, it often renders them diseased.

Corn Mustard or Charlock. Fl. Ju. July. Britain. Pl. 1 to 2 ft.

19 S. ORIENTA'LIS (Lin. amœn. 4. p. 280.) pods clothed with bent-back hairs, somewhat tetragonal, torulose, shorter than the slender beak. ⊙. H. Native of the Levant, south and middle Europe, in corn-fields. Schkuhr. handb. 1. p. 264. t. 186. Pods hispid, but nevertheless the beak is smooth. The specimen in the Linnean herbarium has the pods evidently furrowed.

Oriental Mustard. Fl. Ju. July. Clt. 1778. Pl. 1 to 2 feet.

20 S. TIMORIA'NA (D. C. syst. 2. p. 616.) pods smooth, many-angled, torulose, 4 times longer than the slender beak;

stem and leaves smooth. ⊙. H. Native of the island of Timor. Deless. icon. sel. 2. t. 88. This plant is very like *S. arvénsis*, but the whole herb is smooth, not hispid.

Timor Mustard. Fl. June, July. Pl. 1½ foot.

21 S. Tau'rica (Fisch. cat. hort. gor. 1812. p. 51.) pods smooth, tetragonal, with 3-nerved valves, twice the length of the 2-edged conical beak. ⊙. H. Native of the south of Tauria on dry mountains. Herb branched, diffuse. Leaves oblong, smooth, toothed; lower ones deeply lobed.

Taurian Mustard. Fl. June, July. Clt. 1818. Pl. 1 to 2 ft.

22 S. sub-bipinnati'fida (Lag. cat. hort. madr. 1816. p. 20.) pods smooth, somewhat tetragonal, 6 times longer than the somewhat conical beak; leaves pinnate-parted, with unequal lobes, larger ones oblong and deeply-cut. ⊙. H. Native of Spain, particularly in the mountains of Leon. Stem beset with bent-back hairs at the base. This species ought to form a distinct section. Beak of pod long, usually with one seed at its base.

Sub-bipinnatifid-leaved Mustard. Fl. June, July. Clt. 1820. Pl. 1 to 2 feet.

23 S. Ka'ber (D. C. hort. monsp. 1808. syst. 2. p. 617.) pods smooth, terete, double the length of the conical beak, with smooth valves. ⊙. H. Native of Persia. Stem erect, simple, more or less pubescent. Leaves smooth, oblong, cut, with the incisures deeply and regularly serrated. *Kaber* is probably the Persian name of the plant.

Kaber or Persian Mustard. Fl. Ju. July. Clt.? Pl. 1 foot.

24 S. Allìonii (Jacq. vind. 2. t. 168.) pods smooth, ovate-oblong, scarcely longer than the conical beak, with even valves. ⊙. H. Native of Egypt, very common in flax-fields. Delil. fl. egyp. p. 102. t. 35. f. 1. Ráphanus erucoìdes, Lin. fil. suppl. 299. Leaves smooth, pinnatifid, or cut down to the mid-rib; lobes entire or toothed. This plant differs from *S. túrgida* in the pods being even, not nerved, and from *S. Kàber* in the valves of the pod being one-half shorter, and from both in the pedicels being longer, and in the style being more slender.

Allioni's Mustard. Fl. June, July. Clt. 1789. Pl. 2 feet.

25 S. tu'rgida (Delile, ill. fl. egypt. no. 606.) pods smooth, ovate, with reticulately-nerved valves; the pods about equal in length to the conical beak. ⊙. H. Native of Egypt. Ráphanus túrgidus, Pers. ench. 2. p. 209. Leaves pinnatifid, not truly pinnate-parted. This plant is usually confused with *S. Allìonii* in gardens, but differs in the pedicels not being longer than the calyx, as well as in the valves of pod being nerved.

Turgid Mustard. Fl. June, July. Clt. 1819. Pl. 2 feet.

Sect. III. Hirschfe'ldia (Hirschfeld, evidently the name of some botanist.) D. C. syst. 2. p. 618. prod. 1. p. 220. Siliques terete, 2-celled; cells usually 4-seeded, crowned by an ovate, 1-seeded, indehiscent beak.

26 S. inca'na (Lin. amœn. 4. p. 281. spec. 934.) pods smooth, appressed to the rachis, somewhat torulose; stem branched, scabrous below; leaves lyrate, scabrous. ♂. H. Native of the south of Europe. Jacq. vind. t. 169. Myàgrum Hispánicum, Lin. spec. 893. Hirschféldia adpréssa, Mœnch. meth. 264. Cakìle Hispánica, Lher. diss. cak. ined. p. 7. Cordylocárpus pubéscens, Smith, prod. fl. græc. 2. p. 33.

Hoary Mustard. Fl. June, July. Clt. 1771. Pl. 1 to 3 feet.

27 S. Panormita'na (Spreng. syst. append. 8. p. 244.) pods smooth, torose, appressed, longer than the beak; stem branched, hispid at the base; leaves stalked, lanceolate, toothletted, scabrous. ⊙. H. Native of Sicily near Palermo. Hirschféldia integrifòlia, Presl. ex Spreng. l. c.

Palermo Mustard. Fl. June, July. Pl. 2 feet.

28 S. heterophy'lla (Lag. cat. hort. madr. 1816.) pods pubescent, appressed to the rachis, somewhat torose; stem branched, hispid at the base; leaves lyrately-pinnatifid, hispid on the nerves. ♂. H. Native of Spain among rubbish about Madrid. Hirschféldia infléxa, Presl. ex Spreng.

Variable-leaved Mustard. Fl. Ju. July. Clt. 1822. Pl. 1½ ft.

Sect. IV. Leucosina'pis (from λευκος, *leùcos*, white, and σινα-πι, *sinapi*, mustard, that is to say, White Mustard.) D. C. syst. 2. p. 619. prod. 1. p. 220. Siliques hispid or smooth, crowned by an ensiform beak, with the valves rather torulose. This section ought probably to be joined with *Erùca*, or perhaps rather to form a distinct genus both from *Erùca* and *Sinàpis*.

29 S. a'lba (Lin. spec. 933.) pods hispid, spreading, rather narrower than the ensiform beak; leaves lyrate, and are, as well as the stem, smoothish. ⊙. H. Native of the south of Europe, viz. Spain, Portugal, Sicily, Switzerland, south of Germany, Transylvania and Greece. In Britain in cultivated as well as waste ground, and by road-sides. Mart. rust. t. 70. Curt. lond. 5. t. 46. Smith engl. bot. 1677. Schkuhr. hand. 2. t. 186. Bonánnia officinàlis, Presl. ex Spreng. Seeds large, pale. It is called in French, *Moutarde blanche, Navette d'été*, or *Graine de Beurre*. There is an esculent oil obtained from the seeds of this plant.

White Mustard. *Senévé* (Fr.). *Senf* (Germ.). *Senapa* (Ital.) It is cultivated chiefly as a small salad, and is used like cresses, while in the seed-leaf; when these are newly expanded they are mild and tender; but when the plants have advanced into the rough leaves, they eat rank and disagreeable. The seeds are yellow, and are, as well as the flower, much larger than those of *Sinàpis nìgra*. The seeds have an acrid bitterish taste, and a pungent smell when reduced to powder; they impart their taste and smell to water, whilst rectified spirits extracts extremely little of either; the whole of the pungency arises with water in distillation. Committed to the press they yield a considerable quantity of bland insipid oil, perfectly void of acrimony; the cake left after the expression is more pungent than the mustard itself.

White-mustard seed is swallowed entire to the quantity of a table-spoonful or more, to stimulate the stomach in some cases of dyspepsia, and to excite the peristaltic motion of the intestines, especially when they are torpid, as in paralysis. The powder of the *Black* and *White Mustard* made into a paste, with water, is commonly used as a condiment with animal food; infused with water it proves emetic, when taken in considerable doses, and in smaller ones acts as a diuretic and aperient; but is more frequently applied externally, as a topical stimulus, made into a paste, or sinapism, with vinegar and bread-crumb, which may be made stronger by adding a little scraped *Horse-radish* root.

Culture. For spring or summer consumption of the young plants, sow once a week or fortnight, in dry warm situations, in February and March; and afterwards in any other compartment. "In summer sow in shady borders, if it be hot sunny weather, or have the bed shaded. Generally sow in shallow, flat drills, from three to six inches apart. Scatter the seed thick and regular, and cover it thinly with earth, about a quarter of an inch. To furnish gatherings in winter, or early in spring, sow in frames, or under hand-glasses; and when the weather is frosty, or very cold, in hot-beds and stoves, as directed for *Cress*." For the sake of seed either sow a portion in March or April to stand for that purpose; or, for small supplies, leave some rows of the spring sowing, grown too large for salads; they will ripen seed in autumn. In Kent, *White Mustard* is cultivated for the use of the seedsmen in London. In the tillage, the ploughed land is harrowed over, and then furrows are stricken about eleven or twelve inches apart, sowing the seeds in the proportion of about two or three gallons per acre, in March. The crop is afterwards hoed, and kept free from weeds.

White Mustard. Fl. June, July. Britain. Pl. 1 to 2 feet.

30 S. hí'spida (Schousb. moroc. p. 182. t. 4.) pods hispid,

spreading, narrower than the ensiform beak; leaves lyrate, scabrous; stem beset with bent-back stiff hairs. ⊙. H. Native of Morocco, Teneriffe, Portugal, &c., in mountainous places, about the edges of fields. S. flexuòsa, Lam. dict. 4. p. 341. This plant is very like *S. álba*, but is easily distinguished from it in the stem being beset with retrograde hairs, not smooth.

Hispid Mustard. Fl. June, July. Clt. 1804. Pl. 2 feet.

31 S. disse'cta (Lag. cat. hort. madr. 1816. p. 20.) pods rather erect, torulose, rather shorter than the ensiform beak; leaves pinnate-parted; lobes narrow, deeply toothed, or pinnatifid. ⊙. H. Native of Spain, in fields of flax. Bonànnia dissécta, Presl. ex Spreng. Stem with a few retrograde hairs. Pods smooth, but sometimes scabrous on the nerves.

Var. α, siliques smooth.

Var. β, siliques rather hispid.

Dissected-leaved Mustard. Fl. June, July. Clt. 1817. Pl. 1 to 1½ foot.

32 S. hasta'ta (Desf. cat. hort. par. ed. 2. p. 151.) pods erectish, smooth, linear, torulose, longer than the ensiform beak; leaves smooth, pinnate-lobed; lobes lanceolate. ⊙. H. Native of New Holland. Perhaps a separate section.

Hastate-leaved Mustard. Fl. June, July. Clt. 1817. Pl. 1 to 2 feet.

33 S. foliòsa (Willd. enum. 688.) beak of pod compressed, very scabrous, longer than the pod, which is also hispid; leaves lyrate, repandly-angular, smooth. ⊙. H. Native of the Levant. Stem simple, beset with long bent-back hairs. Terminal lobe of the leaf hardly larger than the lateral ones.

Leafy Mustard. Fl. June, July. Clt. 1820. Pl. 1 foot.

34 S. A'pula (Tenore app. prim. cat. hort. nap. p. 60.) pods even, smooth, spreading; style oblong, compressed; leaves runcinately-pinnatifid, smooth; segments all lanceolate, toothed and acute. ⊙. H. Native of Naples, in Abruzzo, in corn-fields.

Apulian Mustard. Fl. Ju. July. Clt. 1823. Pl. 1 to 1½ ft.

Sect. V. Disa'ccium, (from δις, *dis*, double, σακκιον, *saccion*, a little sack; calyx bisaccate at the base.) D. C. syst. 2. p. 623. prod. 1. p. 220. Calyx half-spreading, bisaccate at the base. Stigma capitate. Perhaps this section is sufficient to constitute a distinct genus.

35 S. frute'scens (Ait. hort. kew. ed. 1. vol. 2. p. 404. ed. 2. vol. 4. p. 127.) calyx bisaccate at the base; leaves coriaceous, lower ones oblong-lanceolate, tapering to the base, somewhat toothed, upper ones lanceolate, entire. ♄. G. Native of Madeira, among the rocks near Curral das Freiras. Hook. bot. misc. 2. p. 119. t. 28. Hésperis diffùsa, Spreng. syst. 24. Stem branched, twisted, and is, as well as the leaves, smooth. Flowers about the size of those of *Cheiránthus versícolor*, of a pale yellow colour. Pods erect, smooth.

Shrubby Mustard. Fl. Ju. Dec. Clt. 1777. Shrub, 2 feet.

36 S. angustifòlia (D. C. syst. 2. p. 220.) calyx bisaccate at the base; leaves linear, entire. ♄. G. Native of Madeira. Brássica frutéscens, Sol. in herb. Banks. Flowers about the size of those of the preceding.

Narrow-leaved Shrubby Mustard. Fl. Ju. Dec. Shrub, 1 ft.

† *Species not sufficiently known.*

37 S. Pekine'nsis (Lour. fl. coch. ed. Willd. 2. p. 485.) siliques linear, smooth, compressed; leaves obovate, entire, curled; petioles flattish, broad. ⊙. H. Native of China, about Pekin, and where it is cultivated. Perhaps the same as *S. Chinénsis brassicàta*, or *júncea*. Leaves entire, runcinately serrated.

Pekin Mustard. Pl. 2 feet.

38 S. polymo'rpha (Geners, in Schult. obs. no. 1021.) siliques spreading, smooth, crowned by a somewhat tetragonal compressed beak; leaves lyrately-pinnatifid, smooth, but scabrous on the nerves and margins; stem hispid at the base. ⊙. H. Native of? Stem furrowed. Flowers large, yellow.

Polymorphous Mustard. Pl. 2 feet.

39 S. procu'mbens (Poir. suppl. 4. p. 12.) stem procumbent; radical leaves lyrately-pinnate, expanded, nearly smooth, upper cauline ones simple, stalked; lower pedicels very long, capillary. ⊙. H. Native of Mauritania, in sandy fields. Flowers pale yellow. Leaves like those of *Brássica fruticulòsa*. Stem simple, weak, smooth. Silique unknown.

Procumbent Mustard. Pl. procumbent.

40 S. nudicau'lis (Lag. cat. hort. madr. 1816. p. 20.) scape naked; radical leaves hispid, pinnatifid; siliques erect, smooth, longer than the awl-shaped beak. ♃. H. Native of the south of Spain, in mountainous places, by way-sides. Sufficiently distinct from all the others.

Naked-stemmed Mustard. Fl. Ju. Jul. Clt. 1818. Pl. 1 foot.

41 S. Mesopota'mica (Spreng in Schrad. journ. 4. p. 199.) siliques somewhat tetragonal, terminating in a point; leaves lyrate, hispid. ⊙. H. Native of Syria.

Mesopotamia Mustard. Pl. 1 foot.

† *Species only known by name, from Roxburgh's Hortus Bengalensis*, p. 74.

1 *S. dichótoma.* Native of Bengal, where it is called *Surisha*, or *Surshupa.*

2 *S. glaúca.* Native of Bengal, where it is called *Shweetrace.*

3 *S. ramòsa.* Native of Bengal, where it is called *Joony-race*, or *Rajika.*

4 *S. triloculàris.* Native of Nepaul.

5 *S. cuneifòlia.* Native of Thibet.

6 *S. erysimoìdes.* Native of Malabar.

7 *S. divarìcata.* Native of Bengal, where it is called *Bun-race.*

8 *S. pàtens.* Native of the East Indies, where it is called *Beel-race.*

9 *S. pusílla.* Native of Coromandel.

10 *S. prostràta.* Native of China.

Cult. The species of this genus will grow under any circumstances. They are mostly annuals, and require common treatment. *S. frutéscens* and *S. angustifòlia*, will grow well in a mixture of sand, loam, and peat, and ripened cuttings of them will strike root freely if planted under a hand-glass, or they may be increased by seeds. None of the species are worth cultivating, except in general collections, or in botanic gardens.

LXXXV. MORICA'NDIA (in honour of Stephan Moricand, an Italian botanist, author of Floræ Venetæ). D. C. syst. 2. p. 626. prod. 1. p. 221.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique tetragonal, somewhat 2-edged. Seeds disposed in two rows in each cell; they are ovate, small, and a little margined. Annual or biennial herbs, rather ligneous at the base, smooth, rather glaucous. Stem round, whitish, erect, branched. Leaves thickish. Racemes terminal, loose; pedicels filiform, bractless, erect. Flowers large, beautiful purplish.

1 M. arve'nsis (D. C. syst. 2. p. 626.) pods somewhat tetragonal; cauline leaves cordate, stem-clasping, quite entire. ♂. H. Native of the south of Europe in humid gravelly places, Spain, Algiers, Greece, Naples, Piedmont, Provence, &c. Brássica arvénsis, Lin. mant. 95. Smith, fl. græc. t. 644. B. purpùrea, Mill. dict. no. 6. B. perfoliàta, var. β. Lam. fl. fr. 2. p. 487. Turrìtis arvénsis, R. Br. in hort. kew. ed. 2. vol. 4. p. 108.—Bocc. sic. p. 49. t. 25. f. 3. Flowers beautiful, violaceous.

Var. β, *Brássica suffruticòsa* (Desf. fl. atl. 2. p. 94.). Native

of Spain and Mauritania on dry hills. Stem ligneous at the base. Crántzia frutéscens, Lag. fl. hisp. ined.

Corn-field Moricandia. Fl. April, Aug. Clt. 1739. Pl. 1 ft.

2 M. HESPERIDIFLO'RA (D. C. syst. 2. p. 627.) siliques compressed, with flat valves, with a nerve running through the middle; cauline leaves ovate oblong, sinuately toothed. ⊙. H. Native of Egypt, frequent in valleys about Cairo, and at the ruins of Qouhbah and Mataryeh. Hésperis àcris, Forsk. fl. ægypt. arab. descrip. p. 118. Delil. ægypt. desc. p. 103. t. 35. f. 2. Flowers of a dirty-purplish colour. Stem branched, rather angular at the base.

Hesperis-flowered Moricandia. Pl. 1 to 1½ foot.

3 M. TERETIFO'LIA (D. C. syst. 2. p. 628.) siliques compressed, with nerveless valves; leaves multifid, with filiform lobes. ⊙. H. Native of the north of Africa about Cafsa, and in Egypt about the Saqqarah Pyramids. Brássica teretifòlia, Desf. fl. atl. 2. p. 94. t. 164. Habit of plant and shape of leaves nearly like that of *Erucària Aléppica*. Flowers violaceous, about the size of those of *M. arvénsis*.

Terete-leaved Moricandia. Fl. Dec. Pl. 1 foot.

Cult. These beautiful plants deserve to be cultivated in every collection; the seeds only require to be sown in the open ground early in the spring in a warm dry situation, in light soil. If kept in pots, as greenhouse plants they will endure several years, although said to be annuals; in this state they will flower very early in the spring. They are all propagated by seeds or cuttings.

LXXXVI. DIPLOTA'XIS (from *διπλοος, diploos*, double, and *ταξις, taxis*, a series; because of the seeds being disposed in two rows in each cell). D. C. syst. 2. p. 628. prod. 1. p. 221.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique compressed, linear. Seeds ovate, disposed in two rows in each cell. (f. 47. *g.*) Calyx equal at the base. Erect, branched, smooth, or hispid herbs. Leaves of various shapes, all rather fleshy. Racemes elongated; pedicels filiform, bractless. Flowers yellow, seldom white. Calyx usually covered with soft pubescence.

Sect. I. Catoca'rpum (from *κατω, kato*, downwards, and *καρπος, karpos*, a fruit; because the pods are pendulous.) D. C. syst. 2. p. 629. prod. 1. p. 221. Style almost wanting. Stigma 2-lobed, almost sessile. Siliques pendulous, sessile, but usually stalked.

1 D. CRASSIFO'LIA (D. C. syst. 2. p. 629.) pods pendulous, stalked; leaves toothed, nearly all smooth. ⊙. H. Native of Sicily about St. Cataldo and Delia. (Raf.) Sinàpis crassifòlia, Raf. car. nov. gen. p. 78. no. 192. Stem rather hispid towards the base, sparingly branched. Flowers yellow; petals double the length of the calyx. Seeds pale brown, small.

Thick-leaved Sand-Mustard. Fl. June, July. Clt. 1818. Pl. 3 to 4 feet.

2 D. Lagasca'na (D. C. syst. 2. p. 629.) siliques pendulous, stalked; leaves pinnate-parted, piliferous, with a few distant linear lobes. ⊙. H. Native of Spain on moist rocks as well as in dry sandy places in the mountains, frequent about Alona, &c. Sisýmbrium péndulum, Lag. in litt. Stem slender, pilose at the base. Flowers yellow.

Lagasca's Sand-Mustard. Pl. 1 foot.

3 D. PE'NDULA (D. C. syst. 2. p. 630.) siliques pendulous, stalked; cauline leaves oblong, hispid, coarsely toothed. ⊙.? H. Native of the north of Africa in the sand near Cafsa. Stem pilose at the base but smooth at the top. Leaves 2-3 inches long. Flowers yellow; petals longer than the calyx. Sisýmbrium péndulum, Desf. fl. atl. 2. p. 82. t. 156.

Pendulous-podded Sand-Mustard. Fl. Dec. Feb. March. Clt. 1823. Pl. 1 to 2 feet.

4 D. HI'SPIDA (D. C. syst. 2. p. 630.) siliques pendulous, sessile; leaves obovate, coarsely toothed, hispid. ⊙. H. Native of Egypt near Cairo. Deless. icon. sel. 2. t. 89. Sinàpis Hàra, Forsk. ægyp. descr. 118. Sisýmbrium híspidum, Vahl. symb. 2. p. 77. S. Ægýptium, Juss. herb. Stem branched, leafy at the base, and beset with long, stiff, white hairs, but rather naked and smooth at the apex. Flowers yellow, middle-sized, erect.

Var. β, subglàbra (D. C. l. c.). Native near Damascus, on a mountain called Dgebel-cher. Plant almost smooth.

Hispid Sand-Mustard. Fl. May, Jul. Clt. 1819. Pl. ½ to 1 ft.

Sect. II. Anoca'rpum (from *ανω, ano*, upwards, and *καρπος, karpos*, a fruit; because of the pods being erect, not pendulous, as in the preceding section). D. C. syst. 2. p. 630. prod. 1. p. 222. Style conical, compressed, containing 1 or 2 seeds, or it is sometimes empty, terminated by a 2-lobed stigma. Siliques erect, sessile, rarely stalked.

5 D. ERUCOI'DES (D. C. syst. 2. p. 631.) siliques sessile, erectish; style ensiform; leaves sessile, runcinately-lyrate, toothed. ⊙. H. Native of Spain, Sicily, Algiers, Mogodor, by way-sides, in vineyards and olive-grounds. Sinàpis erucoìdes, Lin. amœn. 4. p. 322, Jacq. vind. t. 170. Sisýmbrium erucoìdes, Desf. atl. 2. p. 83. Stem branched, rather angular and scabrous. Petals white, large, very blunt, purplish at the claws. Seeds pale, very small.

Eruca-like Sand-Mustard. Fl. Ju. Jul. Clt. 1736. Pl. 1. to 1½ foot.

6 D. VIRGA'TA (D. C. syst. 2. p. 631.) pods sessile, erectish, crowned by an ensiform style; leaves stalked, pinnatifid, with blunt toothed lobes. ⊙. H. Native of Spain, very common about Madrid and Tudela and elsewhere, in waste places. Sinàpis virgàta, Cav. præl. ex. Lag. Stems ascendant at the base, and beset with stiff bristles, but becoming gradually smooth towards the top. It differs from the preceding plant in the flowers being yellow, as well as in the leaves being stalked.

Whip Sand-Mustard. Fl. Ju. Jul. Clt. 1817. Pl. ½ to 4 ft.

7 D. CATHO'LICA (D. C. syst. 2. p. 632.) siliques sessile, erectish, crowned by a rather terete style, which contains 1 or 2 seeds at its base; leaves pinnate-parted, with dissected lobes and linear segments, which are sinuately toothed. ⊙. H. Native of Portugal about Lisbon and Coimbra, of Spain about Madrid, by way-sides and in waste places. Sisýmbrium cathólicum, Lin. mant. p. 93. Sinàpis Hispánica, Lag. fl. hisp. ined. Stems numerous, rather procumbent, glaucous, almost smooth. Petals yellow, with their claws shorter than the calyx. Style rarely seedless. Seeds small, brown.

Universal Sand-Mustard. Fl. Ap. June. Clt. 1822. Pl. 1 ft.

8 D. TENUIFO'LIA (D. C. syst. 2. p. 632.) pods on short pedicels, erect, crowned by a short, seedless style; upper leaves entire, lower ones pinnate-parted, with linear, entire, or pinnatifid lobes. ♃. H. Native throughout Europe from Britain to Turkey, in gravelly, stony, waste places. In Britain on old walls and heaps of rubbish, plentiful about London, Windsor, Chester, Yarmouth, and other old towns. Sisýmbrium tenuifòlium, Lin. spec. 917. Bull. herb. t. 335. Smith, engl. bot. 525. Schkuhr. handb. 2. no. 1894. Brássica muràlis, Huds. ang. 290. Sisýmbrium sylvéstre, Burm. prod. fl. cap. 17. S. àcre, Lam. fl. fr. 2. p. 250. Erùca tenuifòlia, Mœnch, meth. 357. Erýsimum tenuifòlium, Clairv. herb. val. 220. Sinàpis tenuifòlia, R. Br. in hort. kew. ed. 2. vol. 4. p. 128. Herb smooth all over. Calyx smooth, or only pilose at the top. Petals twice as long as calyx, yellow.

Fine-leaved or Narrow-leaved Wall-Mustard or Wall-Rocket. Fl. June, Oct. Britain. Pl. 1 to 2 feet.

9 D. MURA'LIS (D. C. syst. 2. p. 634.) pods sessile, erect, crowned by a rather filiform, short style; radical leaves toothed or lyrate, smooth. Stems almost naked, ascendant. ⊙. H.

Native of gravelly or sandy waste places in France, Italy, Germany, Austria, Transylvania, and Britain. In Britain in sandy barren ground near the sea, common throughout the isle of Thanet, particularly about Ramsgate ; and below Bristol. Sisýmbrium muràle, Lin. spec. 918. Smith, engl. bot. t. 1090. Schkuhr. handb. 2. no. 1988. t. 187. A'rabis Canadénsis, Mill. dict. no. 6. Erùca decúmbens, Mœnch. meth. 257. Sinàpis muràlis, R. Br. in hort. kew. ed. 2. vol. 4. p. 128. A very variable plant in habit. Flowers smaller and paler yellow than those of *D. tenuifòlia*.

Var. β ; lobes of leaves more profoundly and more acutely toothed. Sisýmbrium erucástrum, Gouan. ill. p. 42. t. 20.

Var. γ, mìnor (D. C. syst. 2. p. 634.) lobes of leaves blunt and more profound. Sisýmbrium Barrelièri, Thuil. fl. par. ed. 2. vol. 1. p. 334.

Var. δ, pygmæ'um (D. C. l. c.) Sisýmbrium Monénse, Thuil. fl. par. ed. 2. vol. 1. p. 333.

Wall or Sand-Mustard. Fl. July, Sept. Britain. Pl. 1 ft.

10 D. Barrelie'ri (D. C. syst. 2. p. 634.) pods sessile, erect, crowned by a short, somewhat filiform style ; radical leaves runcinate, toothed, hispid ; stem naked, erect, smooth at the top. ⊙. H. Native of Spain about Madrid, and perhaps of Italy. Sisýmbrium Barrelièri, Lin. spec. 919.—Barrel. obs. p. 44. t. 1016. Stem branched. Leaves rosulate. Flowers yellow, but when dry whitish.

Barrelier's Sand-Mustard. Fl. Ju. Jul. Clt. 1770. Pl. 1 ft.

11 D. scapo'sa (D. C. syst. 2. p. 635.) pods sessile, erect, crowned by a short somewhat filiform style ; radical leaves smooth, oblong, pinnatifid, with short entire lobes ; stems naked, very short. ⊙? H. Native of the island Lampedosa. A small, smooth, many-stemmed herb. Scapes sometimes shorter, sometimes longer than the leaves. Calyx smooth. Petals obovate, yellow. Seeds small, orbicular.

Scape-stemmed Sand-Mustard. Pl. ¼ foot.

12 D. vimi'nea (D. C. syst. 2. p. 635.) pods sessile, erect; style short, filiform ; radical leaves lyrate, very blunt, smooth ; stem naked, somewhat decumbent. ⊙. H. Native of vineyards, cultivated, and sandy places ; in France about Paris, Dauphiny, Montpelier, Provence ; Italy, Naples, and Sicily about Agrigentum. Sisýmbrium vimíneum, Lin. spec. 919. S. pùmilum, Lam. fl. fr. 2. p. 516. S. vineàle, Gat. fl. mont. 120.—Bocc. sic. 19. t. 10. A small, smooth herb, like *D. muràle*. Flowers small, yellow.—Mor. oxon. 2. p. 229. no. 8. sect. 3. t. 5. f. 8.

Twiggy Sand-Mustard. Fl. May, July. Clt.? Pl. decumb.

13 D. saxa'tilis (D. C. syst. 2. p. 636.) pods erect, sessile, tapering to the base ; style short, conical ; radical leaves pinnate-lobed, thickish, with entire lobes ; stems almost naked, erect. ♃. H. Native of Spain, Piedmont, and Tauria on rocks. Sisýmbrium Monénse, Lin. spec. ed. 2. p. 918. but not of his first edition. S. saxátile, Lam. fl. fr. 2. p. 517. S. repándum, Poir. dict. 7. p. 209. S. Monénse, var. Gerárdi, Smith, in Rees' cyclop. S. muràle and S. vimíneum, Bieb. fl. taur. ex suppl. p. 439. S. Valentìnum, Juss. herb. Root thick. Stem either naked or leafy at the base. Calyx smooth. Flowers yellow.

Rock Sand-Mustard. Fl. June, July. Clt. ? Pl. ¼ to ½ ft.

14 D. ramosi'ssima (Spreng. neu. entd. 3. p. 52.) pods erect, crowned by a short, terete style ; leaves all lanceolate, elongated, and nearly sessile, quite smooth and quite entire. ♃. H. Native of? Siliques terete, on long stalks.

Much-branched Sand-Mustard. Pl. 1 foot.

15 D. si'mplex (Spreng. syst. 2. p. 914.) stem almost naked, smooth ; radical leaves oblong-linear, remotely toothed ; cauline leaves few, linear, entire ; beak of pod filiform, crowned by a capitate stigma. ⊙. H. Native of the north of Africa. Sisýmbrium símplex, Viv. fl. lyb. Flowers yellow.

Simple-stemmed Sand-Mustard. Pl. 1 foot.

16 D. seto'sa (D. C. syst. 2. p. 699.) ♃. H. Native of the Pyrenees. Turrìtis setòsa, Lapeyr. abr. suppl. 93. Root perpendicular. Radical leaves numerous, erect, runcinate, others profoundly toothed, and others pinnatifid. Stem naked. Flowers capitate, crowded. Calyx erect, closed, purplish. Petals yellow, narrow, with long claws, nevertheless they are shorter than the stamens. Pods long, terete, smooth, truncate. The whole plant is clothed with white bristles, intermixed with white hairs.

Bristly Sand-Mustard. Pl. 1 foot.

Cult. None of these plants are worth cultivating except in general collections. The perennial species can be increased by dividing the plants at the root or by seeds. The seeds of the annual and biennial kinds only require to be sown in the open ground. They will all grow under any circumstances.

LXXXVII. ERU'CA (said to be from *uro*, to burn; because the seeds have an acrid burning taste, and when applied to the skin occasion blisters.) Tourn. inst. 227. t. 111. D. C. syst. 2. p. 636. prod. 1. p. 223.—Euzòmum, Link. enum. 2. p. 174.

Lin. syst. *Tetradynàmia, Siliquòsa.* Silique terete, crowned by a large ensiform or conical style. Seeds globose, disposed in a single row in each cell. Calyx erect, equal at the base. Annual erect branching herbs, with pinnate-lobed leaves, erect terminal racemes of flowers, which are white or yellow, and beautifully reticulated with brown veins.

1 E. sati'va (Lam. fl. fr. 2. p. 496.) leaves lyrately-pinnatifid, with toothed acute lobes; stem hairy ; pedicels shorter than the deciduous calyx. ⊙. H. Native of cultivated fields and by way-sides in the north of Africa, Spain, Portugal, France, Switzerland, Italy, and Greece. E. fœ'tida, Mœnch. meth. 256. E. grandiflòra, Cav. præl. p. 426. Sinàpis Erùca, Clairv. herb. val. 220. Brássica Erùca, Lin. spec. 932. Smith, fl. græc. t. 646 and t. 647.—Lob. icon. 204. f. 1.—Chabr. sciagr. 276. f. A very polymorphous plant ; it is sometimes smooth, sometimes hairy, from 3 inches in height to 2 feet, and the flowers are very variable in colour. Perhaps numerous species are confused under the head of varieties. The whole herb is acrid to the taste, and has a strong disagreeable smell when bruised. The seeds are very acrid, and blister when bruised and applied to the skin ; they are also reckoned sialagogue and aphrodisiacal.

Var. α ; flowers white ; pods smooth. Brássica Erùca, Blackw. herb. 242.

Var. β ; flowers white ; pods pilose.

Var. γ ; flowers yellow ; pods smooth. Brássica Erùca, Bull. herb. t. 313. Schkuhr. handb. 2. no. 1870. t. 186.

Var. δ ; flowers yellow ; pods pilose. Brássica Erùca, Var. β. Smith. fl. græc. t. 646, and 647.

Var. ε ; flowers pale ; pods smooth and turgid. Bràssica túrgida, Pers. ench. 2. p. 207.

Var. ζ ; stem smooth ; pods hispid. Brássica erucoìdes, Horn. hort. hafn. 2. p. 621.

Var. η ; stem and pods smooth. Sinàpis exótica. Hort.

Garden Rocket (Eng.) *Roquette cultivée. La Rocket des Jardins* (Fr.). *Raukette* (Germ.) *Ruccola* (Ital.).

This plant has been known in Britain since 1573. When in flower, in July, it has a strong peculiar smell, almost fetid. This plant is now neglected in Britain, but is still in use in several places on the continent, where the leaves and tender stalks are used as salad ingredients, and form an agreeable addition to *Mustard* and *Cress* early in spring. The seeds should be sown in a warm border, early in February, and again in March and April, for successive crops. Thin the plants after they have produced the first rough leaves, to 3 or 4 inches apart, and keep them clear of weeds. If a supply is desired throughout the year, monthly sowings may be made. They will produce abundance of seed in August : for this purpose allow a

few of the strongest plants of the spring sowing to come into flower. Any of the above varieties will answer.

Garden, or *Cultivated* Rocket. Fl. June, July. Clt. 1573. Pl. rambling, either erect or prostrate, from $\frac{1}{4}$ to 2 feet high.

2 E. HÍSPIDA (D. C. syst. 2. p. 638.) leaves lyrately-pinnate-parted, with toothed lobes, of which the terminal one is very blunt; stem hispid; pedicels longer than the deciduous calyx. ⊙. H. Native of Naples, in the fields of Lucania. Brássica híspida, Tenor. cat. app. hort. nap. p. 59. Stem beset with long, stiff, spreading hairs. Flowers white, veined with brown.

Hispid Garden Rocket. Fl. June, July. Clt. 1800. Pl. $\frac{1}{2}$ to 1 foot.

3 E. VESICA'RIA (Cav. ex Lag. D. C. syst. 2. p. 638.) leaves pinnatifid, with acute almost entire lobes; stem hairy; calyx permanent, somewhat bladdery. ⊙. H. Native of Spain, in corn-fields, and on the tops of the mountains of Leon. The leaves are more elongated than in *E. satìva*, and the terminal lobe is hardly larger than the lateral ones.

Var. α, albiflòra (D. C. l. c.) flowers white, lined with black. Brássica vesicària, Asso. syn. arrag. 88. t. 4. Native of Syria, about Aleppo, and of Spain, in Arragon.

Var. β, flaviflòra (D. C. l. c.) flowers yellow, lined with black. Brássica vesicària, Lin. spec. 933. Native nearly throughout the whole of Spain, in corn-fields.

Bladdery-calyxed Garden Rocket. Fl. Ju. Jul. Clt. 1820. Pl. $\frac{1}{2}$ to 1 foot.

Cult. The seeds of these plants only require to be sown in the open border, and the plants afterwards treated as other hardy annuals.

Tribe XIII.

VE'LLEÆ (plants agreeing with *Vélla* in important characters) or ORTHOPLO'CEÆ (see sub-order III.) LATISE'PTÆ (from *latus*, broad, and *septum*, a partition; dissepiment broad,) D. C. syst. 2. p. 639. prod. 1. p. 223. Silicle with concave valves opening longitudinally, and with an elliptical dissepiment (f. 47. *c.*). Seeds globose. Cotyledons folded together (f. 45. *j. f.*).

LXXXVIII. VE'LLA (latinized from *Velar*, the celtic name of the *Cress.*) D. C. syst. 2. p. 639. prod. 1. p. 223. Véllæ, spe. Lin.

Lin. syst. *Tetradynàmia, Siliculòsa.* Larger stamens connate. Style ovate, tongue-shaped, flat, at the end of the silicle. An erect branched hispid shrub. Leaves alternate, obovate, entire, rough with hairs. Racemes erect, elongated; pedicels very short, lower ones generally bracteate, the rest naked. Flowers yellow, and are as well as the pods erect.

1 V. PSEUDOCY'TISUS (Lin. spec. 895.) ♄. F. Native of Spain on gypsaceous hills about Aranjuez, Lam. ill. 555. f. 2. Cav. icon. 1. p. 32. t. 42. Vélla integrifòlia, Sal. prod. 265.—Lob. obs. 505. f. 1. icon. 2. p. 49. f. 1. I. Bauh. hist. 1. p. 374. f. 2. Petals yellow, with long dark purple claws. Larger stamens perfectly connate by pairs. Seeds 2 in each cell.

False-Cytisus or Cress-rocket. Fl. April, May. Clt. 1759. Shrub 2 to 3 feet.

Cult. This shrub, although generally kept as a green-house plant, is hardy enough to live through the winter in a dry warm south border. Young cuttings will strike root if planted in sand, under a hand-glass.

LXXXIX. BO'LEUM (from βωλος, *bolos*, a bowl; in allusion to the form of the valves of the pods?) Desv. journ. bot. 3. p. 163. t. 26. D. C. syst. 2. p. 640. prod. 1. p. 223.

Lin. syst. *Tetradynàmia, Siliculòsa.* Larger stamens connate by pairs. Style slender, beak-shaped, somewhat conical at the end of the silicle. A suffruticose, erect, branched plant, hispid from stiff hairs. Leaves alternate, oblong, linear; lower ones somewhat divided. Racemes erect, elongated; pedicels very short, lower ones bracteate. Flowers yellow, and are as well as the pods erect. Perhaps not sufficiently distinct from *vélla*.

1 B. A'SPERUM (Desv. journ. bot. 3. p. 163 and 175. t. 6.) ♄. H. Native of Spain in rugged places; in Arragon between Villa Franca and Lerida; in Granada on mount Sierra-Nevada. Vélla áspera, Pers. ench. 2. p. 185. Stems twisted. Petals cream-coloured or whitish. Seeds 1 or 2 in each cell.

Rough Boleum. Fl. April, May. Pl. $\frac{1}{2}$ to 1 foot.

Cult. This pretty little shrub will answer well for ornamenting rock-work. Cuttings will root freely if planted under a hand-glass, but if it ripen seed freely, this will be unnecessary.

XC. CARRICHTE'RA (probably without meaning.) D. C. syst. 2. p. 641. prod. 1. p. 224.

Lin. syst. *Tetradynàmia, Siliculòsa.* Stamens all free. Style ovate, flat, leafy (f. 47. *c.*). An annual erect, branched, smooth, or somewhat hairy herb. Stems round. Leaves pinnate-parted, with linear toothed or deeply pinnatifid lobes. Racemes opposite the leaves, erect, elongated; pedicels bractless, filiform. Flowers small, cream-coloured, streaked with purple. Pods pendulous from the inflexed pedicels.

1 C. VE'LLÆ (D. C. syst. 2. p. 642.) ⊙. H. Native in sandy and waste fields, and along way and wall sides, in Spain, Balearic Islands, Mauritania, Sicily, Greece, and Syria. It is also said to have been found in England on Salisbury plains near Stonehenge, but it has never been met with since. Vélla ánnua, Lin. spec. 895. Gært. fruct. 2. p. 886. t. 141. Lam. ill. t. 555. f. 1. Smith, engl. bot. t. 1442. Schkuhr. handb. 2. no. 1759. t. 178. Seeds 4 in each cell. M. De Candolle remarks, that the seeds become covered with a glutinous exudation on being immersed in warm water. The whole herb is acrid and pungent to the taste.

Annual *Cress*-rocket. Fl. Feb. March in gardens. Ju. July. Britain. Pl. $\frac{1}{2}$ foot.

Cult. The seeds of this plant only require to be sown in the open ground or on rock-work. A light sandy soil suits it best.

XCI. SUCCO'WIA (in honour of Professor Suckow, a botanist of Heidelberg.) Medik. gen. pl. 1. p. 64. t. 1. f. 9. D. C. syst. 2. p. 642. prod. 1. p. 224.

Lin. syst. *Tetradynàmia, Siliculòsa.* Stamens all free. Style slender, conical. Valves of silicle echinated. An annual erect, branched, smooth herb. Stems round. Leaves pinnate-parted, with linear-toothed or cut lobes. Racemes opposite the leaves, erect, elongated; pedicels bractless, filiform. Flowers yellow. Pods erect. Seeds solitary in the cells.

1 S. BALEA'RICA (Medik. in Ust. new. ann. 1. p. 41.) ⊙. H. Native of the Balearic Islands, Teneriffe, also in Sicily about Palermo. Bùnias Baleárica, Lin. mant. 429. Jacq. vind. 144. Gouan. ill. 45. t. 20. Schkuhr. handb. 2. no. 1919. t. 189. Myàgrum Baleáricum, Lam. dict. 1. p. 571. Biscutélla Baleárica, Lher. diss. cak. ined. p. 10. Seeds pendulous, globose, somewhat spotted, solitary in each cell.

Balearic Succowia. Fl. June, July. Clt. 1781. Pl. $\frac{3}{4}$ foot.

Cult. The seeds of this pretty little annual only require to be sown in the open ground or on rock-work. A light sandy soil suits it best.

XCII. SAVI'GNYA (in honour of M. Savigny, a profound entymologist, and who also collected numerous plants in Egypt.) D. C. syst. 2. p. 283, prod. 1. p. 157.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle sessile, elliptical, with flat valves. Funicles short, free. Calyx equal at the

base. Stamens free. Style short, tetragonal. Seeds numerous, very much compressed, with broad margins. An annual smooth branched herb, with oval bluntly-toothed radical leaves, which are narrowed out into the petiole, and narrow entire stem ones. Racemes opposite the leaves. Flowers small, pale-violet.

1 S. Ægyptìaca (D. C. syst. 2. p. 283.) ⊙. H. Native of Egypt in the sand about the Saqqarah Pyramids. Lunària parviflòra, Delile, ill. fl. ægyp. p. 19. desc. 104. t. 35. f. 3. Farsètia parviflòra, Spreng. syst. 2. p. 871. Root perpendicular. Petals entire.

Egyptian Savignya. Fl. in its native country in the winter. Pl. $\frac{3}{4}$ foot.

Cult. This pretty little annual is well adapted for ornamenting rock-work, where the seeds should be sown, or they may be sown in the open border in a light sandy soil.

Tribe XIV.

PSYCHI'NEÆ (plants agreeing with *Psychìne* in many important characters,) or ORTHOPLO'CEÆ (see sub-order III.) ANGUSTISE'PTÆ (*angustus*, narrow, and *septum*, a partition; dissepiment narrow.) D. C. syst. 2. p. 643. prod. 1. p. 224. Silicle with keeled (f. 47. *j.*) or navicular valves, and with a very narrow dissepiment. Seeds compressed. Cotyledons folded together (f. 45. *f. j.*). A very distinct tribe, bearing fruit almost like those of *Thláspi*, *Capsélla*, or *Æthionèma*, and with flowers and cotyledons like *Brássica*.

XCIII. SCHO'UWIA (in honour of J. Fred. Schouw, a Danish botanist.) D. C. syst. 2. p. 643. prod. 1. p. 224.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval; valves with a narrow wing running through the whole length of the back. A branched, annual, smooth herb. Leaves and flowers almost like those of *Moricándia arvénsis.* Silicles like those of *Thláspi.* Style and seeds like those of *Psychìne.*

1 S. Ara'bica (D. C. syst. 2. p. 644.) ⊙. H. Native of Arabia Felix, on argillaceous humid mountains near Mor. Subulària purpùrea, Forsk. fl. ægyp.-arab. p. 117. Psychìne Arábica, Spreng. syst. 2. p. 880. Thláspi Arábicum, Vahl. symb. 2. p. 76. Flowers rose-purplish, at first corymbose, but at length racemose. Leaves referable to those of *Moricándia arvénsis.*

Arabian Schouwia. Fl.? Pl. $\frac{1}{2}$ to $\frac{1}{4}$ foot.

Cult. The seed of this pretty annual will only require to be sown in the open ground. A light, sandy, moist soil will suit it best.

XCIV. PSYCHI'NE (from ψυχη, *psyche*, a butterfly; because of the pods being furnished with wings like the butterfly.) Desf. atl. 2. p. 69. t. 148. D. C. syst. 2. p. 645. prod. 1. p. 224.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle triangular, narrowed at the base, with the valves winged on the back, at the end (f. 47. *j.*). An annual, hispid, branched herb. Leaves oblong or obovate, toothed; cauline ones alternate, cordate, stem-clasping, with auricles; radical ones narrowed into the stalk. Racemes opposite the leaves, elongated. Bracteas leafy, situated under the pedicels. Flowers white, with dark veins.

1 P. stylòsa (Desf. atl. 2. p. 69. t. 148.) ⊙. H. Native of Mauritania, near Mayane, on the edges of fields. Thláspi Psychìne, Willd. spec. 3. p. 443. P. Numídica, Spreng. syst. 2. p. 880.—Shaw. specim. no. 91. icon. Pods large, 3 lines long without the style, and 7 or 8 lines broad.

Long-*styled* Psychìne. Fl. Apr. May. Clt. 1822. Pl. 1 foot.

Cult. This curious annual only requires to be sown in the open border. A light, sandy soil suits it best.

Tribe XV.

ZI'LLEÆ (plants agreeing with *Zílla* in important characters,) or ORTHOPLO'CEÆ (See Sub-Order III.) NUCAMENTA'CEÆ (*nucamentum*, a catkin; shape of pods.) D. C. syst. 2. p. 646. prod. 1. p. 224. Silicle indehiscent, ovate, or globose, 1-celled, 1-seeded (f. 47. *i.*), with indistinct valves (f. 47. *i.*). Seeds globose. Cotyledons folded together. (f. 45. *f. j.*)

XCV. ZI'LLA (the Arabic name of the plant) Forsk. desc. 121. D. C. syst. 2. p. 646. prod. 1. p. 224.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle 2-celled; cells 1-seeded. A smooth, somewhat glaucous plant; at length becoming suffruticose, much branched; branches whitish; younger ones leafy; older ones leafless, stiff, divaricate, spinescent. Leaves few, oblong, toothed. Racemes few-flowered, spinescent at the apex. Pedicels filiform, short, bractless. Flowers distant, violaceous, almost like those of *Moricándia arvénsis.*

1 Z. myagroìdes (Forsk. ægyp. descr. 121. no. 74 and 75. icon. t. 17. A.) ♄. F. or H. Native of Egypt, in the deserts.

Var. α, macrocárpa (D. C. syst. 2. p. 646.) pods smooth. Bùnias spinòsa, Lin. mant. 96. Gært. fruct. 2. p. 290. t. 142. f. 2. Vent. hort. malm. t. 16. Myàgrum spinòsum, Lam. dict. 1. p. 570. no. 13. Native of Lower Egypt, about Cairo.

Var. β, microcárpa (D. C. syst. 2. p. 647.) pods with rough ribs. Native of Upper Egypt. Perhaps a proper species. The leaves of this plant are boiled and eaten by the Arabs, like those of Cabbage.

Myagrum-like Zilla. Fl. March. Clt. 1816. Pl. 2 feet.

Cult. This is rather a curious plant, and although it is always treated as a frame shrub, it is nevertheless hardy enough to stand the winter in a dry, warm, south border. A light, dry, sandy soil suits it best. It may be either increased by young cuttings planted in sand under a hand-glass, or by seeds.

XCVI. MURICA'RIA (from *muricatus*, full of prickles; pods beset with prickles.) Desv. journ. bot. 3. p. 159. t. 25. f. 2. D. C. syst. 2. p. 647. prod. 1. p. 225.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle 1-celled, 1-seeded, beset with prickles (f. 47. *i.*). Seed inserted laterally. Petals equal. A procumbent, many-stemmed herb. Leaves pinnate-lobed, alternate. Racemes opposite the leaves or terminal. Flowers white.

1 M. prostra'ta (Desv. journ. l. c.) ⊙. H. Native of the north of Africa, in sandy places, and in the kingdom of Tunis, near Cafsa. Bùnias prostràta, Desf. atl. 2. p. 76. t. 150. Myàgrum prostràtum, Poir. suppl. 2. p. 48. Laèlia prostràta, Pers. ench. 2. p. 185. Calepìna prostràta, Spreng. syst. 2. p. 850. Petals double the length of calyx. Style very short and thickish.

Trailing Muricaria. Fl. Ju. Jul. Clt. 1821. Pl. $\frac{1}{2}$ to $1\frac{1}{2}$ foot.

Cult. This plant is not worth cultivating, except in botanic gardens. The seeds only require to be sown in the open ground. A light sandy soil suits it best.

XCVII. CALEPI'NA (meaning unknown.) Adans, fam. 2. p. 423. D. C. syst. 2. p. 648. prod. 1. p. 225.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle almost globose, 1-celled, 1-seeded. Seed pendulous from the top of the pod. Outer petals somewhat larger than the inner ones. Cotyledons incumbent, curved, truncate, somewhat folded together, with inflexed margins. A smooth, erect, annual herb. Radical leaves rosulate, on short stalks, pinnate-parted; lower lobes small, 2 or 3 on each side, terminal one large, oblong, or orbicular, blunt; cauline leaves sessile, oblong, entire, sagittate with acute auricles. Racemes opposite the leaves, elongated; pedicels bractless, filiform. Flowers white.

1 C. Corvìni (Desv. journ. bot. 3. p. 158.) ☉. H. Native of sandy fields and vineyards, in Arragon, south of France, Italy, Hungary, and Tauria. Bùnias cochlearioìdes, Murr. nov. comm. gœtt. 1. 1777. p. 42. t. 3. Waldst. et. Kit. hung. 2. p. 111. t. 107. Myàgrum irregulàre, Asso. Myàgrum rugòsum, Vill. Myàgrum perfoliàtum, β, Lam. Crámbe Corvìni, All. Myàgrum erucæfòlium, Vill. dauph. Rapístrum bursæfòlium, Berg. phyt. Cochleària auriculàta, Lam. dict. Crámbe amplexicaúlis, Russel. Myàgrum bursæfòlium, Thuil. Crámbe bursæfòlia, Lher. Laèlia cochlearioìdes, Pers. ench. 2. p. 185.

Var. β, *Myàgrum iberoìdes* (Brot. phyt. no. 43. p. 95. t. 42.) Native of Portugal.

Corvin's Calepina. Fl. Apr. June. Clt. 1816. Pl. 1 foot.

Cult. A rather curious annual plant. The seeds only require to be sown in the open border. A dry, sandy soil will suit it best.

Tribe XVI.

RAPHA'NEÆ (plants agreeing with *Ráphanus* in many important characters,) or ORTHOPLO'CEÆ (See Sub-Order III.) LOMENTA'CEÆ (*lomentum*, a loment; shape of pods.) D. C. syst. 2. p. 649. prod. 1. p. 225. Silicle or silique dividing across into one or few-seeded joints or cells (f. 47. *k. m.*). Seeds globose. Cotyledons folded together (f. 47. *j. f.*).

XCVIII. CRA'MBE (from κραμβη, the Greek name of *Sea-kale*, or *Sea-cabbage*, which is derived from κραμβος, *dry;* because the plants usually grow in sand.) Tourn. inst. 211. t. 100. —Gært. fruct. 2. p. 292. t. 142. Lin. gen. no. 825. D. C. syst. 2. p. 650. prod. 1. p. 225.

Lin. syst. *Tetradynàmia, Siliculòsa*. Silicle 2-jointed. Lower joint abortive, upper one globose, 1-seeded (f. 47. *h.*). Cotyledons thick, sòmewhat foliaceous, profoundly emarginate. Herbs or subshrubs. Leaves sometimes thick, sometimes membranous, hairy or smooth; cauline ones alternate, stalked, pinnately-toothed, cut, pinnatifid or lyrate. Racemes elongated, many-flowered, disposed into lax panicles; pedicels filiform, erect, bractless. Flowers white, smelling like honey.

Sect. I. Sarcocra'mbe (from σαρξ σαρκος, *sarx sarcos*, flesh; and κραμβη; because the leaves of the plants contained in this section are fleshy.) D. C. syst. 2. p. 651. prod. 1. p. 225. Lower joint of silicle depressed, thick; stigma sessile. Larger filaments furnished each at the top with a tooth. Roots perennial, with many stems rising from the neck. Leaves large, usually fleshy. The young shoots of all are eatable when blanched.

1 C. marítima (Lin. spec. 937.) Longer filaments forked; pods blunt; leaves roundish, sinuate, waved, toothed, and are, as well as the stem, very smooth. ♃. H. Native in the sand on the sea-shore, from Sweden to France, and along the Mediterranean sea on the European side; also in Tauria, along the Euxine sea. Plentiful in Britain, in the sand by the sea-side. Oed. fl. dan. t. 316. Smith, engl. bot. t. 924.

Sea-kale (Eng.) *Chou marin* (Fr.) *Meerkohl* (Germ.) *Crambio* (Ital.). The country people in the west of England have been, from time immemorial, in the practice of watching when the shoots and leaf-stalks begin to push up the sand and gravel in March and April, when they cut them off underground, as is done in gathering *Asparagus*, and boil them as greens. About the middle of the last century the plant was first introduced into gardens, grown on deep sandy soil, and blanched either by sand, ashes, litter, or by covering with flower-pots, earthen pots made on purpose, or any opaque cover. It is now almost as universal in good gardens as *Asparagus*, and, like it, is forced, either by taking up the roots and planting them on a hot-bed, or in a border of a forcing-house, or by covering or surrounding them with litter, in the open garden. Before covering a bed with warm litter, each plant, or stool of plants, is covered with an earthenware blanching pot, or a wicker case, to keep off the dung from the young shoots, and to ensure their being blanched. No plant is so easily forced, and, unlike *Asparagus*, it yields produce the first spring after raising from seed. The taste is very like that of *Cauliflower*. The whole plant is smooth, of a beautiful glaucous hue, covered with a very fine meal. However, it varies much; for sometimes it is to be seen almost with green-leaves. The radical leaves are large, more or less sinuated or indented, containing in the axil a bud or rudiment of next year's stem. The flowers are in ample panicles; they are small, of a pure white, and smell strongly of honey.

The precise period of its introduction to the garden is unknown. Parkinson and Bryant state, that the radical leaves are cut by the inhabitants where the plant grows wild, and boiled as cabbage; and W. Jones, of Chelsea, assured the late W. Curtis, that he saw bundles of it, in a cultivated state, exposed for sale in Chichester market, in 1753. J. Maher observes, (Hort. trans. vol. 1.) that "the *Crámbe marítima* was known, and sent from this kingdom to the continent, more than two hundred years ago, by L'Obel; but Miller, in 1731, was the first who wrote upon it professionally. About the year 1767, it was cultivated by Lettsom, at Grove-hill, and by him brought into general notice in the neighbourhood of London. In the Gardener's Dictionary, published 1774, by James Gordon, at Fountain Bridge, near Edinburgh, directions are given for the cultivation of this vegetable, and for blanching it by covering the beds, four inches deep, with sand or gravel. Professor Martyn has printed some valuable instructions for its cultivation, from the MSS. of the Rev. M. Laurent; and the late W. Curtis, by a pamphlet on the culture, has done more to recommend it, and diffuse the knowledge of it, than any of his predecessors. *Sea-kale* is now a common vegetable in Covent Garden market, and, Mr. Neill observes, has begun to appear on the green-stalls of Edinburgh; but in France it is almost unknown. Bastien (Manuel du Jardinier, 1807,) describes the *Chou marin d'Angleterre*; but he appears to have tried to use the broad green leaves, instead of the blanched shoots. Disgusted with his preparation, he denies the merit of *Sea-kale*, and resigns the plant, with a sneer, to colder climates."

The young spring shoots, and the stalks of the unfolded leaves, blanched by rising through the ground in a wild state, or by earthing up in gardens, are the parts used; and when boiled and dressed like *Asparagus*, are not inferior to that vegetable. They form also an excellent ingredient in soups. Sometimes the ribs of the large leaves are peeled and dressed as *Asparagus*, after the plant has ceased to send up young shoots. By forcing, *Sea-kale* may be had in perfection from November till May, a period including all the dead months in the year. It is remarked by Nicol, that vegetables seldom improve by forcing, but that *Sea-kale* forms an exception; the forced shoots produced at midwinter being more crisp and delicate in flavour than those procured in the natural way, in April and May. Sir George Mackenzie observes, (Caled. hort. mem. 1. p. 313.) that *Sea-kale* cannot easily be overdone in cooking; and that, after being well boiled, it should be thoroughly drained, and then suffered to remain a few minutes before the fire, that a further portion of moisture may be exhaled."

Sea-kale may be cultivated by rearing the plants from seed, on a seed-bed, and when a year old transplanting them into beds, at the distance of eighteen inches each way. But in setting young plants, place them in patches of three plants each, taking care, in removing them from the seed-bed, not to injure the tap-roots.

Sea-kale plants of a proper age may be had of any nurseryman, but in well-regulated gardens, a part should be annually

sown, so as to have a supply always at hand. However, where circumstances will admit, it would be advisable to sow the seed in the beds where they are to remain to come to perfection. This is attended with much less trouble, and if the beds have been properly prepared, the plants will become stronger than those which have been transplanted. *Sea-kale* is also propagated by some eminent gardeners in the vicinity of London, by cutting the roots of the old plants into pieces about an inch long, and planting them in drills like potatoes. By this means the buds will spring and find their way to the surface with greater certainty than if planted by the dibble; by which latter process many of them run a chance of being placed with their end uppermost, and consequently be unproductive of shoots.

In light sandy garden-soil the *Sea-kale* comes to perfection with little care; but in strong clayey soils it is often apt to rot in winter. In preparing ground for *Sea-kale*, if the ground be naturally strong, it should be trenched to a depth of 3 feet, if the ground will admit of that depth, and well manured. Divide the ground into 4 feet beds, with alleys 18 inches wide; throw out the mould of the alleys to the depth of 10 or 12 inches, which mould being laid on the beds will raise them from 15 to 18 inches above the bottom of the alleys, which will render the beds dry. If the ground be particularly stiff, lay on a quantity of fine sharp sand and leaf mould, which, if properly mixed in the process of trenching, will render the beds sufficiently light for the cultivation of this excellent vegetable, for the success depends upon the lightness of the mould and dryness of the bottom. About the middle of April, if the beds be prepared as above, proceed to draw two drills in each bed, about 2 inches deep, in which the seeds must be sown. Sow moderately thick, so as to secure a crop, which afterwards should be thinned out to 12 inches apart. or sow in patches 18 inches apart. The turnip-fly and the wire-worm are great enemies to this as well as to all cruciferous plants. The best remedy for the latter is to have them picked out of the ground by the hand; the former may be prevented from doing much injury by a circle of quick-lime strewed round the plants. If the months of June and July prove dry, water the whole beds plentifully; and in the following November as soon as the leaves are decayed, clear them away and cover the beds an inch thick with light rich earth and sand, that has lain in a heap and been turned over at least three times the preceding summer. Upon this dressing of sandy loam, throw about 6 inches of light stable litter, which finishes every thing to be done the first year. In the spring of the second year, when the plants begin to grow, rake off the stable litter, digging a little of the most rotten into the alleys, and add another inch in depth of fresh loam and sand. Abstain from cutting this year, though some of the plants will probably rise very strong, treating the beds the succeeding winter exactly as before. The third season, a little before the plants begin to stir, rake off the winter covering, laying on now an inch in depth of pure sand or gravel. Then cover each parcel or plant with one of the blanching-pots, or large flower-pots with the hole corked up, pressing it very firmly into the ground, so as to exclude all light and air, for the colour and flavour is greatly injured by being exposed to either." But the most convenient method for blanching *Sea-kale* which is not forced, is to cover the beds in autumn with leaves raked up from the woods or pleasure-ground, covering each bed in thickness according to the strength and age of the plants, giving the greater covering to the oldest and strongest roots. The covering may be from 5 to 15 inches deep, when first laid on, and over that place a slight covering of light littery dung to prevent the leaves from blowing about; this covering is to remain on until the crop be all cut, when it may be taken away, and the beds dug over, or when, from particular circumstances, this has not been attended to in autumn. At the time the buds begin to appear, fork the beds regularly over, and cover the plants from 12 to 15 inches with saw-dust or rotten tan, when it can be conveniently procured; if neither can be had, break the mould on the surface of the beds as fine as possible and mould up the plants with it.

As the heads become ready for use they will raise the covering, by which means they will be easily perceived without removing any more of the covering than the part where those heads are that are intended to be cut. Those beds which have had the thickest covering in autumn come first into use, and the other in rotation, so that the last cutting is from what was sown the spring before. Although cutting from one year old plants is generally disapproved of, Barton (Caled. hort. mem.) defends the practice from his experience of its not proving injurious; and because thereby the *Sea-kale* season is prolonged, as the one year old plants come into use much later in spring than the old established roots.

When the young shoots are about 3 or 4 inches high, remove the leaves, or whatever has been used in blanching, carefully, and cut them off; but so as not to injure the remaining buds, which are springing from the same root. A succession of gatherings may be continued for 5 or 6 weeks, after which period the plants should be uncovered and their leaves suffered to grow, that they may acquire and retain a sufficient quantity of nutriment to the roots for next year's buds. The flowers, when the seeds are not wanted, ought to be nipped off with the finger and thumb as long as they appear, as they tend considerably to weaken the plants.

Forcing Sea-kale. "No vegetable is more easily or more cheaply forced than *Sea-kale*, whether the operation be performed in beds or drills in the open air, or in hot-bed frames or flued pits." Abercrombie, Nicol, and Maher recommend forcing in beds "in the open air." "Seven weeks," the former observes "before the time at which you wish to cut shoots for the table, begin to prepare the plants for forcing, and to ferment a sufficient quantity of stable dung. Having trimmed the leaves from the plants, carefully point the surface of the ground, and over the top of the roots spread fresh light earth, mixed with light sand or coal-ashes 2 or 3 inches in depth, this is the best remedy against worms. Salt also destroys worms and will not injure the *Sea-kale*. When the dung is well prepared, which will be in about three weeks, proceed to forcing. If you mix tree-leaves with the dung, begin to ferment them a week or a fortnight sooner. Cover each of the plants either with a regular blanching-pot, or with a garden-pot of the largest size, taking care to stop up the hole. Then lay a portion of prepared dung alone, or mixed with tree-leaves about and over each pot, pressing it down firm, extending it 8 or 10 inches all round, and raising the bank six or eight inches above the pot. It will be necessary to examine the plants frequently, and to measure the heat within the covers now and then, lest by some inadvertency the quantity of litter should not have been well-apportioned or rightly prepared; if the heat be under 50° there is not enough to excite the plants; and if above 60° it is too fiery, and may injure them, for it is better to begin time enough and force slowly rather than too quickly." The litter round the pots should be renewed at least once in eight weeks, but oftener if the weather is rigorous. When the stools will produce no more shoots, remove the litter and the covers, and dress the ground, that the plants may be suffered to grow and return strength to the root for the next year's shoots. Nicol says, he knows of a row of *Sea-kale* having been forced in the above way every season for seven years, in which the plants were at the end of that period as healthy and vigorous as others in the same quarter that were forced only every second year.

Barton (Caled. hort. mem.) forces *Sea-kale* on dung beds,

under frames exactly in the same manner usually adopted for *Asparagus*. For a common melon-frame will contain as many heads as are capable of being produced in two drills, of twenty yards each, by covering with dung. He finds three frames of two lights each, quite sufficient for a large family; the first prepared about the beginning of November, and the second about the last week in December; and by the time the second frame is exhausted, *Sea-kale* will be ready for use in the open ground.

Gibbs (Caled. hort. mem. 1. p. 388.) also forces in frames, blanching by keeping the beds covered with mats. As the plants are no longer of use after being forced in this and the preceding method, a succession is kept up by annual sowings, and the plants are allowed to attain three years growth before taken up for forcing. Economy and certainty are advantages attending these last methods.

Balwin (Hort. trans. 4. p. 63.) forces *Sea-kale* where it stands in the following manner. "On each side of a three foot bed, in which the *Sea-kale* has been planted, trenches are formed two feet deep, and eighteen inches wide at bottom; the side of the trench next the bed is perpendicular, the other side is sloped so as to make the top of the trench at the surface level, two feet and a half wide; this trench is filled with linings of hot dung, on the inner edges of which garden-lights are placed, and the glass kept covered with mats until the kale is fit to cut, and a covering of broad canvass or mats might be substituted for the glass lights."

Melross (Caled. mem. 4. p. 164.) forces *Sea-kale* in a vinery. He "plants along the back of the flue where no vine-roots are, places covers on the plants, and in two weeks, when the heat for forcing vines is kept up, he has as fine *Sea-kale* as could be desired. When a dish is cut, he lifts the roots and supplies their places by others from the open ground."

Gathering. "Remove a part of the earth, leaves or pots, or whatever is employed in blanching, cut off the heads or shoots, and slip off the stalks of the leaves," (Loud. ency. gard. p. 732.)

Produce. From four or six heads, according to the size, held together like *Asparagus*, make a dish; and Maher says, a blanching pot which contains three plants will afford a dish twice in a season. Hence from sixty to a hundred pots will suffice for forcing *Sea-kale* for a large family (Loud. l. c.)

To save seed. Let a stool, which has not been cut, run in spring; and seed will be produced in the autumn.

Common *Sea*-kale. Fl. May, June. Britain. Pl. 3 feet.

2 C. pinnatífida (R. Br. in hort. kew. ed. 2. vol. 4. p. 72.) longer filaments forked; pods awnless; leaves profoundly pinnatifid; lobes oblong, acute, toothed, and are as well as the stem, smooth. ♃. H. Native of Hungary in fields about Buda, Tauria, and in deserts adjacent to the north of Caucasus. C. Suécica, Mill. dict. ed. 7. no. 2. C. orientàlis, Jacq. icon. rar. 1. t. 128. C. laciniàta, Desf. hort. par. An intermediate species between *C. marítima* and *C. orientàlis*.

Pinnatifid-leaved Sea-kale. Fl. April, Ju. Clt. 1759. Pl. 2 ft.

3 C. grandiflòra (D. C. syst. 2. p. 652.) longer filaments forked; pods awnless; leaves pinnate-parted; lobes oblong, acutely and deeply toothed, intermixed with smaller ones along the raches, and are as well as the stem, smooth. ♃. H. Native of the island of Tama at the mouth of the Kuban, and on the shores of the Euxine Sea. This species is intermediate between *C. pinnatífida* and *C. áspera*. It is only perhaps a variety of *C. marítima*, but the flowers are 2 or 3 times larger.

Great-flowered Sea-kale. Fl. May, June. Pl. 3 feet.

4 C. orientàlis (Lin. spec. 937.) longer filaments forked; pods awnless, smooth; leaves pinnatifid, toothed, scabrous; stem smooth. ♃. H. Native of the Levant.

Oriental Sea-kale. Fl. June, July. Clt. 1752. Pl. 2 foot.

5 C. Tatárica (Jacq. misc. 2. p. 274. icon. rar. 1. t. 129. exclusive of synonym of Clusius,) longer filaments forked; pods awnless; radical leaves decompound; leaflets cut, toothed, younger leaves rough, adult ones smooth as well as the stem. ♃. H. Root fusiform, 2 or 3 feet long.

Var. α, Hungárica (D. C. syst. 2. p. 653.) lobes of cauline leaves oblong-linear, almost entire and somewhat pectinated. ♃. H. Native of gravelly places and fertile fields in Hungary about Agria and elsewhere; in Moravia about Aussitz; in Transylvania in calcareous meadows and on sandy mountains. C. Tatárica, Jacq. misc. 2. p. 274. Willd. spec. 3. p. 419. This plant is called in Hungary *Tatar-kenyer* or *Tartarian-bread*, and its root, stripped of the bark and sliced, is eaten with oil, vinegar, and salt. The boiled root is sweet, and eaten by children. The young shoots are boiled and eaten like those of common *Sea-kale*, and have an excellent taste, but are stringy, which they would not be if well cultivated, which the plant appears to deserve. Hares are extremely fond of the root and stems.

Var. β, Taúrica (D. C. syst. 2. p. 653.) lobes of leaves sinuately-lobed. ♃. H. C. orientàlis, Reich. syst. 3. p. 290. Falk. itin. p. 219. no. 791. t. 14. C. Tatárica, Bieb. fl. taur. 2. p. 90. Native of Tauria in fields, and adjacent to the northern regions of Caucasus at the Tanais, and from Borysthene to the Rhymnus. Roots fusiform, 2 or 4 feet long.

Tartarian Sea-kale. Fl. June, July, in gardens; April, May, in its native countries. Clt. 1789. Pl. 2 to 3 feet.

6 C. á'spera (Bieb. fl. taur. 2. p. 90.) longer filaments forked; pods awnless, wrinkled; leaves pinnate-parted, with oblong-linear, toothed lobes, and are scabrous as well as the stem. ♃. H. Native of fields in Tauria at the lower Wolga, and near Sarepta. The whole plant is usually rough from stiff erect hairs. Deless. icon. sel. 2. t. 91.

Rough Sea-kale. Fl. May, June. Clt. 1820. Pl. 1 foot.

7 C. ju'ncea (Bieb. suppl. ined. D. C. syst. 2. p. 654.) longer filaments forked; pods awnless, smooth; leaves lyrate, with toothed lobes, terminal lobe large; leaf stalked and stem hispid from reflexed hairs. ♃. H. Native of Iberia about Tiflis. Pods small, globose, smooth, and seated upon slender pedicels.

Rushy Sea-kale. Fl. May, June. Clt. 1820. Pl. 2 feet.

8 C. cordifòlia (Stev. in mem. soc. nat. mosc. 3. p. 267.) longer stamens forked; pods almost awnless; leaves stalked, toothed, lower ones cordate, upper ones ovate, and are as well as the stems almost glabrous. ♃. H. Native of North Caucasus in deserts, and in exposed places about the towns of Mosdock and Georgisock. C. cordàta, Willd. enum. suppl. 43. Panicles of flowers leafless, smooth, much branched. Flowers like those of *C. orientàlis*. The root of this plant tastes like *Horse-radish*. Lower leaves very large and hispid.

Cordate-leaved Sea-kale. Fl. June. Clt. 1800. Pl. 6 feet.

Sect. II. Leptocra'mbe (from λεπτος, *leptos*, slender, and κραμβη, *krambe*, Sea-kale; because of the plants contained in this section being slender.) D. C. syst. 2. p. 655. prod. 1. p. 226. Lower joint of silicle cylindrical, elongated. Stigma sessile. Filaments either toothed or toothless. Roots annual or biennial. Stem solitary.

9 C. Hispa'nica (Lin. spec. 937.) longer filaments furnished with a tooth; pods awnless; leaves lyrate, scabrous, with the terminal lobe cordate and orbicular. ⊙. H. Native of Spain in Valentia on the sea-shore, also in the north of Portugal. Sab. hort. rom. 4. t. 2. Lam. ill. t. 553. Gært. fruct. 2. p. 292. t. 142. f. 4. Schkuhr. handb. 2. no. 1924. t. 189. Myàgrum sphærocárpum, Jacq. obs. 2. p. 20. t. 41. Rapístrum Hispánicum, Medik. in Ust. new. ann. 2. p. 37. Rapístrum scàbrum, Mœnch. meth. 211. Pods exactly globose. Herb hispid.

Spanish Sea-kale. Fl. June, July Clt. 1683. Pl. 1½ foot.

10 C. glabra'ta (D. C. prod. 1. p. 226.) longer filaments furnished with a tooth; pods awnless; leaves cordate-roundish, and are as well as the stem smooth. ⊙? H. Native of Spain near St. Philip. C. cordifòlia, Dufour. in ann. gen. sc. phys. 7. p. 308. but not of Steven. Perhaps sufficiently distinct from *C. Hispánica.*

Smooth Sea-kale. Fl. June, July. Clt. 1827. Pl. 1½ foot.

11 C. renifo'rmis (Desf. atl. 2. p. 78. t. 151.) longer filaments furnished with a tooth; pods awnless; leaves lyrate, scabrous, terminal lobe kidney-shaped. ♂. H. Native of the north of Africa in fissures of rocks, near Tlemsen. Pods fleshy. Very like *C. Hispánica.* Herb hispid.

Reniform-lobed Sea-kale. Fl. Ju. Jul. Clt. 1820. Pl. 2 to 3 ft.

12 C. filifo'rmis (Jacq. coll. suppl. 120. icon. rar. 3. t. 504.) longer filaments almost toothless; pods awnless; leaves pinnately-lyrate, hairy, terminal lobe ovate. ♂. H. Native of Patagonia at Champion River. Rapístrum filifórme, Mœnch. suppl. 69. Ovary slender, 2-jointed, lower joint terete, longest.

Filiform Sea-kale. Fl. July, Aug. Clt. 1796. Pl. 1 to 2 feet.

Sect. III. Dendrocra'mbe (from δενδρον, *dendron*, a tree, and κραμβη, *crambe*, Sea-kale; because of the plants being shrubby.) D. C. syst. 2. p. 656. prod. 1. p. 226. Lower joint of silicle short, filiform. Stigma seated upon a short style. Stems shrubby.

13 C. fruticòsa (Lin. fil. suppl. 299.) longer filaments toothed on one side; pods mucronate with the style; leaves lyrately-pinnatifid, toothed, hoary; stem shrubby. ♄. G. Native of Madeira on the highest rocks near Pico de Ranxo. D. C. syst. 2. p. 656. A small stiff hoary shrub.

Shrubby Sea-kale. Fl. May, Nov. Clt. 1777. Sh. 2 feet.

14 C. strigòsa (Lher. stirp. 1. p. 151. t. 72.) filaments toothless; pods mucronate; leaves ovate, toothed, unequal and somewhat auricled at the base, and are hispid, as well as shrubby stem. ♄. G. Native of Canary Islands; in Teneriffe in humid places. Myàgrum arboréscens, Jacq. coll. 1. p. 39. icon. rar. t. 120. C. fruticòsa, Murr. syst. veg. 498. exclusive of synonym of Lin. fil. C scàbra, Lam. dict. 2. p. 163.

Var. β, *glabràta* (D. C. syst. 2. p. 657.) leaves almost smooth, with a few scaly dots.

Strigose Sea-kale. Fl. May, June. Clt. 1779. Sh. 1½ foot.

Cult. The hardy perennial species may be either increased by dividing at the roots or by seeds, but the latter mode is preferable; they will grow in any kind of soil, but those species used for culinary purposes should be grown in a rich light soil. The annual and biennial kinds only require to be sown in the open ground. The shrubby green-house kinds may either be increased by seeds or by cuttings, which should be planted under a hand-glass. A mixture of sand, loam, and peat, suits these last well.

XCIX. RAPI'STRUM (*rapa*, the rape; resemblance.) Boerh. ludg. 406. D. C. syst. 2. p. 430. prod. 1. p. 227.

Lin. syst. *Tetradynàmia*, *Siliquòsa*. Silicle 2-jointed; lower joint ovate, rough, with a solitary seed in each cell, the seed in the upper joint erect, that in the lower one pendulous. Cotyledons oblong, folded together. Annual or perennial, branched, pubescent or villous herbs. Leaves not fleshy, lower ones stalked, pinnatifid or somewhat lyrate; upper ones oblong toothed. Racemes elongated, somewhat panicled; pedicels filiform, strictly erect. Flowers yellow.

1 R. pere'nne (Berg. phyt. icon. Desv. journ. bot. 3. p. 160.) pods smooth, upper joint ovate, longer than the style; leaves pinnatifid; lobes deeply-toothed, acute. ♃. H. Native of fields in the east of France, Switzerland, Piedmont, Germany, Austria, and Transylvania. Myàgrum perénne, Lin. spec. 893. Jacq. aust. t. 414. Rapístrum diffùsum, Crantz. cruc. p. 105. Myàgrum biarticulàtum, Crantz. aust. p. 6. Myàgrum perénne var. α, Lam. fl. fr. 2. p. 482. Schránckia divaricàta, Mœnch. suppl. 86. Cakìle perénnis, Lher. diss. cak. ined. p. 6. Bùnias perénnis, Smith, prod. fl. græc. 2. p. 2. Stem diffusely branched, somewhat hispid at the base. Flowers small.

Perennial Rapistrum. Fl. July. Clt. 1789. Pl. 1 to 1½ foot.

2 R. rugo'sum (Berg. phyt. 3. p. 171. icone. All. ped. no. 940. t. 78.) pods pubescent; upper joint globose, rough, shorter than the style; leaves blunt, toothed, radical ones somewhat lyrate. ⊙. H. Native throughout middle and south Europe in cultivated fields and sandy places. Myàgrum rugòsum, Lin. spec. 893. Myàgrum perénne, Scop. carn. ed. 2. no. 795. Schránckia rugòsa, Medik. in Ust. new. ann. 2. p. 39. Cakìle rugòsa, Lher. diss. cak. ined. p. 7. Flowers a little smaller than those of *R. perénne*, of a deep yellow.

Var. β, *stylòsum* (D. C. syst. 2. p. 432.) leaves almost all radical, cauline ones very few and very small; pods villose, with a long style, and with the lower joint often abortive. Cakìle rugòsa, var. *stylòsa.* D. C. fl. fr. suppl. p. 598. Native of Occitania and the south of Provence.

Var. γ, *venòsum* (D. C. syst. l. c.) younger pods villose, adult ones smooth, upper joint much wrinkled and furrowed, lower one very rarely abortive. Myàgrum venòsum, Pers. ench. 2. p. 183. Native about Tolosa and Genoa.

Wrinkled-podded Rapistrum. Fl. April, July. Pl. 1 foot.

† *Species not sufficiently known.*

3 R. orienta'le (D. C. syst. 2. p. 433.) pods furrowed, smooth; leaves oblong, toothed, sinuate. ⊙. H. Native of the Levant. In Melos in corn-fields, also in Crete. Myàgrum orientàle, Lin. spec. 893. Schránckia sulcàta, Mœnch. suppl. 87. Cakìle orientàlis, Lher. diss. cak. ined. p. 7. Bùnias raphanifòlia, Smith, fl. græc. t. 612. Leaves scabrous.

Oriental Rapistrum. Fl. July. Clt. 1795. Pl. 1 foot.

4 R. clava'tum (D. C. syst. 2. p. 433.) pods smooth, upper joint globose, rough, bearing the style, lower one smooth, somewhat cylindrical, longer than the pedicel. ⊙. H. Native of Syria and near Tripoli. Cakìle clavàta, Spreng. syst. 2. p. 852. The whole plant smooth. Lower leaves hastate.

Clubbed-podded Rapistrum. Fl. June, July. Pl. 1 foot.

5 R. costa'tum (D. C. syst. 2. p. 434.) pods smooth, upper joint ovate, ribbed, ending in a conical acumen, lower one smooth, obconical, somewhat shorter than the pedicel. ♃? ⊙? H. Native of the Levant at Tyra. Myàgrum rugòsum β, Bieb. fl. taur. 86.? Myàgrum perénne, Stev. in litt. Perhaps *R. orientàle.* Style conical, thick, short

Ribbed-podded Rapistrum. Fl. June, July. Pl. 1 foot.

Cult. These plants are not worth cultivating except in botanical gardens. The perennial species may be either increased by dividing the plants at the root or by seeds. The seeds of the annual kinds only require to be sown in the open ground.

C. DIDE'SMUS (from δις, *dis*, twice, and δεσμος, *desmos*, a chain, because of the pod being of two joints, like two links of a chain). Desv. journ. bot. 3. p. 160. t. 25. f. 11. D. C. syst. 2. p. 657. prod. 1. p. 227.

Lin. syst. *Tetradynàmia*, *Siliquòsa*. Silicle 2-jointed, both joints 1 or 2-seeded, lower one truncate at the end, upper one bearing the style. Seeds pendulous in the cells. Smooth, annual, erect, branched herbs, some of them resembling *Cakìle* and others *Ráphanus.* Lower leaves stalked, pinnatifid, or lyrate. Racemes elongated; pedicels bractless, filiform, or thickening after flowering. Flower white or yellow?

1 D. Ægy'ptius (Desv. l. c.) lower leaves elliptical or pinnatifidly-lyrate; upper ones oblong, somewhat toothed. ⊙. H. Native of Egypt and the island of Cyprus. Deless. icon. sel. 2. t. 92. Myàgrum Ægýptium, Lin. spec. 895. Cakìle Ægýp-

tia, Spreng. syst. 2. p. 852. Habit of *Cakìle marítima*. Flowers yellow or perhaps white.

Var. β, oblongifòlius (D. C. syst. 2. p. 658.) lower leaves oblong, grossly serrated, not pinnatifidly-lyrate. Native in the fields of Astypalæa in the Morea.

Egyptian Didesmus. Fl. June, July. Clt. 1827. Pl. 1 ft.

2 D. tenuifo'lius (D. C. syst. 2. p. 659.) leaves pinnate-parted; lobes linear, distant; upper leaves linear; stem smooth. ⊙. H. Native of the Grecian Archipelago, especially in the islands of Nio and Cyprus. Cakìle striàta, Lher. cak. diss. ined. p. 6. Bùnias Tournefórtii, Sibth. Bùnias tenuifòlia, Smith, prodr. fl. græc. 2. p. 3. Flowers white. Habit of *Cakìle marítima*. Tour. voy. 1. p. 254. icon. Cells of pod 1-seeded.

Slender-leaved Didesmus. Pl. 1 foot.

3 D. bipinna'tus (D. C. syst. 2. p. 659.) leaves pinnate-parted; lobes linear, toothed, or cut; stem rough from reflexed hairs. ⊙. H. Native of Mauritania in the mountains of Cafsa. Sinàpis bipinnàta, Desf. atl. 2. p. 97. Cakìle bipinnàta, Spreng. syst. 2. p. 852. Petals whitish, obovate, retuse, somewhat emarginate. Pods smooth, with 1-seeded cells.

Bipinnate-leaved Didesmus. Fl. Ju. July. Clt. 1818. Pl. ½ ft.

† *A species not sufficiently known.*

4 D. pinna'tus (D. C. syst. 2. p. 659.). Myàgrum pinnàtum, Russ. in Schrad. journ. 1. p. 426. Native about Aleppo. Pods striated, 2-jointed. Leaves pinnate, smooth; segments linear, cut. Perhaps the same as *D. tenuifòlia*. Flowers white.

Pinnate-leaved Didesmus. Fl. June, July. Pl. ¾ foot.

Cult. These plants are not worth cultivating, except in botanical gardens. The seeds only require to be sown in the open ground.

CI. ENARTHROCA'RPUS (from *εννεα, ennea*, nine, *αρθρον, arthron*, a joint, and *καρπος, karpos*, a fruit, in allusion to the pod having 9 or 10 seeds in the lower joint). Lab. syr. dec. 5. p. 4. t. 2. D. C. syst. 2. p. 660. prod. 1. p. 228.

Lin. syst. *Tetradynàmia, Siliquòsa*. Silique 2-jointed, lower joint obconical, short, 1 to 3-seeded, upper joint long, 9 or 10-seeded, loculate in the inside (f. 47, *k*.) Erect, branched, roughish herbs, having the appearance of *Ráphanus*. Lower leaves stalked, lyrate, upper ones sessile, grossly toothed. Racemes elongated; pedicels filiform, erect, becoming thicker after flowering; all or only the lower ones bracteate. Flowers yellow, veined, or purplish.

1 E. arcua'tus (Lab. syr. dec. 5. p. 4. t. 2.) pods terete, torulose, scabrous; lower pedicels bracteate. ⊙. H. Native of Crete and Mount Lebanon. Sepals oblong-linear, with hispid margins. Flowers purplish. Lower point of pod 1-2-seeded.

Arched-podded Enarthrocarpus. Fl. Ju. Jul. Clt. 1820. Pl. 1 ft.

2 E. lyra'tus (D. C. syst. 2. p. 661.) pods compressed, knotted, striated longitudinally; pedicels almost all bracteate. ⊙. H. Native of sandy deserts and among barley-fields about Alexandria, also in the Nilotic islands. Ráphanus lyràtus, Forsk. fl. ægyp. arab. p. 119. Ráphanus recurvàtus, Pers. ench. 2. p. 209. Delile, fl. ægypt. p. 105. t. 36. f. 1. Very like *E. arcuàtus*, but differs in the flowers being yellow, with purple veins, not purplish.

Lyrate-leaved Enarthrocarpus. Fl. Ju. Jul. Clt. 1828. Pl. 1 ft.

3 E. pteroca'rpus (D. C. syst. 2. p. 661.) pods compressed, edged with a wing, ending in a long point; pedicels almost all bracteate. ⊙. H. Native of Egypt. Deless. icon. sel. 2. t. 93. Ráphanus pterocárpus, Pers. ench. 2. p. 209. Flowers yellow with purple veins? Lower joint of pod 1-seeded.

Winged-podded Enarthrocarpus. Fl. June, July. Clt. 1823. Pl. ¾ foot.

Cult. These plants are not worth cultivating, except in botanic gardens. They only require to be sown in the open ground, and treated as other hardy annuals.

CII. RA'PHANUS (*ραφανις* in Greek is derived from *ρα, ra*, quickly, and *φαινομαι, phainomai*, to appear, because of the rapid germination of the seeds). Lin. gen. no. 1098. D. C. syst. 2. p. 662. prod. 1. p. 228.

Lin. syst. *Tetradynàmia, Siliquòsa*. Silique transversely many-celled, or breaking off into several joints (f. 47. *m*.). Seeds globose, pendulous, in one row. Cotyledons thickish, folded together. Erect, branched, smooth, or somewhat hispid herbs, with round divaricating stems. Roots perpendicular, simple, more or less fleshy, with an acrid taste, when young furnished with a 2-valved *Coleorhiza* at the tip. Lower leaves stalked, lyrate. Racemes opposite the leaves and terminal, elongated; pedicels filiform, bractless. Flowers yellow, white, or purplish, sometimes veined. The English name *Radish* is derived from *radix*, a root.

Sect. I. Ra'phanus (see genus). D. C. syst. 2. p. 663. prod. 1. p. 228. Silique spongy, 2-celled.

1 R. sati'vus (Lin. spec. 935.) pods terete, torose, pointed, scarcely longer than the pedicel. ⊙. H. Native of China, Japan and Western Asia by way-sides, Lam. ill. 566. Flowers at first red-violet, when old whitish. There are numerous varieties of this plant cultivated in gardens.

Cultivated Radish. Fl. May, June. Clt. 1548. Pl. 3 feet.

In Italy the Radish is called *Ramolaccio* or *Ravanello*, in France they are called *Rabiole, Raviole, Rave*, or *Radis*.

* A. radi'cula (D. C. syst. 2. p. 663.) root more or less fleshy, white, rose, or red-coloured. R. radícula, Pers. ench. 2. p. 208. The varieties of this plant are commonly called *Summer*, or *Turnip-radishes*.

Var. a. rotúnda (D. C. syst. 1. c.) root somewhat globose. R. rotúndus, Mill. dict. no. 2. This plant varies much in the color of its root. We shall now add the different varieties of the *Turnip-radish* from Hort. trans. vol. 3. p. 441 to 446.

1 *The early white Turnip-radish* of the Dutch, *Radis blanc hâtif* of the French. The flesh is clear and white. This radish from its superior merit ought to be introduced into every garden.

2 *The small early white Turnip-radish* or *Radis blanc petit hâtif* of the French. The root of this is rather pear-shaped, with a slight tinge of purple on its top. It is rather earlier than the preceding kind. This is probably the Ráphanus rotúndus of Mill. dict. no. 2.

3 *The pink, rose-coloured, scarlet*, and *crimson Turnip-radishes* are all one sort. *Radis rouge* or *Radis rose rond* of the French. This variety was introduced into England from France about 1802. The root, externally, is a fine deep scarlet; and internally white. It comes in with the common white *Turnip-radish*. The flesh is mild and good.

4 *The rose-coloured Turnip-radish* or *Radis rose rond hâtif* of the French. The root is both externally and internally rose-coloured, usually pear-shaped, but sometimes it lengthens out to the appearance of a long-rooted radish. It is sometimes to be found under the name of *early scarlet Turnip-radish*.

5 *The purple Turnip-radish* or *Radis violet rond* of the French. The external colour is a fine purple. The flesh is sometimes white and sometimes stained with purple. The Dutch call it *early red Turnip-radish*. This is a very good *Radish*, but not common in our gardens. This is an autumn *Radish*.

6 *The Yellow Turnip-radish* or *Radis jaune* of the French. The root is more ovate than round, somewhat inclining to pear-shaped, of a pale brown colour and rather rough. The flesh is white and firm. It is a good *Radish*, but is rather later than the other early sorts.

Var. β, oblónga (D. C. syst. 1. c.) root long, fleshy. R. satìvus, Mill. dict. no. 1.—Weinm. phyt. t. 860. f. a. Roots varying in colour. For the under-mentioned varieties, see Hort. trans. vol.

3. p. 438 to 441. The varieties are called *Long-rooted* or *Spring Radishes.*

1 *Long white Radish, white transparent,* or *white Italian* or *Naples Radish.* This is the oldest variety mentioned in our gardens, and is called by Gerard the *Radicula sativa minor.* It is a week later of coming to perfection than those sorts commonly grown; it is very mild, and has a delicate pleasant flavour. The root is white; the flesh is transparent when young, but becomes more opaque as the root enlarges. This is the *La Rave blanche* of the Bon Jardinier.

2 *White Russian Radish.* The root is long and white. Its flesh is not transparent, and it is much hotter to the taste than the preceding variety. It remains good even when large, and is not fit for use until a week later than the other long radishes.

3 *Twisted long white Radish* or *Rave tortillée du Mans* of the French. The root grows long and does not taper much. A considerable part of it grows above ground, from whence it does not rise straight, but is bent or twisted, the exposed part of the root is tinged with green. The flesh is white and firm without heat, and insipid. The footstalks of the leaves are tinged with purple. The root is slow in coming to perfection, and may be considered a pleasant variety for use in the latter part of the year. It is not destroyed by frost.

4 *Scarlet Radish, Salmon Radish* or *Rave rose* of the French. *Scarlet transparent Radish* of the Dutch. The root is of a brilliant pink colour, and when young is full an inch above the ground. The flesh is transparent and colourless. This is the kind cultivated not only most frequently, but almost exclusively, within the last 30 years, especially for the supply of the London market. The *Short-top Scarlet* and *Early Frame Scarlet Radish* are sub-varieties of this plant. Perhaps the *Rave corail,* the *Rave petite hâtive* and the *Rave couleur de rose* or *La Rave saummonée* of the Bon Jardinier are also sub-varieties.

5 *Purple Radish,* or *Rave longue rouge* of the French, though formerly much used, has been of late driven out of our gardens by the universal preference given to the *Scarlet Radish.* It is the *Long red transparent Radish* of the Dutch, and it was formerly called the *Short-top Radish.* The seed-leaves being large has caused it to be used exclusively for small salading. The root grows high out of the ground, and is externally of a deep purple colour; the flesh is white. It is a very early sort, equally as good in flavour as the *scarlet Radish* and perhaps preferable for forcing.

6 *Red-necked Radish* or *Rave blanche à collier rouge* of the French. The upper part of the root is dark purple, and the lower part white. It is a good flavoured radish, but is more remarkable for its singularity than peculiar excellence.

Var. γ, *oleífera* (D. C. syst. 2. 664.) root slender, elongated, scarcely fleshy. R. Chinénsis, Mill. dict. no. 5. This variety is cultivated in China for an oil, which is obtained from the seeds by expression.

** B. nìger (D.C. syst. 2. p. 665.) root with compact hardish flesh, which possesses a very sharp taste. The varieties of this plant are commonly called *Winter-radishes.*

Var. α, *vulgàris* (D. C. syst. 1. c.) root oblong, with black or violet skin, and white flesh. Ráphanus nìger, Lob. icon. 202. f. 1. Merat. fl. par. 265.—Mor. oxon. 2. p. 265. no. 2. sect. 3. t. 13. f. 2.—Weinm phyt. t. 860. f. c. The following varieties are enumerated in the Hort. trans. vol. 4. p. 13.

1 *Black Spanish Radish,* or *Le Radis gros noir d'hiver,* or *Le Radis Raifort,* of the French. Root very large, externally black, and regularly pear-shaped. The flesh is hot, firm, and white.

2 *Large purple winter Radish,* or *Le Radis gros violet d'hiver* of the French, is a beautiful variety in shape and character. It much resembles the preceding variety; but the outside, when cleaned, is of a beautiful purple colour, though it looks black when first drawn out of the earth.

Var. β, *rotúndus* (D. C. syst. 2. p. 665.) root roundish, with black skin and white flesh.—Mor. oxon. 2. p. 265. no. 1. sect. 3. t. 13. f. 1.—Weinm. phyt. t. 860. f. b. It is perhaps only a variety of the common *Black Spanish Radish,* and therefore may be properly called the *Round Black Spanish Radish.*

Var. γ, *gríseus* (D. C. syst. 1. c.) root with a grey skin. For the following varieties of this plant, see Hort. trans. vol. 4. p. 12 and 13.

1 *Round brown Radish,* or *Radis gris rond* of the French. The root may be called round, though it is rather irregular in its shape. When allowed to grow large it becomes hollow; and it therefore should be used when young. The flesh is mild, rather soft, of a greenish white colour; the skin is mottled with greenish brown. This is an autumn *Radish.*

2 *Oblong brown Radish;* or *Radis gris oblong* of the French. Root pear-shaped. It does not grow particularly large, and is hardier than any of the other winter *Radishes,* and therefore fit for late use. The flesh is hot, firm, hard, and white. The skin is rough and brown, marked with white circles.

Var. δ, *álbus* (D. C. syst. 1. c.) root of a depressed roundish form; white, both externally and internally. R. orbiculàris, Mill. dict. no. 3. This is called the *White Spanish Radish, Le Radis gros blanc d'Augsbourg* of the French. The root is rather oval, and grows to a large size. The flesh is rather hot, firm, solid, and white. The skin is white tinged with green, and streaked with purple on the part which is exposed above ground.

Cult. Radishes are all of easy cultivation. They are sown at various times of the year, according to the time they are designed for use. Those intended to come in early in the spring are generally sown in October, on a warm border: the long-rooted kinds are preferred for this purpose. The *Turnip-radishes* are generally sown in spring or summer, to come in after the long-rooted kinds. These all force well on hot-beds, or dung-beds covered with mats. The winter *Radishes* should be sown in July; and those intended for winter use should be taken up in dry weather, in November, be divested of their leaves and fibres, and preserved in sand until they are wanted.

Formerly the leaves of the *Radish* were boiled and eaten, but now the roots are chiefly employed. These are eaten raw in spring, summer, autumn and winter. The young seedling leaves are often used with *Cress* and *Mustard,* as small sallad; and *Radish* seed-pods, when of plump growth, but still young and green, are used to increase the variety of vegetable pickles, and are considered a tolerable substitute for capers.

"The spindle-rooted kinds are cultivated in the largest proportion for the first crops. The small turnip-rooted sorts may be sown in spring as secondary crops, and in summer and autumn for more considerable supplies. The winter sorts have a coarser flavour than the other kinds, but being of a hardy nature, are frequently sown; they are sliced in salads, or occasionally eaten alone, with salt, vinegar, and other condiments."

"The soil should be light and mellow, well broken by digging. For sowing between the middle of October and the middle of February, let the site be a dry sheltered border, open to the full sun. From the middle of February to the end of March, any dry, open compartment will be suitable. As spring and summer advance, allot cooler and shaded situations. A scattering of the smaller growing sorts may be sown among some broad-cast crops of larger growth, such as *Spinach, Lettuce,* and *Onions.* It may be also drilled between wide rows of beans, or on ground intended to be sown with a late spring-crop."

The crops raised between the middle of October and middle of February, are usually confined to the spindle-rooted kinds. Of the early short-top-scarlet, a first small sowing may be made

at the end of October, another in November, and another in the last fortnight of December, if open temperate weather; respectively to stand over the winter; but make the principal early sowings in January, or the beginning of February. From this time sow every fortnight or ten days, in full succession crops, till the end of May, as well the white and red small turnip-rooted, as the autumn sorts. The winter sorts are sometimes raised at the beginning of summer; but the fittest season to sow them is from the end of June to the end of August; that is in July for use in autumn, and in August to provide a supply throughout the winter.

Sow each sort separately, and for a bed four feet six inches by twelve feet, two ounces of seed will be required of the spring sorts, and an ounce and a half for the summer, winter, and autumn varieties. All the kinds may be either sown broad-cast or in drills, but the latter is preferable, as allowing the roots to be drawn regularly with less waste. If sown broad-cast, it is a good method to make beds four or five feet wide, with alleys between a foot wide, the earth of which may be used to raise the beds or not, as the season may make it desirable to keep the beds dry or moist. Avoid sowing excessively thick, as it tends to make the tops run, and the roots stringy. Rake in the seed well, full half an inch deep, leaving none on the surface to attract the birds. If you trace drills, let them be for the spindle-rooted kinds, half an inch deep, and about two inches and a half asunder; for the small turnip-rooted kinds, three quarters of an inch deep, and four or five inches asunder, and for the black turnip or Spanish six or eight inches asunder, because the root grows to the size of a middle-sized turnip. As the plants advance in growth, thin them, so as to leave the spindle-rooted kinds two inches square distance, and the other sorts three, four, or five, leaving the most space to the respective sorts in free, growing weather; water pretty frequently, this swells the roots and makes them mild and crisp.

The crops sown between the end of October and the end of February, besides being favoured in situation, will want occasional shelter according to the weather. On the first approach of frost, whether the seed is just sown, or the plants have appeared, cover the ground, either with clean straw, dry long haulm, or dried fern, two or three inches thick, or with mats supported with short stout pegs. The covering will keep off the birds, and by its warm effect on the mould, forward the germination of the seed. The time for removing or restoring it must be regulated by the weather; as the plants should be exposed to the full air whenever it can be safely done. If the season be cold without frost, take off the covering every morning, and put it on towards evening, and if the weather be sharp and frosty, let it remain on night and day, till the plants have advanced into the first rough leaves, and afterwards occasionally till the atmosphere is settled and temperate. Replace it constantly at night till there is no danger of much frost happening. then wholly discontinue the covering. *Radish* seed-pods should be taken for pickling when of plump growth, in July and August, when still young and green.

Abercrombie says " to obtain the earliest spring *Radishes*, sow on a hot-bed of dung or leaves some Early Dwarf Short Tops, in December, January, or the beginning of February. Having made a hot-bed two feet, or two and a half feet high of dung, place on a frame; earth the bed at top six inches deep; sow on the surface, covering the seed with fine mould about half an inch thick, and put on the glasses. When the plants have come up, admit air every day, in mild, or tolerably good weather, by tilting the upper end of the lights, or sometimes the front, one, two, or three inches, that the *Radishes* may not draw up weak and long-shanked. If they have risen very thick, thin them, when young, moderately at first, to one or two inches apart. Be careful to cover the frame at night with garden-mats or straw litter. Give gentle waterings about noon in sunny days. If the heat of the bed declines much, apply a moderate lining of warm dung or stable litter to the sides, which by gently renewing the heat will forward the *Radishes* for drawing in February and March. Remember, as the plants advance in growth, to give more copious admissions of air daily; either by tilting the lights several inches in front, or, in fine mild days, by drawing the glasses mostly off; but be careful to draw them on again in proper time. Small Turnip-rooted *Radishes*, or the white and red kinds, may be forced in the same manner. For raising early *Radishes* on ground not accommodated with frames, a hot-bed made in February may be arched over with hoop-bends, or pliant rods, which should be covered with mats constantly at night, and during the day in very cold weather. In moderate days turn up the mats at the warmest side; and on fine mild days take them off altogether."

" For seed transplant a sufficiency of the finest plants in April or May, when the main crops are in full perfection. Draw them for transplanting in moist weather, selecting the straightest, best-coloured roots, with the shortest tops, preserving the leaves to each; plant them by dibble, in rows, two feet and a half distant, inserting each root wholly into the ground, down to the leaves. Keep the kinds in separate situations to prevent the commixture of the pollen, and to preserve the kinds distinct. With proper watering they will soon strike fresh root, and shoot up in branchy stalks; producing plenty of seed; which will be ripe in September or October. In transplanting for seed the turnip-rooted kinds, select those with the neatest-shaped roundest roots, of moderate growth, and with smallest tops; they, as the other, will ripen seed in autumn. To obtain seed of the winter sorts, sow in spring to stand for seed; or leave, or transplant in that season some of the winter standing full roots. As the different kinds ripen seed in autumn cut the stems, or gather the principal stems or branches of pods; and place them in an open, airy situation, towards the sun, that the pod, which is of a tough texture, may dry and become brittle, so as readily to break and give out the seed freely, whether it be threshed or rubbed out."

2 R. cauda'tus (Lin. mant. 95. Lin. fil. dec. 1. t. 10.) pods depressed, acuminated, decumbent, longer than the whole plant. ⊙. H. Native of Java. Root fusiform. Differing from the rest of this section in the pods being 1-celled, and from the section *Raphanîstrum*, in the pods not being torulose, and from both by the calyx being bisaccate at the base, as well as the seeds being oblong, not round. The stems are purplish, with a glaucous hue, at first they are erect, but at last they become prostrate. Flowers the size of those of common *Wallflower*; purplish and veined. This plant is called in Java *Mougri*, where the pods are gathered and eaten as a condiment.

Tailed-podded Radish. Fl. May, Aug. Clt. 1815. Pl. 1 foot.

Sect. II. Raphani'strum (altered from *Ráphanus.*) D. C. syst. 2. p. 666. prod. 1. p. 229.—Gært. fruct. 2. p. 300. t. 143. Silique terete, acuminated, having the form of a necklace (f. 47. *m.*) when mature, 1-celled; joints 1-seeded.

3 R. rostra'tus (D. C. syst. 2. p. 666.) pods 1-celled, 4 or 5-seeded, with striated joints, shorter than the subulate-conical style. ⊙? H. Native of the north of Persia near Lenkeran. R. Raphanístrum var. Fisch. in litt. Flowers purplish.

Beaked-podded Radish. Fl. Ju. Jul. Clt. 1828. Pl. 1½ foot.

4 R. raphani'strum (Lin. spec. 953.) pods 1-celled, 3 to 8-seeded, jointed, longer than the style; leaves simply lyrate. ⊙. H. Native throughout the whole of Europe in corn-fields; a troublesome weed, plentiful in Britain. Oed. fl. dan. t. 678. Curt. fl. lond. t. 267. Schkuhr. handb. no. 1911. t. 188. Smith, engl. bot. t. 856. R. sylvéstris, Lam. fl. fr. 2. p. 495. Rapístrum

arvénse, All. ped. no. 942. Raphanístrum Lampsàna, Gært. fr. 2. p. 300. t. 143. f. 6. Raphanístrum innócuum, Medik. in Ust. new. ann. 2. p. 39. Durándea uniloculàris, Delarb. fl. auv. ed. 2. vol. 1. p. 365. Ráphanus inféstus, Sal. prod. 273. Raphanístrum ségetum, Baumg. fl. trans. 2. p. 280. Ráphanus articulàtus, Stok. bot. mat. med. 3. p. 482. White Charlock, Pet. hort. brit. t. 46. f. 10.

Var. α, *albiflòra;* flowers white, more or less streaked, with dark veins.—Weinm. phyt. t. 862. f. a.

Var. β, *purpuráscens;* flowers purplish.—Weinm. phyt. t. 862. f. b.—Tab. icon. p. 407.

Var. γ, *flaviflòra;* flowers yellow. Tab. icon. p. 408.—J. Bauh. hist. 2. p. 844. icone. This variety at first sight is easily confounded with *Wild Charlock*, *Sinàpis arvénsis*, by its yellow flowers. The stems are rather glaucous.

Linnæus, in a dissertation in the Amœnitates Academicæ informs us, that in wet seasons this weed abounds among barley in Sweden, and that being ground with the corn, the common people, who eat barley bread, are afflicted with convulsive complaints, or an epidemic spasmódic disease. M. Villars, however, remarks, that this weed is so common in some of the cold moist vallies of Dauphiny, that it must make great ravages there, if it were as dangerous as Linnæus has represented it, and yet this spasmodic disorder is unknown in that country, nor has it ever been heard of in England, where it abounds. Kroker has proved the plant to he harmless, and recommends it as a nutritious food for domestic quadrupeds, and as very agreeable to bees.

Wild-Radish or Jointed-podded Charlock. Fl. June, July. Britain. Pl. 1½ to 2 feet.

5 R. Odessa'nus (Spreng. syst. 2. p. 855.) pods 1-celled, 8-angled, furrowed, equal in length with the compressed style; leaves somewhat lyrate, alternately runcinate. ⊙. H. Native about Odessa. Raphanístrum Odessànum, Andrz. and Bess.

Odessa Radish. Fl. Ju. July. Pl. 2 feet.

6 R. La'ndra (Moretti, fl. insubr. ined. D. C. syst. 2. p. 668.) pods 1-celled, jointed (f. 47. *m.*), somewhat striated, 2-6-seeded, longer than the subulate style; leaves interruptedly lyrate. ♂. H. Native of Italy, Insubria, very common among wheat and rye. Flowers yellow. Deless. icon. sel. 2. p. 94. The radical leaves of this plant are prepared with oil, and eaten as a salad by the poor inhabitants of Insubria; and is by them called *Landra*. Roots fusiform, yellowish.

Landra Radish. Fl. Ju. July. Clt. 1820. Pl. 2 to 3 feet.

7 R. maritimus (Smith, eng. bot. t. 1643.) pods 1-celled, jointed, striated, 2-6-seeded; style conical, shorter than the ultimate joint of the pod; leaves interruptedly-lyrate. ♂. H. Native of many parts of Europe by the sea side, Britain, in the Isle of Bute, on the sea beach, 3 miles from the Mull of Galloway; in various parts of the coast of Ayrshire, and on rocks near Beachy Head, Sussex. Flowers yellow, scarcely veined. Root large, succulent, sometimes, according to Dr. Walker, lasting three years, and preferable to *Horse-Radish* for the table. Cattle were observed by Dr. Walker to be very fond of the herbage. Ráphanus raphanístrum, *var.* γ, Smith. fl. brit. 2. p. 723. Great White Charlock, Pet. herb. brit. t. 46. f. 11.

Sea-side-Radish. Fl. May, June. Britain. Pl. 3 to 4 feet.

† *Species not sufficiently known.*

8 R. lanceola'tus (Willd. spec. 3. p. 562.) pods 2-celled, ventricose, smooth, with a somewhat 4-sided beak; leaves oblong-lanceolate, somewhat toothed at the top. ⊙.? H. Native of the Antilles. Sinàpis integrifòlia, West. St. Cruc. p. 222. from Willd. Flowers middle-sized, yellow. Pods half an inch long.

Lance-leaved Radish. Fl.? Pl. 1½ foot.

9 R. biarticula'tus (Willd. enum. suppl. p. 46.) pods suberose, thick, 2-jointed; joints 1-celled, 1-seeded; lower leaves lyrate, upper ones oblong, toothed. ⊙. H. Native of China. Perhaps a species of *Rapístrum* or *Didésmus*.

Two-jointed-podded Radish. Fl. Ju. July. Pl. 1 foot.

Cult. None of these plants are worth cultivating for ornament, therefore those species not used for culinary purposes are only worth preserving in botanic gardens. The seed only requires to be sown in the open ground, and the plants afterwards treated as other hardy annuals.

Sub-order IV. SPIROLO'BEÆ (from σπειρα, *speira*, a circle, and λοβος, *lobos*, a lobe; because of the spirally twisted cotyledons, f. 45, *k. l.*) D. C. syst. 2. p. 670. prod. 1. p. 229. Cotyledons incumbent, linear, spirally or rather circinnately convolute (f. 45. *k. l.*). Seeds somewhat globose.

Tribe XVII.

BUNIA'DEÆ (plants agreeing with *Bunias* in some important characters,) or SPIROLO'BEÆ (See Sub-Order IV.) NUCAMENTA'CEÆ (*nucamentum*, a cat-kin; shape of pods.) D. C. syst. 2. p. 670. prod. 1. p. 229. Silicle nucamentaceous, indehiscent, 2-4-celled (f. 46. *s.*). Cotyledons truly circinnately twisted (f. 45. *k. l.*).

CIII. BU'NIAS (from βουνος, *bounos*, a hill; because the plants usually grow in elevated situations.) R. Br. in hort. kew. ed. 2. vol. 4. p. 75. D. C. syst. 2. p. 670. prod. 1. p. 229.

Lin. syst. *Tetradynàmia*, *Siliculòsa*. Character the same as the Tribe. Erect, branched herbs. Root perpendicular, simple. Stems round, furnished with sessile glands on the upper part, the rest somewhat villous with lymphatic hairs. Leaves pinnatifidly-runcinate, or entire. Racemes elongated; pedicels filiform, somewhat spreading, bractless. Flowers yellow.

Sect. I. ERUCA'GO (from *eruca*, rocket; analogy.) D. C. syst. 2. p. 670. prod. 1. p. 229. Tourn. inst. 232. t. 103. Calyx erect. Petals obcordate, bluntly emarginate. Silicle 4-sided (f. 47. *s.*), with the angles furnished with crested wings, and somewhat toothed, terminated with the filiform style; inside 4-celled.

1 B. eruca'go (Lin. spec. 935.) pods 4-sided, angles crested; radical leaves runcinate. ⊙. H. Native of cultivated fields throughout the south of Europe; especially Spain, south of France, Dauphiny, Italy, Austria, and Greece. Jacq. aust. t. 340. Boiss. fl. eur. t. 460. Myàgrum erucàgo, Lam. dict. 1. p. 571. no. 12. Myàgrum clavàtum, Lam. fl. fr. 2. p. 482. Erucàgo dentàta, Mœnch. Erucàgo Monspelìaca, Jaume. Erucàgo campéstris, Desv. Erucàgo runcinàta, Horn. Flowers drooping at night.

Rocket-Bunias. Fl. Apr. Jul. Clt. 1640. Pl. 1 to 1½ foot.

2 B. a'spera (Retz. obs. 2. p. 21.) pods 4-sided; angles crested; leaves all lanceolate. ⊙. H. Native of Portugal, on the banks of the Douro, near Oporto. Myàgrum ásperum, Poir. suppl. 2. p. 47. Erucàgo áspera, Horn. hafn. 2. p. 593.

Var. β, *cristàta* (D. C. syst. 2. p. 672.) lower leaves sinuately-toothed. Bùnias áspera, Brot. fl. lus. 1. p. 562. B. cristàta, Desv.

Rough Bunias. Fl. June. Clt. 1820. Pl. 1½ foot.

Sect. II. LAE'LIA (Lael, the name of some botanist.) D. C. syst. 2. p. 672. prod. 1. p. 230. Silicles ovate, 2-celled.

3 B. orienta'lis (Lin. spec. 936.) pods ovate, 2-celled, not crested, but somewhat warted. ♃. H. Native of grassy and cultivated places, in Transylvania; very common throughout European Russia, and in Siberia. It is now very common about

Paris, having migrated from gardens. Schkuhr. handb. 2. no. 1918. t. 189. Rapístrum glandulòsum, Berg. phyt. 3. p. 163. icon. Myàgrum taraxacifòlium, Lam. dict. 1. p. 570. no. 10. Bùnias verrucòsa, Mœnch. meth. 278. Bùnias perénnis, Mœnch. suppl. 91. Lae'lia orientàlis, Desv. journ. bot. 3. p. 160.

Var. β, Wintérli (D. C. syst. 2. p. 672.) leaves pubescent-hoary. Crámbe, spec. nov. Winterl, hort. Pesth. Bùnias Wintérli, Schult. obs. p. 121. no. 925.

Oriental Bunias. Fl. May, Jul. Clt. 1731. Pl. 1 to 2 feet.

Cult. These plants are not worth cultivating except in botanic gardens. They are all propagated by seeds, which only require to be sown in the open ground.

Tribe XVIII.

ERUCARIE'Æ (plant agreeing with *Erucària* in many important characters,) or SPIROLO'BEÆ (See Sub-Order IV.) LOMENTA'CEÆ (*lomentum*, a loment; shape of pods.) D. C. syst. 2. p. 673. prod. 1. p. 230. Silique lomentaceous, 2-jointed, lower joint 2-celled, upper one ensiform (f. 47. *l.*) Cotyledons replicate and somewhat spiral (f. 45. *l.*)

CIV. ERUCA'RIA (from *eruca*, rocket; analogy.) Gært. fr. 2. p. 298. t. 143. f. 9. D. C. syst. 2. p. 673. prod. 1. p. 231.

Lin. syst. *Tetradynàmia, Siliquòsa.* Character the same as tribe. Smooth, erect, branched, annual herbs. Stems round, whitish, older ones hard at the base. Cauline leaves pinnate-parted or rarely deeply-toothed, usually rather fleshy. Racemes opposite the leaves and terminal, elongating as they grow old; pedicels short, strictly erect, bractless. Flowers from white to purplish. Habit of *Cakìle.*

§. 1. *Upper joint of silique ending in the filiform style.*

1 E. Ale'ppica (Gært. fruct. l. c.) pods styliferous; leaves pinnate-parted; lobes linear, those of the lower leaves pinnatifid, those of the upper ones entire. ⊙. H. Native of the islands in the Grecian Archipelago; in Asia-Minor; about Alexandria, and in Syria near Aleppo. Vent. hort. cels. t. 64. Bùnias myagroìdes, Lin. mant. 96. Cordylocárpus lævigàtus, Willd. spec. 3. p. 563. Smith, fl. græc. t. 649. Cakìle myagroìdes, Poir. suppl. 2. p. 88? Didésmus myagroìdes, Desv. journ. bot. 3. p. 160? Stems glaucous at top. Flowers pale violet. Seed in the lower joint oblong, that in the upper orbicular.

Aleppo Erucaria. Fl. Jul. Aug. Clt. 1680. Pl. 1 foot.

2 E. latifo'lia (D. C. syst. 2. p. 675.) pods styliferous, leaves pinnate-parted; lobes oblong, deeply toothed. ⊙. H. Native of Egypt, and in Syria, near Aleppo. Deless. icon. sel. 2. t. 95. Sinàpis Hispánica, Herb. Banks. Flowers pale violet, not so large as those of *E. Aléppica.*

Broad-leaved Erucaria. Fl. June, July. Pl. 1 foot.

3 E. Olive'rii (Spreng. syst. 2. p. 915.) silique styliferous, scabrous; leaves pinnatifid, pubescent; segments linear, bluntly toothed. ⊙. H. Native of Syria between Mossul and Bagdad. Ráphanus cakiloìdes, D. C. syst. 2. p. 669. Flowers pale violet.

Oliver's Erucaria. Fl. June, July. Pl. ½ foot.

4 E.? tenuifo'lia (D. C. syst. 2. p. 675.) lower joint of pod 2-seeded, upper joint 1-seeded; leaves bipinnate-parted, lobes linear. ⊙. H. Native of Spain. Sinàpis Hispánica, Lin. spec. 935. exclusive of the synonym of Tournefort. Flowers purplish.

Slender-leaved Erucaria. Pl. 1 foot.

5 E. hypogæ'a (Viv. append. fl. cors. in. Schlecht. Linneæ. 1. p. 501.) pods styliferous; leaves pinnate; leaflets sessile, triangularly falcate; scape naked, 1-flowered. ⊙. H. Native of Corsica. Sisýmbrium monánthon, Viv. fl. libyc. The name is derived from *υπο, under,* and *γη, the earth;* because the plant grows close to the earth.

Hypogæus Erucaria. Fl. May, July. Pl. 2 inches.

§. 2. *Upper joint of silique pointed with the sessile stigma.*

6 E. crassifolia (Delile, ill. fl. ægyp. p. 20. pl. bot. t. 34. f. 1. descr. p. 100.) stigma sessile; beak longer than pod; leaves pinnate-parted, thick; lobes linear. ⊙. H. Native of Egypt, frequent about the Saqqarah Pyramids. Brássica crassifòlia, Forsk. fl. ægyp. arab. descr. p. 118. Herb fleshy. Flowers from white to violet, scarcely so large as those of *E. Aléppica.* This plant has a hot taste like *Cress.*

Thick-leaved Erucaria. Fl. June, Dec. Clt. 1823. Pl. ¾ foot.

7 E. Hyrca'nica (D. C. syst. 2. p. 676.) stigma sessile; beak length of pod; leaves few, grossly toothed. ⊙. ? H. Native of the North of Persia. Sisymbrium myàgro affìne, Stev. in litt. Flowers when dry cream-coloured.

Hyrcanian Erucaria. Fl. Ju. July. Pl. 1 to 1½ foot.

Cult. None of these plants are worth cultivating except in botanic gardens. The seeds only require to be sown in the open ground, and the plants treated like other hardy annuals.

Sub-order V. DIPLECOLO'BEÆ (from *διπλαξ, diplax,* double, and *λοβος, lobos,* a lobe; because the cotyledons have a double plait, or two legs, f. 45. *m.* f. 47. *p.*) D. C. syst. 2. p. 776. prod. 1. p. 230.

Cotyledons incumbent, linear, with two legs or a double plait, that is to say plaited twice crosswise (f. 45. *m.* f. 47. *p.*). Seeds depressed.

Tribe XIX.

HELIOPHI'LEÆ (plants agreeing with *Heliόphila* in many characters,) or DIPLECOLO'BEÆ (See Sub-order V.) SILIQUO'SÆ (*siliqua,* a long pod; pods long.) D. C. syst. 2. p. 676. prod. 231. Silique elongated (f. 47. *o.*), rarely oblong or oval, with a linear or oval dissepiment; valves flat, or in those with elongated siliques rather convex (f. 47. *o.*).

CV. CHAMI'RA (from *χαμαι, chamai,* on the ground; plant weak and laying on the ground.) Thunb. nov. gen. pl. 2. p. 48. D. C. syst. 2. p. 677. prod. 1. p. 231.

Lin. syst. *Tetradynàmia, Siliquòsa.* Calyx with 2 spurs at the base. A smooth, weak herb. Leaves stalked, cordate, grossly toothed. Racemes lax; pedicels filiform, bractless. Flowers white. Silique ovate-oblong.

1 C. cornu'ta (Thunb. l. c.) ⊙. H. Native of the Cape of Good Hope, in the fissures of the rocks called Vitteklip. Heliόphila circeoìdes, Lin. fil. suppl. 298. Leaves alternate, almost kidney-shaped.

Horned-calyxed Chamira. Fl. Ju. July. Clt. 1828. Pl. ½ foot.

Cult. The seeds of *Chamìra* should be sown in a pot filled with a mixture of peat and sand, in the month of March, then placed in a hot-bed, and when the plants are grown to a sufficient size, which will be about the end of April, they may be planted out into the open border, in a dry, warm situation, where they will flower, and ripen their seed.

CVI. HELIO'PHILA (from *ηλιος, helios,* the sun, and *φιλεω, phileo,* to love; because the plants grow in places exposed to the sun.) N. Burm. in Lin. gen. no. 816. Lam. ill. t. 563. D. C. syst. 2. p. 677. prod. 1. p. 231.

Lin. syst. *Tetradynàmia, Siliquòsa.* Calyx equal at the base. Annual herbs or sub-shrubs. Roots slender. Stem round, branched. Leaves very variable. Racemes elongated; pedicels filiform, bractless. Flowers yellow, white, but usually blue.

SECT. I. CARPONE'MA (from καρπος, *karpos*, a fruit, and νημα, *nema*, a thread; because of the slender pods.) D. C. syst. 2. p. 679. prod. 1. p. 231. Silique sessile, terete, scarcely contracted between the seeds, acuminated at both ends, indehiscent or hardly dehiscent. A weak annual herb.

1 H. FILIFÓRMIS (Lin. fil. suppl. 296.) herbaceous, smooth; pods terete, tapering towards both ends; leaves linear, awl-shaped. ⊙. H. Native of the Cape of Good Hope. Lam. ill. t. 563. f. 3.? Flowers small, purplish, or bluish.

Filiform-podded Heliophila. Fl. Jul. Aug. Clt. 1786. Pl. 1½ foot.

SECT. II. LEPTO'RMUS (from λεπτος, *leptos*, slender, and ορμος, *ormos*, a necklace; in allusion to the pods being slender, as well as being contracted between the seeds, giving them the appearance of a necklace.) D. C. syst. 2. p. 680. prod. 1. p. 231. Silique sessile, somewhat compressed, very slender, somewhat necklace-formed, contracted between the seeds; joints ovate-oblong. Smaller stamens usually furnished with a tooth. Annual herbs, intermediate between Sect. *Ormíscus* and *Carponèma*.

2 H. DISSE'CTA (Thunb. prod. 108.) herbaceous, smooth; pods very slender, somewhat necklace-formed, terminated by the thick knotted stigma; leaves filiform, entire, trifid or parted at the apex. ⊙. H. Native of the Cape of Good Hope. Flowers blue. This is a very pretty species.

Var. β, *H. pinnàta*; var. (Vahl. herb.) Flowers, when dry, white.

Dissected-leaved Heliophila. Fl. Ju. Jul. Clt. 1792. Pl. ¾ ft.

3 H. TENE'LLA (Banks. herb. D. C. syst. 2. p. 680.) herbaceous, smooth; pods? Leaves filiform, entire; stem simple. ⊙. H. Native of ——? Very like *H. dissécta*, but the pods are unknown. Flowers blue?

Tender Heliophila. Fl. Ju. July. Pl. ¾ foot.

4 H. TENUISÍLIQUA (D. C. syst. 2. p. 680.) herbaceous, smooth; pods very slender, compressed, somewhat moniliform, terminated by the acuminated stigma; leaves linear, entire. ⊙. H. Native of the Cape of Good Hope. Deless. icon. sel. 2. t. 96. A'rabis Capénsis, Burm. herb. Flowers when dry whitish, but when fresh probably reddish.

Thin-podded Heliophila. Pl. 1 foot.

5 H. LONGIFO'LIA (D. C. syst. 2. p. 681.) herbaceous, smooth; pods very slender, compressed, somewhat moniliform; stigma punctiform; leaves linear, entire, or 3-parted. ⊙. H. Native of the Cape of Good Hope. Flowers blue. Habit of *H. pilòsa*, but differs from it in the plant being smooth.

Long-leaved Heliophila. Fl.? Pl. ¾ foot.

6 H. SONCHIFO'LIA (D. C. syst. 2. p. 681.) herbaceous, smooth; pods slender, somewhat compressed, torulose; radical leaves pinnatifid, with 2 or 3 pairs of linear lobes. ⊙. H. Native of the Cape of Good Hope. Flowers blue. Sepals oblong, hardly membranous on the margin. Habit of *Sónchus picroìdes*.

Sowthistle-leaved Heliophila. Fl. Ju. July. Pl. ¾ foot.

SECT. III. ORMÍSCUS (from ορμισκος, *ormiskos*, a small necklace; because of the pods having links like a necklace.) D. C. syst. 2. p. 682. prod. 1. p. 231. Silique sessile, much compressed, moniliform, with the margins narrowed or contracted between the seeds; joints orbicular, 1-seeded; seeds orbicular, much compressed. Stamens toothless in all except *H. sessilifòlia*, no. 14. Herbs annual.

7 H. AMPLEXICAU'LIS (Lin. fil. suppl. 296.) herbaceous, smooth; pods moniliform; lower leaves opposite, upper ones alternate, cordate, stem-clasping, oblong, entire. ⊙. H. Native of the Cape of Good Hope. Jacq. fragm. 49. t. 64. f. 2. Trentepòhlia integrifòlia, Mertens. H. integrifòlia, Mus. hort. monsp. Flowers small, from white to purplish.

Stem-clasping-leaved Heliophila. Fl. June, Sept. Clt. 1774. Pl. ¾ foot.

8 H. RIVA'LIS (Burch. cat. pl. afr. aust. extratrop. no. 5496.) herbaceous, smooth; pods moniliform, erectish; leaves pinnatifid, with 3 or 4 pairs of linear-acute lobes; petals obovate. ⊙. H. Native of the Cape of Good Hope, in humid places at Melkhout-Kraal, near Nysna. Lam. ill. t. 563. f. 2. Flowers white, sometimes changing to lilac.

River-side Heliophila. Fl. Jun. Sep. Clt. 1819. Pl. 1 foot.

9 H. VARIA'BILIS (Burch. cat. georgr. pl. afr. aust. extratrop. no. 1249.) herbaceous, smooth; pods moniliform, erectish; leaves pinnate-parted, with 3 or 4 pairs of linear-acute lobes; petals oblong-linear. ⊙. H. Native of the Cape of Good Hope in the desert called Roggeweld-Karro, near Juck-river. Flowers at first white, but changing to pale rose. Habit of *H. Chamæmelifòlia*. Terminal lobe of leaf much elongated.

Variable-flowered Heliophila. Fl. Ju. Sept. Pl. ¾ foot.

10 H. PE'NDULA (Willd, spec. 3. p. 529.) herbaceous smooth; pods moniliform, pendulous; leaves pinnate-parted, with 3 or 5 pairs of linear-entire lobes. ⊙. H. Native of the Cape of Good Hope. H. pinnàta, Vent. malm. t. 113. not Lin. H. coronopifòlia, var. β, Lam. dict. 3. p. 90. ill. t. 562. f. 2. Petals dirty-white, with short yellowish claws.

Pendulous-podded Heliophila. Fl. Ju. Sep. Clt. 1792. Pl. 1 to 1½ foot.

11 H. TRI'FIDA (Thunb. prod. 108.) herbaceous, smooth; pods moniliform, rather pendulous; leaves trifid or pinnately-quinquefid; lobes entire, filiform. ⊙. H. Native of the Cape of Good Hope. H. pinnàta, Lin. fil. suppl. 297. Stems dividing at the neck into many branches, which form a tuft. Flowers small, purplish, almost like those of *A'rabis vérna*.

Trifid-leaved Heliophila. Fl. June, Sep. Clt. 1819. Pl. 3 or 4 inches.

12 H. PUSÍLLA (Lin. fil. suppl. 297.) herbaceous, smooth; pods moniliform, spreading; leaves linear-setaceous, entire. ⊙. H. Native of the Cape of Good Hope. A'rabis Capénsis, Burm. fl. cap. 18.—Pluk. mant. 135. t. 432. f. 2. Racemes corymbose, 6-8-flowered. Flowers small, white.

Small Heliophila. Fl. Ju. Sep. Clt. 1824. Pl. 2 inches.

13 H. LEPIDIOÍDES (Link. enum. 2. p. 174.) herbaceous, smooth, decumbent; pod erectly-spreading, oblong-ovate, somewhat repand on the margin, few-seeded; leaves pinnatifid, with linear-lobes. ⊙. H. Native of the Cape of Good Hope. Trentepòhlia lepidioides, Roth. nov. spec. 326.? Flowers white, very small.

Cress-like Heliophila. Fl. Ju. Sep. Clt. 1820. Pl. ½ to ¾ foot.

14 H. SESSILIFLO'RA (Burch. cat. geogr. pl. afr. aust. extratrop. no 1318 and 1391.) herbaceous, smooth; pods moniliform; leaves pinnate-parted, with linear-subulate lobes; stamens furnished on each side with a tooth. ⊙. H. Native of the Cape of Good Hope, in the territory called Roggeweld, near the Jackal-fountain. Habit nearly of *H. péndula*. Petals obovate, white. It is doubtful whether this plant belongs to this Section or to that of *Leptórmus*.

Sessile-flowered Heliophila. Fl. Ju. Sep. Pl ¾ foot

SECT. IV. SELENOCARPÆ'A (from σελην, *selene*, the moon, and καρπος, *karpos*, a fruit; in allusion to the shape of the pods as well as the former name of the plants.) D. C. syst. 2. p. 684. prod. 1. p. 232. Silicles sessile, compressed, oval or orbicular, few-seeded. Seeds compressed, orbicular. Smooth annual herbs, branching from the base.

15 H. DIFFU'SA (D. C. syst. 2. p. 685.) herbaceous, smooth; pods oval-oblong, 4-8-seeded; leaves pinnate-parted, with filiform entire lobes. ⊙. H. Native of the Cape of Good Hope. Lunària diffùsa, Thunb. prod. 107. Farsètia diffùsa, Desv.

journ. bot. 3. p. 173. Ricòtia multífida, Herb. Banks. Trentepòhlia lepidioìdes, Roth. nov. spec. 326.? Flowers small, whitish? Seeds 2-4 in each cell.

Diffuse-branched Heliophila. Fl. June, Sept. Clt. 1818. Pl. ¾ foot.

16 H. PELTA'RIA (D. C. syst. 2. p. 685.) herbaceous, smooth; pods oval-orbicular, 2-4-seeded; leaves pinnate-parted; lobes linear, entire. ⊙. H. Native of the Cape of Good Hope. Peltària Capénsis, Lin. fil. suppl. 296. Lunària pinnàta, Thunb. prod. 107. Aurínia Capénsis, Desv. journ. bot. 3. p. 162. Farsètia pinnàta, Desv. journ. bot. 3. p. 173. Flowers small, whitish. Cells of silicle usually 1-seeded.

Shield-podded Heliophila. Fl. June, Sept. Clt. 1820. Pl. ¼ to ½ foot.

SECT. V. ORTHÓSELIS (from *ορθος*, *orthos*, upright, and *σελις*, *selis*, the side of a leaf; because the margins of the pods are straight, or nearly so.) D. C. syst. 2. p. 685. prod. 1. p. 232. Siliques sessile, compressed, linear, with straight margins, or scarcely contracted between the seeds, (f. 47, *o*.) apiculate by the style. Lateral stamens usually toothless.

§. 1. *Annual Herbs.*

17 H. PILO'SA (Lam. dict. 3. p. 90.) stem hispid with spreading hairs; pods linear; leaves rather hairy, sometimes linear, entire, sometimes trifid at the top, and cuneated at the base. ⊙. H. Native of the Cape of Good Hope. Petals pale blue, twice the length of the calyx. An elegant plant.

Var. α, integrifòlia (D. C. syst. 2. p. 685.) leaves linear, entire. H. integrifòlia, Lin. spec. 926, exclusive of the synonym of Pluk. Jacq. icon. rar. 3. t. 506. Cheiránthus Africànus, Lin. amœn. acad. 6. p. 90. Helióphila, Burm. nov. act. ups. 1. p. 1773. p. 94. t. 7.—Lam. ill. 563. f. 1.

Var. β, incìsa (D. C. syst. 2. p. 686.) leaves cuneated at the base, and divided into 3 linear-lobes at the apex. H. arabioìdes, Sims, bot. mag. t. 496.

Hairy Heliophila. Fl. May, Jul. Clt. 1768. Pl. ½ to 1 foot.

18 H. DIGITA'TA (Lin. fil. suppl. 296.) stem hispid from spreading hairs; pods linear; leaves oval, entire, or here and there grossly toothed. ⊙. H. Native of the Cape of Good Hope. Jacq. fil. icon. in herb. Jacq. H. coronopifòlia, Thunb. prod. 107.? Perhaps only a variety of *H. pilòsa*. Flowers pale-blue. Leaves sometimes cut into 5-6 lobes.

Digitate-leaved Heliophila. Fl. Ju. Sept. Clt. 1819. Pl. ½ to ¾ foot.

19 H. INCÌSA (Herb. Banks. and D. C. syst. 2. p. 687.) smooth; pods linear; leaves oblong, cuneated at the base, lobed at the top; lobes narrow, acute. ⊙. H. Native of the Cape of Good Hope. Flowers middle-sized, yellow.

Cut-leaved Heliophila. Fl. June, Sept. Pl. ¾ foot.

20 H. DIVARICA'TA (Herb. Banks. and D. C. syst. 2. p. 687.) smooth; pods? leaves linear, quite entire; branches spreading. ⊙.? H. Native of the Cape of Good Hope. Flowers when dry yellowish. Habit of *Lepídium graminifòlium*.

Divaricate-branched Heliophila. Fl. Ju. Sept. Pl. ¾ foot.

21 H. CORONOPIFO'LIA (Lin. spec. 927, exclusive of the synonym of Pluk.) smooth; pods linear; leaves pinnate-parted; lobes linear, quite entire. ⊙. H. Native of the Cape of Good Hope.—Herm. lugd. 366. and 367. icon. Flowers blue-violet, spreading. Perhaps belonging to this section.

Buck-horn-leaved Heliophila. Fl. June, Sept. Clt. 1778. Pl. 1 to 2 feet.

22 H. STRÍCTA (Sims, bot. mag. 2526.) leaves hairy, lower ones lanceolate, pinnatifid, upper ones linear, quite entire; pods straight, mucronate, pubescent. ⊙. H. Native of the Cape of Good Hope. Flowers blue.

Straight-podded Heliophila. Fl. June, July. Clt. 1820. Pl. ½ to 1 foot.

23 H. TRIFU'RCA (Burch. cat. geogr. pl. afr. aust. extratrop. no. 1487.) smooth; pods linear, deflexed; leaves very narrow, 3-forked; lobes linear, very entire. ⊙. H. Native of the Cape of Good Hope, near Sack river. H. tripártita, Thunb. prod. 108? Petals large, obovate, appearing when dry pale-purplish, 4 lines long, and 3 lines broad.

Three-forked-leaved Heliophila. Fl. June, Sept. Pl. 1 to 2 feet.

24 H. PECTINA'TA (Burch cat. geogr. pl. afr. austr. extratrop. no. 1362, and 1397.) smooth; pods linear, pendulous; leaves pinnate-parted, with 4 or 5 pair of approximate lobes. ⊙. H. Native of the Cape of Good Hope, in Roggeweld territory, near the rivulet called Riet river. Farsètia elongàta, Desv. journ. bot. 3. p. 173? Flowers small, whitish. Stem much branched. Seeds small, not margined.

Pectinated-leaved Heliophila. Fl. June, Sept. Clt. 1819. Pl. 1 foot.

25 H. FŒNICULA'CEA (R. Br. in hort. kew, ed. 2. vol. 4. p. 100.) hairy; pods linear, spreading; leaves pinnately or bipinnately parted; lobes filiform. ⊙. H. Native of the Cape of Good Hope. Flowers small, purple.

Fennel-like Heliophila. Fl. June, Sept. Clt. 1774. Pl. 1½ foot.

26 H. CHAMÆMELIFÒLIA (Burch. cat. geogr. pl. afr. austr. extratrop. no. 1226.) pilose at the base, smooth at the top; pods linear, erectish; leaves pinnate-parted; lobes linear, very entire, acute. ⊙. H. Native of the Cape of Good Hope, at Ongeluke's river, in Roggeweld's-Karro. Flowers white. Plant very like *H. crithmifòlia*, but differs in not being pubescent.

Camomile-leaved Heliophila. Fl. June, Sept. Plt. ½ foot.

27 H. CRITHMIFÒLIA (Willd. enum. 2. p. 682.) velvety-pubescent; pods linear, drooping; leaves pinnate-parted; somewhat fleshy; lobes rather filiform, and furrowed on the upper surface. ⊙. H. Native of the Cape of Good Hope. Deless. icon. sel. 2. t. 97. Sisýmbrium crithmifòlium, Roth. nov. pl. spec. 225. Flowers small, violet.

Var. β, H. parviflòra (Burch cat. geogr. afr. aust. extratrop. no. 1236.) Not differing from the species, unless that the flowers are white, not violet.

Samphire-leaved Heliophila. Fl. June, July. Clt. 1816. Pl. ½ foot.

§ 2 *Stems frutescent or shrubby.*

28 H. ABROTANIFÒLIA (herb. Banks and D. C. syst. 2. p. 690.) smooth; pods linear, spreading; leaves 3 to 5-lobed; lobes awl-shaped, short. ♄. G. Native of the Cape of Good Hope. Flowers middle-sized, white? Calyxes membranous. Seeds flat, margined, orbicular.

Southernwood-leaved Heliophila. Shrub ½ foot.

29 H. GLAU'CA (Burch. cat. geogr. afr. austr. extratrop. no. 4782.) smooth, glaucous; pods linear, erect; leaves oblong, rather fleshy, lower ones blunt, upper ones acute. ♄. G. Native of the Cape of Good Hope. Flowers white, about the size of those of *Vélla pseùdo-cytisus*.

Var. α, cándida (D. C. syst. 2. p. 690.) flowers white. Burch. l. c. no. 4782. Native near Loeri river.

Var. β, purpuráscens (D. C. syst. l. c.) flowers tinged with purple. Burch. l. c. no. 4969. Native in the territory of Langekloof.

Glaucous Heliophila. Shrub 1½ to 2 feet.

30 H. FASCICULA'RIS (herb. Banks, and D. C. syst. 2. p. 691.) smooth; pods linear, somewhat erect, scarcely longer than the pedicels; leaves filiform. ♄. G. Native of the Cape of Good

Hope. Flowers? Bearing small leafy branches in the axils of the leaves. Silique linear, a line in breadth.

Bundled Heliophila. Shrub 1 foot.

31 H. SUAVÍSSIMA (Burch. cat. geogr. pl. afr. aust. extratrop, no. 2742.) smooth; pods almost linear, narrowed at the base, spreading; leaves linear-subulate, acutish. ♄. G. Native of the Cape of Good Hope, near Plettenbergs-Baaken. H. júncea, Vahl. herb. Flowers very sweet-scented, violet.

Very-sweet-scented-flowered Heliophila. Shrub 1 foot.

32 H. SUBULÀTA (Burch. cat. geogr. afr. aust. extratrop. no. 6214.) pubescent; pods linear, spreading, not narrowed at the base; leaves linear-subulate, very acute. ♄. G. Native of the Cape of Good Hope, at Hartenbosch, near Mossel Bay. This plant, at first sight, has the appearance of a variety of *H. suavíssima*. Flowers violet? Petals oblong.

Subulate-leaved Heliophila. Shrub 1 foot.

33 H. PLATYSÍLIQUA (R. Br. in hort. kew, ed. 2. vol. 4. p. 99.) smooth; pods linear, erect, or pendulous; leaves fleshy, terete. ♄. G. Native of the Cape of Good Hope. Cheiránthus carnòsus, Thunb. prodr. 108. Hésperis cheiránthus carnòsus, Poir. suppl. 3. p. 197. Flowers purple. Sepals with membranous margins. Stems whitish.

Broad-podded Heliophila. Fl. July, August. Clt. 1774. Shrub 1 foot.

34 H. LINEARIFOLIA (Burch. cat. geogr. afr. austr. extratrop. no. 347, and 793.) smoothish; pods erect, linear, pointed with the style; leaves linear, acute, quite entire. ♄. G. Native of the Cape of Good Hope, in the vicinity of Cape Town. Flowers blue. Stems erect, or decumbent.

Var. β, hirsùta (Burch. l. c. no. 5518.) plant rather hairy. Native at Nysna, in the region of Anteniqua-land.

Linear-leaved Heliophila. Fl. July, August. Clt. 1819. Shrub 1 foot.

35 H. STYLOSA (Burch. cat. geogr. afr. aust. extratrop. no. 3291.) smooth; pods linear, pendulous; style filiform longer than the pedicel; leaves linear, quite entire. ♄. G. Native of the Cape of Good Hope, at Komme-dakka. Petals oblong-linear, apparently from yellow to reddish in a dry state.

Long-styled Heliophila. Fl. July, August. Shrub ½ to ¾ ft.

36 H. VIRGÀTA (Burch. cat. pl. afr. austr. extratrop.) smooth; pods somewhat deflexed, linear, pointed with the filiform style, which is longer than the pedicel; leaves ovate, entire, or toothed. ♄. G. Native of the Cape of Good Hope.

Var. α, integrifòlia (D. C. syst. 2. p. 693.) leaves entire; flowers yellowish-white. Burch. l. c. no. 4605.

Var. β, dentàta (D. C. l. c.) leaves grossly and sharply toothed; flowers white, sweet-scented. Burch. l. c. no. 3933.

Twiggy Heliophila. Shrub 2 feet.

37 H. SCOPÀRIA (Burch. cat. geogr. pl. afr. austr. extratrop. no. 7887, and 8557.) smooth; pods erect, linear, ending in the short style; (f. 47, *o.*) leaves linear-subulate; racemes few-flowered. ♄. G. Native of the Cape of Good Hope, in the vicinity of Cape Town, and on the Baviaans-Kloof mountains. Cheiránthus stríctus, Poir. suppl. 2. p. 781. Flowers white, tipped with red. Habit of plant very unlike any of the other species of *Heliophila*.—Deless icon. sel. 2. t. 98.

Broom Heliophila. Fl. July, Aug. Clt. 1802. Sh. 1 to 2 ft.

SECT. VI. PACHYSTYLUM (from παχυς, *pachys*, thick, and στυλος, *stylos*, a style; because the pods are terminated by a thick conical style.) D. C. syst. 2. p. 694. prod. 1. p. 234. Siliques sessile, somewhat compressed, linear, velvety, crowned by the thick conical short style. A pubescent sub-shrub, with entire leaves.

38 H. INCÀNA (Ait. hort. kew. ed. 1. p. 397. ed. 2. vol. 4. p. 99.) pods linear, compressed, velvety, terminated by the thick, conical, smooth style; leaves oblong. ♄. G. Native of the Cape of Good Hope. H. frutéscens, Lam. dict. 3. p. 91. Petals blueish-purple, longer than the calyx.

Hoary Heliophila. Fl. May, Aug. Clt. 1774. Shrub 2 ft.

SECT. VII. LANCEOLÀRIA (from *lancea*, a lance; lanceolate shape of pods.) D. C. syst. 2. p. 695. prod. 1. p. 235. Siliques sessile, lanceolate, ending in a short style; seeds large. Cotyledons 2-legged, somewhat twisted. A little smooth shrub.

39 H. MACROSPÉRMA (Burch. cat. geogr. pl. afr. austr. extratrop. no. 3425.) pods lanceolate, ending in the short style; leaves linear, acute. ♄. G. Native of the Cape of Good Hope, on rocks at Zwart-Waterpoost. Flowers unknown.

Large-seeded Heliophila. Shrub 1 foot.

SECT. VIII. CARPOPÒDIUM (from καρπος, *karpos*, a fruit, and πους ποδος, *pous podos*, a foot; in allusion to the pods being seated on pedicels.) D. C. syst. 2. p. 695. prod. 1. p. 235. Siliques compressed, elongated, linear, standing on long pedicels, pointed by the short style. A smooth erect shrub.

40 H. CLEOMOÌDES (D. C. syst. 2. p. 695.) pods compressed, pedicellate; leaves linear-lanceolate. ♄. G. Native of the Cape of Good Hope. Deless. icon. sel. 2. t. 99. Cleòme Capénsis, Lin. spec. 940. Cheiránthus stríctus, Lin. fil. suppl. 296. Petals oblong, yellow, a little longer than the calyx.

Cleome-like Heliophila. Fl. July. Clt. 1802. Sh. 1 foot.

† *Species not sufficiently known.*

41 H. MOLLUGÍNEA (D. C. syst. 2. p. 696.) ⊙. H. Native of the Cape of Good Hope.—Pluk alm. 213. t. 200. f. 3. Weinm. phyton. t. 641. f. c. from the figure the leaves are opposite, 3-parted, with linear acute lobes. Flowers blue.

Mollugo-like Heliophila. Fl. June, July. Pl. 1 foot.

42 H. LINIFLÒRA (D. C. syst. 2. p. 696.) ⊙. H. Native of the Cape of Good Hope.—Herm. lugd. b. 366. Pods upright. Leaves narrow, toothed. Flowers blue.—Tourn. inst. 223.

Flax-flowered Heliophila. Fl. June, July. Pl. ½ foot.

43 H. HETEROPHÝLLA (Thunb. prodr. 107.) ⊙.? H. Native of the Cape of Good Hope. Stem branched; leaves filiform, lower ones 3-parted, upper ones entire. Scarcely differing from *H. linearifòlia*.

Various-leaved Heliophila. Pl. 1 foot.

44 H. LYRÀTA (Thunb. prodr. p. 108.) Native of the Cape of Good Hope. Leaves lyrate. Pods terete.

Lyrate-leaved Heliophila. Fl.? Pl.?

45 H. LINEÀRIS (D. C. syst. 2. p. 697.) ⊙. H. Native of the Cape of Good Hope. Hésperis cheiránthus lineàris, Poir. suppl. 3. p. 197. Cheiránthus lineàris, Thunb. prodr. 108. Stems erect, herbaceous. Leaves linear, smooth.

Linear-leaved Heliophila. Pl. 1 foot.

46 H. CALLOSA (D. C. syst. 2. p. 696.) ♄. G. Native of the Cape of Good Hope. Cheiránthus callòsus, Lin. fil. suppl. 296. Stem shrubby, angular. Leaves lanceolate entire, callose.

Callous-leaved Heliophila. Shrub 1? foot.

47 H. GRAMÍNEA (D. C. syst. 2. p. 697.) ⊙. H. Native of the Cape of Good Hope. Cheiránthus gramíneus, Thunb. prodr. 108. Hésperis cheiránthus gramíneus, Poir. suppl. 3. p. 167. Stem herbaceous, simple, erect. Radical leaves ensiform.

Grassy-leaved Heliophila. Pl. 1 foot.

48 H.? ELONGÀTA (D. C. syst. 2. p. 697.) ⊙. H.? Native of the Cape of Good Hope. Cheiránthus elongàtus, Thunb. prodr. 108. Hésperis cheiránthus elongàtus, Poir. suppl. 3. p. 197. Stem herbaceous, erect. Leaves linear, entire, smooth.

Elongated Heliophila. Pl. ¾ foot.

Cult. This genus is composed of pretty little plants, which deserve to be cultivated in every garden. The seeds of the annual

kinds should be sown in pots early in the spring, and placed either in a green-house or gentle hot-bed; and in May the plants should be planted out into the open border, in a warm dry situation. A light sandy soil will suit them best. The green-house species are all little shrubby plants, and grow freely in a mixture of sand, loam, and peat. They may be either increased by seeds, or young cuttings will root readily if planted in a pot of sand, and then placed under a hand-glass.

Tribe XX.

SUBULARIE'Æ (plants agreeing with *Subulària* in some characters), or DIPLECOLO'BEÆ (see Sub-Ord. V.) LATISE'PTÆ (from *latus*, broad, and *septum*, a partition; dissepiment broad.) D. C. syst. 2. p. 697. prod. 1. p. 235. Silicle oval, (f. 47. *n.*) with an elliptical dissepiment, convex valves, many-seeded cells, and a sessile stigma. (f. 47. *n.*) Cotyledons plaited twice cross-wise. (f. 45. *m.* f. 47. *p.*)

CVII. SUBULA'RIA (from *subula*, an awl; form of leaves.) Lin. gen. no. 799. D. C. syst. 2. p. 697. prod. 1. p. 235.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval, with convex valves, and 4-seeded cells, (f. 47. *n.*) and a sessile punctiform stigma. Calyx closed. A little aquatic, stemless herb, with fascicular, simple, white, fibrous roots. Radical leaves linear, awl-shaped. Scapes naked, few-flowered. Pedicels filiform, bractless. Flowers small, white.

1 S. aqua'tica (Lin. spec. 896.) ⊙. H. Native of the colder parts of Europe, in ditches, lakes, rivulets, and rivers, with a sandy or gravelly bottom; viz. Lapland, Sweden, Norway, at Petersburg along the Neva, Germany, &c., plentiful in the north of England, Scotland, and Ireland. Oed. fl. dan. t. 35. Smith engl. bot. 732. Schkuhr handb. 2. no. 1762. t. 180. Dràba subulària, Lam. ill. t. 556. f. 3. Dr. Hooker has confirmed Sir James Smith's account of the flowers always being several feet under water, where he observed them to be constantly expanded, so that the impregnation actually takes place in that element. The leaves are about 8 or 10 lines long, awl-shaped.

Aquatic, or Common Awl-wort. Fl. June, July. Britain. Pl. 1 to 2 inches.

Cult. This curious little plant only requires to be planted or sown in a pond or rivulet, with a sandy or gravelly bottom; or it may be preserved in a pot filled with gravel or sand, and then plunged in water.

CVIII. PLATYPE'TALUM (from πλατυς, *platys*, broad, and πεταλον, *petalon*, a petal; petals broad.) R. Br. in app. Parry's voy. p. 8.

Lin. syst. *Tetradynàmia, Siliculòsa.* Silicle oval, with convex valves, crowned by a short style. Seeds numerous in the cells, disposed in two rows. Calyx spreading. Petals dilated. Plants with the habit of *Bràya*, which it agrees with in the structure of the flowers, and in the cotyledons being incumbent. To *Subulària* it is more nearly allied, in the cotyledons being narrow and 2-legged.

1 P. purpura'scens (R. Br. l. c.) stigma 2-lobed, spreading; style manifest; scape naked, or furnished with 1-leaf, pubescent; pods smoothish. ♃. H. Native of Melville Island. Root fusiform, with numerous short undivided stems, rising from its neck. Stems short, naked at the base, but leafy at the top. Leaves oblong, bluntish, usually quite entire, thick, rather pilose at the top. Calyx purplish; petals white, with a faint tinge of purple. Flowers 4 to 6, in a bractless corymb.

Purplish-flowered Platypetalum. Pl. $\frac{1}{4}$ foot.

2 P. du'bium (R. Br. l. c.) stigma undivided, almost sessile; pods and scapes pubescent. ♃. H. Native at Melville Island.

Doubtful Platypetalum. Pl. $\frac{1}{4}$ foot.

Cult. These little alpine plants will require to be grown in pots filled with a mixture of peat and sand, and treated as other alpine plants. They may be either increased by cuttings, made of the barren shoots, or by seeds.

Tribe XXI.

BRACHYCARPE'Æ, or DIPLECOLO'BEÆ (see Sub-Ord. V.) ANGUSTISE'PTÆ (*angustus*, narrow, and *septum*, a partition; dissepiment narrow.) D. C. syst. 2. p. 698. prod. 1. p. 235. Silicle didymous (f. 51. *a.*), or twin, with a very narrow dissepiment, and very ventricose valves, one-seeded cells, and a short style. (f. 51. *b.*) Cotyledons biplicate?

CIX. BRACHYCARPÆ'A (from βραχυς, *brachys*, short, and καρπος, *karpos*, a fruit; alluding to the short pods.) D. C. syst. 2. p. 698. prod. 1. p. 235.

Character the same as tribe. A little smooth twiggy shrub, with a pod like that of *Senebièra* or *Biscutélla*, and with the habit of the shrubby species of *Heliόphila* (f. 51.).

1 B. va'rians (D. C. syst. 2. p. 699.) suffruticose, smooth; pods somewhat twin; leaves oblong-linear. ♄. G. Native of the Cape of Good Hope. Corónopus anómalus, Spreng. syst. 2. p. 853. Deless. icon. sel. 2. t. 200. Flowers large.

FIG. 51.

Var. α, *flàva* (D. C. l. c.) flowers yellow. Heliόphila flàva, Lin. fil. suppl. 297. Myàgrum grandiflòrum, herb. Banks.

Var. β, *purpuráscens* (D. C. l. c.) flowers purplish. Polýgala bracteolàta, Burm. herb.

Varying Brachycarpæa. Shrub 1 to $1\frac{1}{2}$ foot.

Cult. This curious little shrub will thrive well in a mixture of sand, loam and peat; and young cuttings will root freely under a hand-glass, if planted in a pot of sand.

Sub-order VI. SCHIZOPETALIE'Æ. Cotyledons 4, twisted separately, whorled. Calyx closed. Petals pinnatifid. Filaments nearly equal. Glands 4, linear, erect, nearly opposite the petals. Style very short, crowned by 2 approximate stigmas, which are decurrent at the base. Silique torose, sessile, 2-celled, narrow-linear. Seeds in one row. Radicle white, arched, a little longer than the seed.

CX. SCHIZOPE'TALON (from σχιζω, *schizo*, to divide, πεταλον, *petalon*, a petal; in allusion to the cut or divided petals.) R. Br. in bot. reg. t. 752. Character the same as the order.

1 S. Walke'ri (R. Br. in bot. mag. 2378.) ⊙. F. Native of Chili. An annual herb, with alternate sinuately-pinnatifid leaves. Flowers white, in long racemes; pedicels each furnished with a linear bractea. The whole plant is beset with branched down.

Walker's Schizopetalon. Fl. May, Aug. Clt. 1821. Pl. 1 to 2 feet.

Cult. This singular cruciferous plant should be raised in pots in a green-house in spring, when some of them may be planted out in the borders, others may be saved in the pots, and placed in an airy part of the green-house, where they will produce seeds, although sparingly. A mixture of loam, peat, and sand suits it best.

† *Additional cruciferous plants.*

1 Mathi'ola pa'tens (Presl. fl. sic. ex Spreng. syst. app. p. 242.) plant tomentose or hoary from stellate down; stem herbaceous, diffusely branched; leaves lanceolate, entire, tomentose; siliques terete, spreading, tomentose, and muricated with glands. ♂. H. Native of Sicily. This plant comes nearest to *Mathìola ánnua*, p. 151. no. 2. of this work.

Spreading-branched Stock. Fl. May, June. Pl. 1 foot.

2 Mathi'ola simplicica'ulis (Sweet, hort. brit. p. 17.) ♂. H. Native of? This is the *Brompton Stock*. It differs from *Mathíola incàna* or *Queen Stock* (to which it was formerly attached as a simple variety,) in the plant being a biennial not shrubby; it is simple, not branched. The flowers of this variety are either scarlet or white, single or double. It is a very ornamental plant, and is very generally cultivated for that purpose.

Brompton Stock or *Simple-stemmed* Stock. Fl. May, Aug. Clt.? Pl. 1 foot.

3 nastu'rtium? Sine'nse (D. C. syst. 2. p. 699) Native of China. Lepídium petræ'um, Lour. fl. cochin. ed. Willd. 2. p. 479. exclusive of the synonyms. Lepídium Chinénse, Stok. bot. mat. med. 3. p. 429. Stem annual, eight inches high, round, erect. Leaves broad, lanceolate, quite entire, small, pinnated. Stamens tetradynamous. Spikes of flowers simple, erect, long, terminal. Flowers yellow. Pods ovate, emarginate, compressed, 2-celled, many-seeded. Plant bitter and acrid to the taste.

Chinese Nasturtium. Pl. ½ foot.

4 nastu'rtium? rotundifòlium (Rafin. fl. lud. p. 86. no. 274.) Native of Louisiana. Cochleària, no. 4. Rob. voy. Louis. 3. p. 467. Habit of *A'rabis rhomboìdea*. Plant large. Leaves thick, juicy, and eatable, but insipid. Stem erect, branched. Leaves roundish, sinuately-lobed. Petals elongated, longer than the calyx.

Round-leaved Nasturtium. Pl. 2 feet.

5 A'rabis longisi'liqua (Presl. ex Spreng. syst. app. 242.) stem very simple, and is as well as the leaves hoary from forked down; radical leaves oblong-lanceolate, quite entire; pedicels appressed, much shorter than the calyx. ♃. H. Native of Sicily. Flowers white? This plant comes very near to *A'rabis collìna*, p. 165. no. 56. of this work.

Var. β, *A. purpuráscens* (Presl. l. c.) Flowers purplish.

Long-podded Wall-Cress. Pl. ½ foot.

6 pteroneu'rum Dalma'ticum (Vis. in bot. zeit. 1829.) plant smooth; stem diffuse, much branched; leaves pinnate, fleshy, glaucescent; leaflets obovate, stalked, 3-lobed, lower ones palmate; silique erect, smooth, crowned by the elongated terete style; seeds margined at the top. ⊙. H. Native of Dalmatia. Cardámine marítima, Portenschlag, p. 170, no. 48, of this work. This is considered by Visiani to be a true species of *Pteroneùrum*, in the calyx being spreading, in the silique being lanceolate, as well as in the funicle being dilated.

Dalmatian Pteroneurum. Fl. June. Pl. ½ foot.

7 farse'tia Dalma'tica (Vis. l. c.) is F. triquètra, D. C. see p. 175, no. 8. of this work. The branches are not triquetrous, but round. Visiani gives the following amended character. Plant covered with stellate down; stems suffruticose at the base; branches round, ascending; leaves obovate, tapering into the petiole and repand; style long, deciduous; stigma 2-lobed. ♃. H. Native of Dalmatia.

Dalmatian Farsetia. Fl. May, June. Pl. 1 foot.

8 Vesica'ria microca'rpa (Vis. fl. bot. zeit. no. 12. March 1829. p. 17.) plant herbaceous, covered with stellate down; stems erect, branched; leaves obovate, spatulate, entire, radical ones stalked; calyx equal, not gibbous; fructiferous corymbs crowded; pods globose, inflated, smooth, few-seeded; style permanent; seeds margined. ♃. H. Native of Dalmatia on mount Biokova. Flowers yellow.

Small-fruited Vesicaria. Fl. June, July. Pl. ½ foot.

9 lepi'dium pube'scens (Gusson. fl. sic. prod. ex Schlecht. Linnæa 4. p. 38, under *Thlàspi.*) ⊙. H. Native of Sicily. Very like *L. hírta*, p. 218. no. 12. of this work; but the plant is pubescent, not hairy, and the pods are oblong and emarginate, and with the style protruding beyond the notch.

Pubescent Mithridate Pepperwort. Pl. ½ foot.

10 Ibe'ris intege'rrima (Mor. elench. p. 4.) plant suffrutescent at the base, pubescent at the top; leaves oblong-spatulate, fleshy, quite entire, rather concave, uppermost ones ciliated; pods emarginate, racemosely-corymbose. ♄. H. Native of Sardinia. An intermediate plant between *I. Tenoreàna* and *I. Prúitii*, p. 194, no. 2 and 3, of this work.

Very-entire-leaved Candy Tuft. Fl. May. Pl. ½ foot.

11 biscute'lla inca'na (Tenore, prod. fl. nap. 1826.) stem woody at the base; pods smooth, somewhat undulated, scabrous in the disk from elevated tubercles; leaves hispid, hoary, oblong, unequally sinuate-toothed; teeth blunt. ♃. H. Native of Calabria. This plant differs from *B. saxátilis*, in the stems being more tufted and more woody at the base, as well as in the pods being undulated, and twice the size.

Hoary Buckler Mustard. Fl. May, July. Pl. 1 foot.

12 he'speris glutinòsa (Vis. in bot. zeit. Dec. 1829.) plant covered with viscid hairs; stems branched; radical leaves lyrately-pinnatifid, thickish; cauline ones broad-lanceolate, toothed at the base, acuminated and entire at the top, on very short petioles; pedicels racemose, shorter than the calyx, leaning almost to one side; claws of the petals twice the length of the calyx; pods clothed with viscid hairs, at length spreading and deflexed, somewhat torulose; seeds oblong-truncate. ♃. H. Native of Dalmatia. Colum. ecph. 2. p. 261.—Mor. oxon. p. 252. sect. 3. t. 10. f. 5. Flowers lilac. This species comes very near *H. laciniàta*, All. p. 202, no. 4, of this work.

Clammy Dame's violet. Fl. March, April. Pl. 2 to 3 feet.

CXI. STREPTA'NTHUS (from στρεπτος, *streptos*, twisted, and ανθος, *anthos*, a flower; twisted claws of petals.) Nutt. in journ. acad. nat. sc. philad. 5. p. 132. ann. 1825.

Lin. syst. *Tetradynàmia, Siliquòsa.* Calyx erect, coloured. Petals dilated, with channelled twisted claws. Glands none. Filaments awl-shaped, thickened at the base. Silique very long, angular, compressed. Seeds flat, marginate, disposed in one row. Cotyledons accumbent. An annual herb, with quite entire leaves, and purple flowers. Pods very long, tetragonal, 2-edged. This genus agrees in habit with *A'rabis*, but in the pods with *Turrìtis*.

1 S. macula'tus (Nutt. l. c. with a figure.) ⊙. H. Native of the Arkansa territory.

Spotted Streptanthus. Fl. May. Pl. 1 foot.

Cult. The seeds of this plant only require to be sown in the open border, and the plants afterwards treated as other hardy annuals.

CXII. SELE'NIA (from σεληνη, *selene*, the moon; shape of pods.) Nutt. in journ. acad. nat. sc. philad. 5. p. 132. ann. 1825.

Lin. syst. *Tetradynàmia, Siliculòsa.* Calyx coloured, equal at the base, spreading. Silicle large, many-seeded, elliptical, compressed, marginate, almost sessile; valves parallel, smaller than the dissepiment. Glands 10, by pairs between the sepals, and solitary emarginate between the shorter stamens and the pistil. An annual plant, with triquetrous stems; pinnatifid leaves and axillary golden flowers. Habit of *Brássica*, but with the fruit of *Lunària.* Radical leaves almost bipinnatifid.

1 S. au'rea (Nutt. l. c. with a figure.) ⊙. H. Native of Arkansa upon the banks of the river Pottoe.

Golden-flowered Selenia. Fl. March, April. Pl. 1 foot.

Cult. The seeds of this plant will only require to be sown

in the open border, and the plants afterwards treated as other hardy annuals.

ORDER XV. CAPPARI'DEÆ (plants agreeing with *Capparis* in many important characters.) Juss. gen. 242. ann. mus. 18. p. 474. D. C. prod. 1. p. 237.

Parts of flower usually imbricate in the bud. Sepals 4 (f. 52. *a*. f. 53. *a*.), seldom more, sometimes almost free, equal or unequal, sometimes connected at the base into a tube (f. 54. *a*.) with a variable limb. Petals 4 (f. 52. *b*. f. 53. *f*.), seldom more, cruciate, usually unguiculated (f. 52. *b*.) and unequal. Stamens almost perigynous, inserted at the bottom of the calyx (f. 52. *c*. f. 53. *d*.), rarely tetradynamous, usually disposed in a quaternary order, definite (f. 54. *d*.) or indefinite (f. 53. *e*. f. 52. *c*.). Torus hemispherical or elongated (f. 52. *d*. f. 54. *c*.), usually bearing glands. Stipe of ovary slender (f. 52. *d*. f. 54. *e*.), rising from the torus; the ovary is therefore stipitate (f. 52. *f*. f. 54. *e*.). Ovary composed of 2 or more closely-joined carpels. Style none (f. 53. *c*. f. 54. *e*.) or filiform. Fruit variable, siliquose (f. 54. *e*.). or baccate (f. 52. *f*.), 1-celled, but rarely 1-seeded, usually with 2 or more many-seeded placentas, in the dehiscent fruit these are intervalvular. Seeds usually kidney-shaped without albumen. Embryo incurved. Cotyledons leafy, flat, somewhat incumbent. Herbs, shrubs, or trees, either with or without stipulas, but when they are present they are in the form of spines. The leaves are alternate, simple, or palmately compound. The disposition of the flowers is variable. This order differs from *Crucíferæ* in the receptacle being hemispherical or elongated, as well as in the fruit being destitute of a dissepiment, and the seeds being without an umbilical cord, and in the very different disposition of the stamens. It differs from *Flacourtiàneæ* in the seeds never being inwrapped in a pulpy pellicle.

The plants contained in this order partake of the properties of *Crucíferæ*. The different kinds of *Capers* are reputed to be stimulating, antiscorbutic and aperient. The bark of the root of the common *Caper* passes for a diuretic medicine. Several species of the *Cleòmeæ* have an acrid taste, which has been compared to that of mustard. The root of *Polanísia gravèolens* is employed as a vermifuge in the United States, and the leaves of *P. dodecándra* produce an inflammation on the skin, whence they are used in Cochin-china as a sinapism. Most of the plants contained in this order have beautiful flowers.

The seeds of those plants belonging to tribe *Cleòmeæ* are easily introduced, in a living state, from any part of the world: but the seeds of those belonging to tribe *Cappàreæ* soon become rancid, therefore they are truly difficult to introduce in a vegetative state, and on that account very few of this tribe are to be seen in the gardens.

Synopsis of the Genera.

TRIBE I.

CLEO'MEÆ. *Fruit truly capsular, with membranous dehiscent valves. Herbs or sub-shrubs with compound leaves, usually clothed with glandular down.*

1 CLEOME'LLA. Calyx of 4-spreading sepals. Petals 4. Receptacle ovate-globose. Stamens 6, free. Silicle stipitate within the calyx, shorter than broad.

2 PERI'TOMA. Calyx cut round about at the base, 4-toothed at the apex. Petals 4. Receptacle small. Stamens 6, monadelphous at the base. Silique stipitate.

3 GYNANDRO'PSIS. Calyx of 4-spreading sepals. Petals 4. Receptacle elongated. Stamens 6, monadelphous around the torus, and free at the top. Silique stipitate.

4 CLEO'ME. Calyx of 4-spreading, nearly equal sepals. Petals 4. Receptacle somewhat hemispherical. Stamens 6, rarely 4, free. Silique stipitate or sessile.

5 POLANI'SIA. Calyx of 4-spreading sepals. Petals 4. Stamens 8-32, free. Receptacle small. Silique sessile or on a short stipe, terminated by a distinct style.

6 PHYSOSTE'MON. Calyx of 4 sepals. Petals 4. Stamens 6-8, unequal, free, inflated under the anthers. Receptacle marginate. Silique sessile.

7 CORYNA'NDRA. Calyx of 4 sepals. Petals 4. Stamens numerous; filaments clavated, and coloured at the top; anthers curved. Silique sessile, 2-valved.

TRIBE II.

CAPPA'REÆ. *Fruit rather fleshy, indehiscent* (f. 52. *f*.). *Shrubs and trees, rarely herbs, with simple or ternate leaves.*

8 CRATÆ'VA. Sepals 4. Petals 4, larger than the calyx. Stamens 8-28. Torus elongated or hemispherical. Berry stipitate, ovate-globose, pulpy inside.

9 RITCHIE'A. Calyx of 4 sepals, valvate in the bud. Petals 4, much longer than the calyx. Stamens 10-20, incurved. Torus elevated, glanduliferous. Berry stipitate, globose, crowned by a sessile stigma.

10 NIEBU'HRIA. Sepals 4, valvate in the bud. Petals wanting, or shorter than the calyx. Torus cylindrical, very short. Stamens indefinite. Berry stipitate, ovate or cylindrical.

11 BÓSCIA. Sepals 4. Petals none. Stamens 12-20, inserted in the short torus. Berry stipitate, globose, 1-seeded.

12 CA'DABA. Sepals 4. Petals 4 or wanting. Nectary strap-formed, emanating from the base of the sub-cylindrical torus. Stamens 4-5, monadelphous at the base. Berry stipitate, cylindrical.

13 SCHEPPE'RIA. Sepals 4, spreading. Petals 4. Torus elongated. Stamens 8, monadelphous around the torus, but free at the top. Nectary concave at the base of the torus. Silique fleshy, stipitate.

14 SODA'BA. Sepals 4, the superior one is large and concave. Petals 4. Stamens 8? Torus small. Ovary ovate, 4-furrowed, on a long stipe.

15 CA'PPARIS. Calyx 4-parted (f. 52. *a*.). Petals 4 (f. 52. *b*.). Torus small (f. 52. *e*.). Stamens numerous (f. 52. *c*.). Silique somewhat baccate, stipitate (f. 52. *f*.). Stipe long and slender (f. 52. *d*.).

16 STEPHA'NIA. Calyx campanulate, 2-lobed (f. 54. *a*.). Petals 4 (f. 54. *b*.). Torus small (f. 54. *c*.). Stamens 6 (f. 54. *d*.). Ovary oblong, stipitate (f. 54. *e*.).

17 MORISÒNIA. Calyx obovate, bifid. Petals 4. Torus small. Stamens 20, somewhat monadelphous at the base. Berry globose, stipitate.

18 TOVA'RIA. Calyx usually of 8 sepals, with an equal num-

ber of petals. Stamens the same number as the sepals, and alternating with them, inserted on the inside of a large disk or torus. Berry spherical, seated on the elevated disk, pulpy inside.

19 Thyla'chium. Calyx follicular, at length cut round about. Petals none. Stamens numerous, inserted in the short torus. Berry oblong, stipitate.

20 Hermu'poa. Calyx double, outer one tubular, inner one of 4 small sepals. Petals 4, linear. Stamens 6, very long. Berry oblong-cylindrical.

21 Mæ'rua. Calyx tubular, 4-parted, valvate in the bud, with a crown of petal-like scales in the throat. Petals none. Torus elongated. Stamens numerous, somewhat monadelphous at the top of the torus. Silique fleshy, stipitate.

22 A'rsis. Calyx of 5 coloured sepals. Petals 5. Stamens numerous; anthers 4-celled. Berry stipitate, 1-seeded.

Tribe I.

CLEO'MEÆ (plants agreeing in important characters with *Cleòme*.) D. C. prod. 1. p. 237.—Genus Cleome, Lin. Fruit truly capsular, with somewhat membranous opening valves.—Herbs or sub-shrubs. Leaves usually compound, seldom simple, covered with glandular hairs. Flowers usually disposed in terminal racemes.

I. CLEOME'LLA (a diminutive of *Cleòme*, which see.) D. C. prod. 1. p. 237.

Lin. syst. *Hexándria, Monogýnia.* Calyx of 4-spreading sepals. Petals 4. Torus ovate-globose. Stamens 6, free. Silicle stipitate within the calyx, shorter than broad.

1 C. Mexica'na (Moc. et Sesse. icon. fl. mex. ined. D. C. prod. 1. p. 337.) ♃. S. Native of Mexico. Leaves trifoliate, smooth. Flowers yellow.

Mexican Cleomella. Fl. July. Pl. 1 foot.

Cult. A rich light soil will suit this plant well, and cuttings will root freely under a hand-glass, but if it seed freely this will be unnecessary.

II. PERI'TOMA (from περιτομη, *peritome*, a cutting round about; base of calyx.) D. C. prod. 1. p. 237. Atalánta, Nutt. gen. amer. 2. p. 73. not of Corr.

Lin. syst. *Hexándria, Monogýnia.* Calyx cut round at the base, 4-toothed at the top. Petals 4. Torus small. Stamens 6, joined at the base. Silique oblong, stipitate within the calyx.

1 P. serrula'tum (D. C. prod. 1. p. 237.) ⊙. H. Cleòme serrulàta, Pursh, fl. amer. sept. 2. p. 441. Native of North America on the banks of the Missouri. Leaves ternate, smooth, leaflets lanceolate, finely serrulated. Racemes elongated. Bracteas linear. Flowers pale purple.

Serrulated-leaved Peritoma. Fl. Jul. Aug. Clt. 1823. Pl. 3 ft.

Cult. The seeds of this plant should be sown in a pot, which should be placed in a gentle hot-bed, and when the plants are of sufficient size, they should be planted out into the open border in a sheltered situation.

III. GYNANDRO'PSIS (from γυνη, *gyne*, a female, and ανηρ, ανδρος, *aner*, *andros*, a male, οψις, *opsis*, resemblance; because of the stamens appearing as if inserted on the top of the ovary). D. C. syst. 2. p. 237. Cleòmes, spec. Lin.

Lin. syst. *Monadélphia, Hexándria.* Calyx of 4 spreading sepals. Petals 4. Torus elongated. Stamens 6, joined together around the ovary, but free at the apex. Silique stipitate, within the calyx at the top of the torus.

The African species of this genus are readily distinguished, according to Mr. Brown, the great peculiarity of which consists in the petals not covering the stamina at any period. This mode of æstivation of the petals, he says, has never before been noticed, though it equally exists in *Cratæ'va* and *Resedàceæ*; to this mode he proposes to apply the term *aperta.*

§ 1. *Angiogònia. Petals imbricate in the bud and covering the stamina.*

1 G. sessilifo'lia (D. C. prod. 1. p. 237.) smooth; leaves all trifoliate, lower ones hardly stalked; leaflets oblong, entire. ⊙. H. Native of the West Indies in sandy barren places. Cleòme triphýlla, Lin. spec. 938. exclusive of the synonyms. Flowers whitish or flesh-coloured.

Sessile-leaved Gynandropsis. Fl. June, August. Clt. 1820. Pl. 1 to 2 feet.

2 G. triphy'lla (D. C. prod. 1. p. 237.) smoothish; leaves all trifoliate, floral ones sessile, the rest stalked; stalks of the lower leaves longer than the leaves themselves. ⊙. H. Native of the West Indies in dry sandy places. Cleòme triphylla, Lin. spec. 938. from Herm. lugd. 565. icon. Flowers white or flesh-coloured.

Three-leaved Gynandropsis. Fl. Ju. Aug. Clt. 1820. Pl. 1 to 2 feet.

3 G. palmi'tes (D. C. prod. 1. p. 238.) smoothish; leaves 5-7-foliate; leaflets entire; stalks of the leaflets somewhat connected at the base by a membrane. ⊙. S. Native of Cayenne. C. palmìtes, Spreng. syst. 2. p. 122. Flowers perhaps white.

Palmate-leaved Gynandropsis. Pl. 1 foot.

4 G. brachyca'rpa (D. C. syst. 1. p. 238.) leaves ternate or quinate; leaflets entire; pods smooth, oval-oblong, shorter than the stipe. ⊙? H. Native of Peru. Cleòme brachycárpa, Vahl. Flowers white or pink.

Short-podded Gynandropsis. Pl. 1 foot.

5 G. hispi'dula (D. C. prod. 1. p. 238.) hispid; leaves quinate; leaflets entire; pods rather hispid, shorter than their stipe. ⊙? H. Native of Peru. Cleòme hirsùta, Ruiz et. Pav. Flowers white or rather pinkish.

Hispid Gynandropsis. Pl. 1 foot.

6 G. candela'brum (Sweet, hort. brit. p. 468.) pubescent; leaves quinate; leaflets broad-ovate, acuminated; floral leaves ternate, sessile; siliques scabrous, longer than the stipe. ⊙. H. Native of South America. Petals of a whitish-pink colour. Stamens purple; anthers yellow. Cleòme, Sims, bot. mag. 2656.

Chandelier Gynandropsis. Fl. July. Clt. 1824. Pl. 1 to 2 ft.

7 G. specio'sa (D. C. prod. 1. p. 238.) plant somewhat velvety at the top; leaves 5-7-foliate; leaflets somewhat serrulated, oblong, acuminated. ♃? S. Native of New Granada near Carthagena. Cleòme speciòsa, H. B. et Kunth, nov. spec. amer. 5. p. 84. t. 436. Flowers violet.

Showy Gynandropsis. Fl. Ju. Aug. Clt. 1818. Pl. 2 feet.

8 G. pulche'lla (Lindl. in hort. trans. lond. 6. p. 65.) rather pilose; lower leaves quinate, upper ones ternate; leaflets entire; silique oval, smooth; seeds kidney-shaped, tuberculated. ⊙. H. Native of Maranham. Leaves smooth, with hairy petioles. Flowers small. Petals white, with purplish claws.

Neat Gynandropsis. Fl. June, Jul. Clt. 1825. Pl. ½ foot.

9 G. affi'nis (Blum. bijdr. fl. ind. ned. ex Schlecht. Linnæa. 1. p. 644.) plant covered with glandular hairs; lower and floral leaves trifoliate, middle ones with 5 leaflets; leaflets obovate, quite entire, but ciliated, with glandular hairs. ⊙. H. Native of Java. Flowers white.

Allied Gynandropsis. Fl. July. Pl. 1 to 2 feet.

§ 2. *Gymnogònia. Petals open in the bud, never covering the stamina at any period.*

10 G. pentaphy'lla (D. C. prod. 1. p. 238.) smoothish;

leaves on the middle of the stem with 5 leaflets, the lowest and floral ones with 3 leaflets; leaflets entire or somewhat serrulated. ⊙. H. Native of tropical Africa in sandy places near the sea. Cleòme pentaphýlla, Lin. spec. 938. Sims, bot. mag. t. 1681. Perhaps this species grows spontaneous in South America and Egypt as well as India. Flowers white or flesh-coloured, with pink stamens and brown anthers.

Five-leaved Gynandropsis. Fl. Ju. Aug. Clt. 1640. Pl. 1 ft.

11 G. DENTICULA'TA (D. C. prod. 1. p. 238.) smoothish; lowest leaves with 7 leaflets, middle ones with 5 leaflets; upper ones ternate; leaflets serrulated. ⊙. H. Native of Angola on the west coast of Africa. Flowers white, tinged with pink. The stamens are pink.

Denticulated-leaved Gynandropsis. Fl. Ju. Aug. Pl. 1 to 2 ft.

12 G. HETERO'TRICHA (D. C. prod. 1. p. 238.) covered with variable hairs, some of which are elongated, others sessile and glandular; leaves ternate or quinate; leaflets almost entire. ⊙. H. Native of the Cape of Good Hope. Cleòme heterótricha, Burch. trav. 1. p. 537. cat. no. 2011. Flowers white.

Variable-haired Gynandropsis. Pl. 1 foot.

Cult. The seeds of these plants should be sown on a hot-bed, in the month of March; and when the plants have attained a sufficient size, which will be in May, they should be planted out into the open ground, in a warm sheltered situation, where they will flower and seed, if the summer proves warm. But in order to secure seeds, a plant or two of each kind should be planted separately, in pots, in a mixture of sand and loam, and placed in the green-house.

IV. CLEO'ME (from κλειω, *kleio*, to shut, in allusion to the parts of the flower; a name adopted by Linnæus from Theodosius). D. C. prod. 1. p. 238. Cleòme, spec. Lin.

LIN. SYST. *Tetra-Hexándria, Monogýnia.* Calyx of 4, spreading, almost equal sepals. Petals 4. Torus somewhat hemispherical. Stamens 6, rarely 4. Silique dehiscent, stipitate, or sessile within the calyx.

SECT. I. PEDICELLA'RIA (from *pedicéllus*, a pedicle; fruit on long stalks.) D. C. prod. 1. p. 238. Torus fleshy, somewhat globose. Stipe of ovary elongated.

1 C. GIGANTE'A (Lin. mant. 430.) shrubby, velvety-pubescent, somewhat clammy; leaves 7-foliate, with 30 or 40 veins on each side of each leaflet. ♄. S. Native of South America. Cleòme viridiflòra, Schreb. nov. act. nat. cur. 4. p. 136. t. 3. Flowers whitish-green, with pinkish filaments and yellow anthers. This is a beautiful plant, but has a strong disagreeable smell and a caustic taste.

Giant Cleome. Fl. June, July. Clt. 1774. Sh. 6 to 12 feet.

2 C. ARBO'REA (H. B. et Kunth, nov. spec. 5. p. 86.) shrubby, velvety-pubescent, somewhat clammy; leaflets 7, with 20 veins on each side of each leaflet. ♄. S. Native of Caraccas. Perhaps sufficiently distinct from Cleòme gigantèa. Flowers white or greenish.

Tree Cleome. Fl. June, July. Clt. 1817. Sh. 6 to 8 feet.

3 C. GLANDULO'SA (Ruiz et Pav.) somewhat arborescent, hispid with thick hairs which bear glands at their apex; leaves with 7-9 leaflets, upper and floral ones simple, ovate-cordate; ovary covered with glandular hairs. ♄. S. Native of Peru. Fruit unknown. Silique the length of the stipe.

Glandular Cleome. Fl. June, July. Shrub 2 feet.

4 C. CARDINA'LIS (D. C. prod. 1. p. 238.) herbaceous, smooth; leaves 5-foliate, floral ones sessile and leaflets oval-lanceolate. ⊙. S. Native of Mexico, where it is called *Borla di Cardinal* (icon. fl. mexic. ined.). Flowers reddish?

Cardinal Cleome. Fl. Jul. Aug. Clt. 1823. Pl. 2 feet.

5 C. HEPTAPHY'LLA (Lin. spec. 987.) herbaceous, prickly, covered with clammy hairs; leaves with 7 leaflets, floral ones simple, cordate-roundish; silique longer than the stipe, covered with clammy pubescence. ⊙. S. Native of both Indies. Perhaps several species are confused under this name, and it is very probable that the South American plant differs from the East India plant. Flowers white or flesh-coloured, with purplish stamens and brownish anthers.

Seven-leaved Cleome. Fl. Jul. Aug. Clt. 1817. Pl. 1 to 3 ft.

6 C. ANO'MALA (H. B. et Kunth, nov. spec. 5. p. 85.) herbaceous, unarmed, velvety-pubescent; leaves with 7 leaflets, floral ones simple, round, and somewhat cordate; siliques elliptical, muricated. ⊙? S. Native of South America. Valves of fruit very convex. Flowers white.

Anomalous Cleome. Pl. 1 foot.

7 C. CHILE'NSIS (D. C. prod. 1. p. 238.) herbaceous, unarmed, smooth; leaves with 7 leaflets, floral ones with 3-5 leaflets; sepals permanent; siliques pendulous, smoothish, scarcely longer than the stipe. ⊙. H. Native of Chili. Flowers white, or pinkish.

Var. α, glàbra (D. C. prod. l. c.) leaves with 7 leaflets, smooth.

Var. β, pubéscens (D. C. prod. 1. p. 239.) leaves with 3-5 leaflets, pubescent.

Chili Cleome. Pl. 1 foot.

8 C. LO'NGIPES (D. C. prod. 1. p. 239.) herbaceous, prickly, smooth; leaves ternate; silique cylindrical, slender, one half shorter than the stipe, which is about a foot long. Native of Guayaquil. Flowers white.

Long-footed-fruited Cleome. Pl. 2 feet.

9 C. SPINO'SA (Lin. spec. 939.) herbaceous, prickly, pubescent; leaves with 5-7 leaflets, smooth; floral ones simple, stalked, ovate-cordate; silique smooth, longer than the stipe. ♂. S. Native of South America. Marcgr. bras. p. 34. icon. Flowers with white petals, purple filaments, and yellow anthers.

Spinose Cleome. Fl. Ju. Jul. Clt. 1731. Pl. 2 to 4 feet.

10 C. PU'NGENS (Willd. hort. berl. t. 18.) herbaceous, prickly, covered with clammy pubescence; leaves with 5-7 leaflets, smooth, floral ones simple, sessile, cordate; silique smooth, shorter than the stipe. ♂. S. Native of South America and the West India islands. Cleòme púngens, H. B. et Kunth, nov. spec. 5. p. 85. C. spinòsa, Sims. bot. mag. t. 1640. Flowers flesh-coloured, or white.

Pungent Cleome. Fl. Juné, July. Clt. 1812. Pl. 1 to 2 ft.

11 C. PUBE'SCENS (Sims, bot. mag. t. 1857.) herbaceous, unarmed, pubescent; leaves with 5-7 leaflets, floral ones simple, cordate; silique length of stipe. ⊙. H. Native of? Flowers white, with purple stamens and stipe.

Pubescent Cleome. Fl. Jul. Clt. 1815. Pl. 1½ foot.

12 C. PSORALEÆFO'LIA (D. C. prod. 1. p. 238.) herbaceous, prickly, pubescent; leaves trifoliate; petioles beset with glandular hairs; floral leaves ovate, stalked; silique at last smooth, longer than the stipe. ⊙? S. Native of Brasil. C. Brasiliàris, Weinm. ex Spreng. syst. 2. p. 121. Flowers white?

Psoralea-leaved Cleome. Pl. 1 to 2 feet.

13 C. LATIFO'LIA (Vahl. ined. D. C. prod. 1. p. 239.) herbaceous, unarmed, smooth; lower leaves simple, middle ones ternate, stalked; leaflets oval, acuminated; floral leaves simple, sessile, ovate, one half shorter than the pedicel; stipe length of pedicel. ⊙? S. Native of Guiana. Flowers white or red.

Broad-leaved Cleome. Pl. 1 to 2 feet.

14 C. RO'SEA (Vahl. ined. D. C. prod. 1. p. 239.) herbaceous, unarmed, smooth; leaflets quinate, lower and floral ones ternate, uppermost ones ovate, sessile; silique smooth, length of stipe. ⊙. S. Native of Rio Janeiro. Flowers beautiful rose-coloured. Stem erect, branched. Lindl. bot. reg. 960.

Rose-coloured-flowered Cleome. Fl. Ju. Jul. Clt. 1824. Pl. 1½ ft.

15 C. SPECIOSI'SSIMA (Deppe in litt. Lindl. bot. reg. 1312.) herbaceous, unarmed; leaflets 5-7, lanceolate, acuminated,

pilose; bracteas ovate; petals length of pedicels; pedicel of fruit long. ⊙. H. Native of Mexico about Xalapa. Like *C. rósea*, but differs in the leaves being pilose, not smooth, and they are never trifoliate; the flowers are larger and the pedicels shorter. Flowers beautiful rose-coloured.

Very shewy Cleome. Fl. Jul. Aug. Clt. 1829. Pl. 1½ foot.

16 C. purpu'rea (D. C. prod. 1. p. 238.) herbaceous, unarmed, smooth; leaves trifoliate, floral and upper ones simple, ciliated; ovary smooth, twice the length of the stipe. ⊙. S. Native of Peru. Flowers purplish. Perhaps this plant belongs to the following section.

Purple-flowered Cleome. Pl. 1½ foot.

17 C. nummula'ria (D. C. prod. 1. p. 239.) herbaceous, unarmed, pubescent; upper leaves simple, stalked, orbicular; ovary covered with glandular pubescence; silique at length smooth, longer than the stipe. Native of Brasil. Flowers white or reddish. The lower part of the plant is unknown.

Moneywort-leaved Cleome. Pl. 1 to 2 feet.

Sect. II. Siliqua'ria (from *siliqua*, a long pod; pods long). D. C. prod. 1. p. 239. Torus small. Stipe of ovary short or wanting. All the species that should be included in this section are said by Mr. Brown to be indigenous to north Africa and middle Asia.

§ 1. *Leaves simple.*

18 C. monophy'lla (Lin. spec. 940.) herbaceous, pubescent; leaves simple, stalked, lanceolate, blunt at the base; silique puberulous, almost sessile. ⊙. H. Native of Malabar and Ceylon. Flowers yellow, anthers greenish-blue.

Var. α, *Malabárica* (D. C. l. c.). Rheed. hort. mal. 9. t. 34.

Var. β, *Zeylánica* (D. C. l. c.). Burm. zeyl. t. 100. f. 2.

One-leaved Cleome. Fl. Ju. Jul. Clt. 1759. Pl. ½ to 1 ft.

19 C. corda'ta (Burch. cat. n. 2374.) sub-herbaceous, pubescent; leaves simple, on short stalks, lanceolate, cordate at the base; silique puberulous, almost sessile. ⊙? H. Native of the Cape of Good Hope. Flowers yellow; anthers pale. Perhaps sufficiently distinct from *Cleòme monophýlla*.

Cordate-leaved Cleome. Fl. June, July. Pl. 1 foot.

20 C. glau'ca (D. C. prod. 1. p. 239.) herbaceous, smooth, glaucous; leaves stalked, ovate, floral ones elliptical; siliques pendulous, smooth, on short stipes; seeds hairy. ♃. G. Native of Arabia. Flowers yellow.

Glaucous Cleome. Fl. June, July. Pl. 1 foot.

21 C. glauce'scens (D. C. prod. 1. p. 239.) herbaceous, smooth, glaucous; leaves stalked, ovate, floral ones elliptical; siliques pendulous, striated, on short stipes; seeds smooth. ♃. H. Native of Syria between Bagdad and Mossul. Flowers yellowish.

Glaucescent Cleome. Pl. ½ to 1 foot.

22 C. quinquene'rvia (D. C. prod. 1. p. 239.) herbaceous, rather pubescent, glaucous; leaves stalked, cordate, 5-nerved, floral ones very small; silique sessile, oval-oblong, glandular, rough; seeds smooth. ⊙? H. Native of Persia. Flowers yellow.

Five-nerved-leaved Cleome. Pl. 1 foot.

23 C. scapo'sa (D. C. prod. 1. p. 239.) herbaceous; leaves almost radical, stalked, roundish-ovate, strigosely-pilose; scape naked, rough; bracteas small; siliques erect, sessile, smooth. ♃? H. Native of Egypt. Stamens 4? Habit of a species of *Cardámine*. Flowers yellow.

Scaped Cleome. Pl. ½ foot.

24 C. droserifo'lia (Del. fl. eg. t. 36. f. 2.) shrubby, strigosely-pilose; leaves stalked, obovately-orbicular, 3-nerved, beset with glandular hairs; siliques sessile, oblong, hispid with hairs which are glandular at top. ♄. G. Native of Egypt. Rorídula, Forsk. æg. 35. Rórida, Ræm. et Schulz. syst. 3. p. 13. Flowers tetrandrous, yellow, with a violet base.

Sun-dew-leaved Cleome. Pl. ½ foot.

25 C. raphanoi'des (D. C. syst. 2. p. 662.) herbaceous, somewhat hispid at the top; leaves lanceolate-linear, acuminated, runcinate at the base; silique almost sessile, terete, smooth, pointed with the style. ⊙? S. Native of Guinea. Ráphanus pilòsus, Willd. spec. 3. p. 562. Cleòme longifòlia, Vahl. herb. Wormskióldia heterophýlla, Thonn. in herb. Vahl. Hairs long, rusty. Flowers yellow.

Radish-like Cleome. Fl. June, July. Pl. 2 foot.

26 C. Guiane'nsis (Aubl. guian. 2. t. 273.) herbaceous, smooth, erect; leaves linear, floral ones longer than the pedicels; siliques almost sessile, smooth. ⊙. S. Native of Guiana. Flowers yellow; petals oblong-lanceolate.

Guiana Cleome. Pl. 1 foot.

27 C. procu'mbens (Jacq. amer. t. 120.) herbaceous, smooth, procumbent; leaves lanceolate-linear, floral ones a little shorter than the pedicel; siliques sessile, terete, somewhat torulose. ♃. S. Native of the West India islands. Jacq. amer. t. 120. Sloane, jam. t. 123. Flowers dark yellow; anthers blackish.

Procumbent Cleome. Fl. June, July. Clt. 1798. Pl. ½ ft.

§ 2. *Leaves with 3-5-7 leaflets.*

28 C. tene'lla (Lin. fil. suppl. 300.) herbaceous, smooth; leaves trifoliate; leaflets linear, twice the length of the petiole; flowers hexandrous; siliques slender, sessile. ⊙. S. Native of the East Indies. Leaflets 4 or 5 lines long. Flowers yellow.

Slender-podded Cleome. Pl. ½ foot.

29 C. tetra'ndra (Banks herb.) herbaceous, smooth; leaves trifoliate; leaflets linear, 3-times longer than the petiole; flowers tetrandrous; siliques sessile, slender. ⊙. H. Native of New Holland. Leaflets 2 or 3 lines long. Flowers yellow?

Tetrandrous Cleome. Pl. 1 foot.

30 C. multicau'lis (Moc. et Sesse, fl. mex. ined.) herbaceous, smooth; leaves all sessile, trifoliate; leaflets oblong-linear, bluntish; flowers hexandrous; siliques on very short stipes. ⊙. H. Native of Mexico. Flowers yellow.

Many-stemmed Cleome. Pl. 1 foot.

31 C. viola'cea (Lin. spec. 940.) herbaceous, clothed with glandular pubescence; leaves trifoliate; leaflets and upper leaves linear; siliques sessile, puberulous, deflexed, linear, acuminated with the short style. ⊙. H. Native of Portugal in sandy places. Schkuhr. handb. t. 189. f. b. exclusive of the synonym of Gært. Flowers violaceous or purple, and spotted with yellow.

Violaceous-flowered Cleome. Fl. Ju. Jul. Clt. 1776. Pl. 1 ft.

32 C. defle'xa (D. C. prod. 1. p. 240.) herbaceous, covered with glandular pubescence; leaves trifoliate; leaflets and upper leaves oblong-linear; siliques sessile, deflexed, smooth, acuminated. ⊙. S. Native of Peru or Portugal. Very like *C. violàcea* and probably only a variety of it. Flowers purplish.

Deflexed-podded Cleome. Pl. 1 foot.

33 C. Dillenia'na (D. C. prod. 1. p. 240.) herbaceous, covered with glandular pubescence; leaves trifoliate; leaflets oblong-linear, length of petiole; siliques oblong-linear, almost sessile, deflexed, pubescent, pointed with the style. ⊙. H. Native of the Levant. Dill. elth. t. 266. C. ornithopodioìdes of authors, exclusive of the synonym of Buxbaum. Flowers small, pale-yellow, with saffron-coloured anthers.

Dillenius's Cleome. Fl. Ju. Jul. Clt. 1732. Pl. 1 to 2 ft.

34 C. Ara'bica (Lin. spec. 939.) herbaceous, covered with glandular pubescence; leaves trifoliate; leaflets oblong; siliques oblong, deflexed, almost sessile, puberulous; seeds hairy. ⊙. H. Native of sandy places from Arabia to Mauritania. Lin. fil. dec. t. 8. Siliquària glandulòsa, Forsk. descr. 78. Flowers white with yellow veins, and tinged with purple at the top. Filaments yellow.

Arabian Cleome. Fl. Ju. Jul. Clt. 1794. Pl. 1 to 2 feet.

35 C. Ibe'rica (D. C. prod. 1. p. 240.) herbaceous, covered with glandular pubescence; leaves trifoliate, on short petioles; siliques on short stipes, puberulous, somewhat pendulous, torulose, scarcely longer than the pedicels of the flowers. ⊙. H. Native of Iberia about Tiflis. Cleòme ornithopodioìdes Ibérica, Bieb. fl. taur. 2. p. 130. Flowers yellowish.

Iberian Cleome. Fl. Ju. Jul. Clt. 1820. Pl. ½ to 1 foot.

36 C. virga'ta (Stev. in litt.) herbaceous, covered with glandular pubescence; leaves trifoliate, on short petioles; leaflets oblong-linear; siliques on short stipes, puberulous, somewhat pendulous, torulose, three times longer than the pedicels. ⊙. H. Native of the north of Persia. Buxb. cent. 1. t. 9. f. 2. Flowers yellowish, with saffron anthers.

Twiggy Cleome. Fl. June, July. Clt. 1820. Pl. 1 foot.

37 C. brachyca'rpa (Vahl. ined.) suffruticose; younger plants glandular, adult ones smooth; leaves trifoliate, on short petioles; leaflets oval-oblong, thick; siliques sessile, ovate, terete, bearing the style. ♃. F. Native of Arabia. Cleòme ornithopodioìdes, Forsk. fl. arab. no. 402. Flowers yellowish.

Short-podded Cleome. Pl. 1 foot.

38 C. foliolo'sa (D. C. prod. 1. p. 240.) herbaceous, smooth, glaucous; leaves almost sessile, trifoliate; leaflets and upper leaves almost orbicular; siliques almost sessile, oblong-linear, beset with glandular hairs. ⊙. H. Native of Persia. Flowers whitish, or rather yellowish.

Leafy Cleome. Pl. 1 foot.

39 C. cane'scens (Stev. ined.) herbaceous, glaucescent, somewhat strigosely-pubescent; leaves 3-4-foliate; leaflets and upper leaves oblong-linear; siliques stipitate, puberulous, erectish, torulose, equal in length with the pedicels of flowers. ⊙. H. Native of southern Tauria. Flowers yellowish.

Canescent Cleome. Pl. 1 foot.

40 C. parviflòra (R. Br. in Salt's abyss. 65.) herbaceous, covered with glandular pubescence; leaves 4-foliate; leaflets and upper leaves elliptical-ovate; siliques sessile, oblong, covered with glandular pubescence, bearing the style, somewhat shorter than the pedicels. ⊙. H. Native of Abyssinia. Flowers yellowish. Petioles as well as nerves prickly.

Small-flowered Cleome. Fl. June, July. Pl. 1 foot.

41 C. a'spera (Kœn. ined. et D. C. prod. 1. p. 241.) herbaceous, clothed with rough hairs; leaves trifoliate; leaflets oblong; siliques sessile, terete, smooth, acuminated with the style. ⊙. H. Native of Coromandel. Habit of *Polanísia felìna*, but the flowers are hexandrous. Flowers yellowish.

Rough Cleome. Pl. 1 foot.

42 C. fla'va (Banks, herb. et D. C. prod. 1. p. 241.) herbaceous, covered with glandular pubescence, somewhat glaucous; lower leaves quinate; upper ones ternate; leaflets oblong; siliques sessile, striated, clothed with glandular pubescence. ⊙. H. Native of New Holland. Flowers yellow.

Yellow-flowered Cleome. Pl. 1 foot.

43 C. rutidospe'rma (D. C. prod. 1. p. 241.) herbaceous, smooth; leaves all trifoliate; leaflets oval-oblong; siliques smooth, stipitate, elongated, pointed. ⊙. H. Native of Tobago? Habit of *Gynandrópsis triphýlla*, but the torus is not elongated. Flowers whitish.

Rough-seeded Cleome. Pl. 1 foot.

44 C. poly'gama (D. C. prod. 1. p. 241.) herbaceous, smooth; leaves stalked, lower ones simple, the rest trifoliate; leaflets ovate-lanceolate, acuminated, somewhat serrulated; siliques almost sessile, terete, smooth. ⊙. S. Native of the West India Islands. Flowers white, with purple stamens; anthers yellow.

Var. α, *C. polýgama*, Lin. spec. 939.—Sloane, jam. t. 124. f. 1.

Var. β, *C. serràta*, Lin. spec. 939. Jacq. amer. ed. pict. t. 262. f. 73. a leaf. Flowers white.

Polygamous Cleome. Fl. June, July. Clt. 1824. Pl. 1 to 2 ft.

45 C. aculea'ta (Lin. syst. 3. p. 232.) herbaceous, smooth; stipulas spinescent; leaves trifoliate, floral ones ovate; siliques somewhat stipitate, terete, torulose, smooth. ⊙. S. Native of South America, in sandy places. Flowers white.

Prickly-stipuled Cleome. Fl. July. Clt. 1817. Pl. 1 to 2 ft.

46 C. Houstòni (R. Br. in hort. kew. ed. 2. vol. 4. p. 131.) herbaceous, clothed with glandular down; stipulas and petioles spinescent; leaves ternate or quinate; floral ones oval-oblong; siliques on short stipes, clothed with glandular down. ⊙. H. Native of Jamaica. Mart. dec. t. 45. Flowers white.

Houston's Cleome. Fl. Jul. Aug. Clt. 1730. Pl. 1 to 1½ foot.

47 C. Humbo'ldtii (D. C. prod. 1. p. 141.) herbaceous, smooth; petioles long, prickly; leaves ternate or quinate, floral ones ovate, on short stalks, shorter than the pedicels; siliques stipitate, smooth, pointed with the style. Native of South America. Cleòme parviflòra, Humb. Bonpl. and Kth. nov. gen. 5. p. 83. not of R. Br. Flowers white.

Humboldt's Cleome. Fl. Ju. July. Pl. 1 to 1½ foot.

48 C. diffu'sa (Banks, herb. et. D. C. prod. 1. p. 241.) herbaceous, smoothish, diffuse; stipulas spinescent; leaves trifoliate, floral ones ovate, shorter than the pedicels; siliques oblong-linear, 6-times longer than the stipe. ⊙. S. Native about Rio Janeiro, in Brazil. Flowers white.

Diffuse Cleome. Fl. Ju. Jul. Clt. 1823. Pl. 1 foot long.

49 C. affi'nis (D. C. prod. 1. p. 241.) herbaceous, smoothish, diffuse, unarmed; leaves trifoliate, floral ones ovate, shorter than the pedicels; siliques oblong-linear, 10-times longer than the stipe. ⊙. S. Native of Brazil, at Rio Janeiro. Very like *C. diffùsa*. Flowers whitish.

Allied Cleome. Fl. Ju. Jul. Pl. 1 foot.

50 C. rube'lla (Burch. cat. no. 2025. trav. 1. p. 543.) herbaceous, covered with glandular pubescence; leaves with 5-linear, smooth, glaucous leaflets; siliques sessile, smooth, pubescent. ⊙. H. Native of the Cape of Good Hope. Flowers reddish.

Reddish-flowered Cleome. Pl. 1 foot.

51 C. angustifo'lia (Forsk. ægyp. p. 120.) herbaceous, smooth, dotted at the top; lower leaves with 7 leaflets, upper ones trifoliate; leaflets linear filiform; siliques stipitate, pendulous. ⊙. H. Native of Arabia Felix. Cleòme filifòlia, Vahl. symb. 1. p. 48. Flowers with yellow petals, and violet and yellow anthers and filaments.

Narrow-leaved Cleome. Pl. 1 foot.

† *Species not sufficiently known.*

52 C. parado'xa (R. Br. in Salt's abyss. p. 65.) suffruticose at the base, smooth; herbaceous at the top and scabrous with glandular hairs; leaves ternate, or quinate; leaflets glaucous, oblong-linear, much shorter than the muricated petiole. ♄. S. Native of Abyssinia. Flowers whitish?

Paradoxical Cleome. Fl. June, July. Pl. 1 foot.

53 C. cuneifo'lia (Muhl. from Nut. gen. amer. 2. p. 73.) herbaceous, smooth; leaves simple, cuneated, retuse; siliques stipitate. ⊙. H. Native of Georgia, in North America. Flowers white; filaments 6, long, capillary.

Wedge-leaved Cleome. Fl. June, July. Pl. 1 foot.

54 C? arbòrea (Schrad in Goett. anz. 1821, p. 707.) unarmed, polyandrous; stamens seated near the base of the stipe of the ovary; leaves ovate, acuminated. ♄. S. Native of Paraiba, in Brasil. A tree, with small yellow flowers. Perhaps a species of *Polanísia*.

Tree Cleome. Tree 30 feet.

Cult. The shrubby species of *Cleòme* thrive best in a rich light soil, and ripened cuttings root freely under a hand-glass, in a moderate heat; but as most of the species seed freely, this will be

unnecessary. The seeds of the annual species require to be sown on a hot-bed frame, early in spring; and when the plants are of sufficient size they should be planted out into the open border, but this should never be done before the middle of May. The biennial species require to be kept in the stove; cuttings of these will strike root freely under a hand-glass, in a moderate heat.

V. POLANI'SIA (*πολυ, poly,* many, *ανισος, anisos,* unequal; stamens numerous and unequal.) Raf. journ. phys. aout. 1819. p. 98. D. C. prod. 1. p. 242.

Lin. syst. *Octo-Polyándria, Monogýnia.* Calyx 4-sepalled, spreading. Petals 4. Stamens 8-32. Torus small. Silique sessile within the calyx, or scarcely stipitate, terminated by a distinct style. Annual herbs with the habit of *Cleòme.*

Sect. I. Brachy'styla (from *βραχυς, brachys,* short, and *στυλος, stylos,* a style; because of the style being shorter than the ovary.) D. C. prod. 1. p. 242. Style shorter than the ovary. This section, according to Mr. Brown, includes in addition to the species from which the genus was formed, at least two sets of plants having very little affinity with each other, or with the original species, whose only congener is *P. uniglandulòsa.*

1 P. dia'nthera (D. C. syst. 1. p. 242.) smooth, somewhat prickly; leaflets 7, linear-filiform; stamens 8, 6 sterile, and 2 bearing anthers; silique stipitate, pendulous. ⊙. H. Native of the Cape of Good Hope. Cleòme diándra, Burch. trav. 1. p. 548. cat. no. 2103. Flowers red.

Two-anthered Polanisia. Fl. July, Aug. Pl. 1½ foot.

2 P. chelidònia (D. C. prod. 1. p. 242.) pilosely-hispid; leaflets 7-9, obovately-cuneated; stamens 24-32; silique sessile —? Native of the East Indies. Cleòme chelidònia, Lin. fil. suppl. 300. Flowers rose-coloured, somewhat like those of *Römèria hýbrida,* whence the specific name.

Celendine-like Polanisia. Fl. Jul. Nov. Clt. 1792. Pl. 1½ ft.

3 P. angula'ta (D. C. prod. 1. p. 242.) smooth; stem somewhat triquetrous; leaflets 5-7, oblong-linear; silique sessile, striated. ⊙. H. Native of Java. Flowers violet.

Angular-stemmed Polanisia. Fl. Ju. July. Pl. 1½ foot.

4 P. oxyphy'lla (D. C. prod. 1. p. 242.) glandular and pilose; leaflets 3-7, elliptical-oblong; stamens 8-12; siliques on short stipes, striated, puberulous, pendulous. ⊙? H. Native of the Cape of Good Hope. Cleòme oxyphýlla, Burch. cat. no. 1887. Flowers yellow.

Sharp-leaved Polanisia. Fl. July, Sep. Pl. 1½ foot.

5 P. grave'olens (Rafin. journ. phys. aout. 1819. p. 98.) plant beset with glandular hairs; leaves trifoliate; leaflets elliptical-oblong; stamens 8-12; siliques oblong, narrowed at the base, glandularly-muricated, pubescent. ⊙. H. Native of North America. Cleòme dodecándra, var. Canadénsis, Lin. spec. 939. Bart. fl. amer. t. 22.—Corn. can. 131. icon. Flowers small, pinkish. This plant is employed as a vermifuge.

Strong-scented Polanisia. Fl. July, Sep. Clt. —? Pl. 2 feet.

6 P. viscòsa (D. C. prod. 1. p. 242.) plant covered with glandular hairs; leaflets 3-5, obovately-cuneate or oblong; stamens 8-20; siliques oblong, sessile, striated, covered with glandular hairs. ⊙. H. Native of the East Indies. Flowers small, yellow.

Var. α, Cleòme viscòsa, Lin. spec. 938.—Rheed. mal. 9. t. 23.

Var. β, Cleòme icosándra, Lin. spec. 938.—Burm. zeyl. t. 99. This plant has an acrid taste something like mustard, and is eaten by the natives among other herbs as a salad.

Clammy Polanisia. Fl. July, Sep. Clt. 1730. Pl. 2 feet.

7 P. dodeca'ndra (D. C. prod. 1. p. 242.) puberulously-scabrous; leaves trifoliate; leaflets smooth, elliptical-lanceolate, somewhat serrulated; stamens 8-12; siliques sessile, narrowed at the base, smooth. ⊙. H. Native of the East Indies. Cleòme dodecándra, Lin. spec. 939. exclusive of the synonym of Sloane. —Burm. zeyl. t. 100. f. 1. Flowers with white petals and a purplish calyx.

Dodecandrous Polanisia. Fl. July, Sep. Clt. 1795. Pl. 1 ft.

8 P. feli'na (D. C. prod. 1. p. 242.) strigose; leaves almost radical, trifoliate; leaflets wedge-shaped; stamens 28-32; siliques almost sessile, smooth. ⊙? H. Native of the East Indies. Cleòme felìna, Lin. fil. suppl. 300. Flowers small, red. The leaves are rough and pointed at the end, which has been likened to the roughness of a cat's tongue, whence the specific name.

Cat-tongue-leaved Polanisia. Fl. June, Sept. Pl. 1½ foot.

Sect. II. Styla'ria (from *στυλος, stylos,* a style; because of the style being longer than the ovary.) D. C. prod. 1. p. 242. Style much longer than the ovary.

9 P. uniglandulòsa (D. C. prod. 1. p. 242.) plant covered with glandular pubescence; leaves trifoliate; leaflets and bracteas oblong-lanceolate; stamens 8-16; siliques sessile, somewhat puberulous. ⊙. H. Native of Mexico at Acapulco. Cleòme uniglandulòsa, Cav. icon. 4. t. 306. Flowers white, with rose-coloured filaments, and yellow anthers.

One-glanded Polanisia. Fl. July, Sept. Clt. 1823. Pl. 1½ ft.

Cult. The species of *Polanísia* being all annual plants from tropical countries, the seeds require to be sown in a hot-bed frame, and when the plants are of sufficient size they should be planted out into the open border in a sheltered situation, but this should not be done before the middle of May. A plant of each should be kept in pots and placed in the green-house during summer, in order to secure seeds for next year's sowing, in case the summer should prove unfavourable for ripening in the open border. This may be said of all the annual plants belonging to *Capparídeæ.*

VI. PHYSOSTE'MON (from *φυσα, physa,* a bladder, and *στημων, stemon,* a stamen; because of the stamens being inflated at the top.) Mart. fl. bras. 1. p. 72.

Lin. syst. *Hexo-Octándria, Monogýnia.* Calyx of 4 sepals. Corolla of 4 petals, which are unguiculated. Stamens 6 or 8, unequal, 2 or 4 smaller, inflated under the anthers. Ovary almost sessile. Siliques 1-celled, 2-valved. Receptacle marginate, permanent. Seeds numerous, echinated. Small annual plants, with slender fibrous roots; branched, erect or prostrate stems; simple exstipulate scattered leaves, and terminal racemes of yellow flowers.

1 P. lanceola'tus (Mart. fl bras. 1. p. 73. t. 45.) erect; leaves linear-lanceolate; capsules elongated, linear, rather terete; style very short, permanent. ⊙. S. Native of Brazil in the province of Pernambuco, in low sandy places.

Lanceolate-leaved Physostemon. Fl. April. Pl. 1½ foot.

2 P. tenuifòlium (Mart. fl. bras. 1. p. 73. t. 46.) smooth, erect; leaves linear-awl-shaped; capsules ovate, equal in length to the style. ⊙. S. Native of Brazil in the province of Pernambuco in grassy places. Stem branched from the base.

Slender-leaved Physostemon. Fl. April. Pl. 1½ foot.

3 P. rotundifòlium (Mart. fl. bras. 1. p. 74. t. 47.) leaves ovate-elliptical, acute; capsules ovate, compressed, exceeding the length of the permanent style. ⊙. S. Native of Brazil on the confines of the provinces of Pernambuco and Bahia, on the banks of the river Francisco. Stem decumbent, hairy.

Round-leaved Physostemon. Fl. April. Pl. decumbent.

Cult. The seed of these plants should be sown on a hot-bed early in spring, and when the plants are of sufficient size, which will be about the beginning of May, they should be planted out into a warm sheltered situation in the open border, where they will ripen their seed if the summer proves warm.

VII. CORYNA'NDRA (from *κορυνη, coryne,* a club, and

ανηρ ανδρος, *aner andros*, a male; because of the filaments being club-shaped at the top.) Schrad. ex Spreng. syst. append. p. 201 and 204.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 4 sepals. Petals 4. Stamens numerous; filaments clubbed at the top under the anthers, and coloured; anthers curved. Silique sessile. 2-valved, many-seeded. An annual erect herb, with the lower leaves quinate and the upper ones ternate; leaflets lanceolate, linear. Flowers in corymbs, with white petals and red filaments.

1 C. pulche'lla (Schrad. l. c.) ⊙. H. Native of Nipaul and China. This is an elegant plant.

Pretty Corynandra. Fl. July. Pl. 1 to 2 feet.

Cult. The seeds of this pretty annual plant should be sown in a pot, in the month of March, and when the plants are of sufficient size, which will be in May, they should be planted out into the border in a warm situation, where they will flower and ripen seed.

Tribe II.

CAPPA'REÆ (plants agreeing in some characters with *Cápparis*.) D. C. prod. 1. p. 242, Fruit somewhat fleshy, indehiscent (f. 52. *f.*). Shrubs or trees, with simple or ternate leaves.

VIII. CRATÆ'VA (to the memory of Cratævus, a Greek botanist, who lived in the time of Hippocrates.) Lin. gen. 599. D. C. prod. 1. p. 242.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx 4-sepalled. Petals 4, larger than the calyx. Stamens 8-28. Torus elongated or hemispherical. Berry stipitate, with a very thin skin, ovate-globose, pulpy in the inside. Unarmed shrubs or trees, with trifoliate leaves and terminal cymes or racemes of largish flowers. This genus differs particularly in the open æstivation of the petals. The flowers are sometimes polygamous.

1 C. gyna'ndra (Lin. spec. 636.) stamens 20-24, inserted on the cylindrical receptacle, longer than the petals; berry ovate; leaflets ovate, acute; petals lanceolate. ♄. S. Native of bushy places near the sea in Jamaica.—Pluk. phyt. t. 147. f. 6. Flowers in panicled racemes, with whitish petals and purplish stamens, and anthers. This plant has a nauseous smell and a burning taste.

Gynandrous Garlic Pear, Fl.? Clt. 1789. Tree 12 to 16 feet.

2 C. religiòsa (Forst. prod. 203.) stamens 20-28, inserted in an annular torus, length of petals; berry oval; leaflets lanceolate-elliptical, acute. ♄. S. Native of Malabar and the Society Islands.—Rheed. mal. 3. t. 42. Flowers greenish-white, with red stamens. In the Society Islands this tree is planted in burial grounds, and is supposed to be sacred to their idols. In Otaheite the tree is called *Pura-au* and *Puratarura*.

Sacred Garlic-Pear. Tree 20 feet.

3 C. læ'ta (D. C. prod. 1. p. 243.) stamens 20-24, inserted in an annular torus, longer than the petals; berry oval; leaflets ovate, acuminated, unequal at the base. ♄. S. Native of Senegal. Flowers whitish, with reddish stamens, sometimes polygamous. Perhaps the same as *C. Adansònii*.

Fruitful Garlic-Pear. Tree 20 feet.

4 C. Ta'pia (Lin. spec. 637.) stamens 8-16, inserted in a cylindrical torus, nearly one-half shorter than the pedicel of the fruit and petals; berry globose; leaflets ovate-acuminated, unequal at the base; petals narrow. ♄. S. Native of the West India Islands and South America.—Plum. gen. t. 21.—Pis. bras. t. 69. The plant from the West India Islands is octandrous, and the one from South America is dodecandrous; and therefore probably distinct species. Flowers on long peduncles, forming loose terminal panicled racemes, whitish. The fruit is as large as an orange, and when ripe has a strong scent of garlic, which is communicated to the animals that feed on it. *Tapia* is the American name of the tree.

Tapia or Common Garlic-Pear. Clt. 1752. Tree 30 to 40 ft.

5 C. Adansònii (D. C. prod. 1. p. 243.) stamens 12-16, inserted in a short torus; berry globose; leaflets oblong, acuminated, almost equal at the base, but the lateral leaflets have unequal sides. ♄. S. Native of Senegal. Cratæ'va Tàpia, Adans. in herb. Juss. This plant is very like *C. Tàpia*. Flowers whitish-green, with reddish stamens.

Adanson's Garlic-Pear. Tree 30 feet.

6 C. Roxbu'rghii (R. Br. in append. to Denh. and Clapp. trav.) stamens numerous; leaflets ovate, unequal; petals ovate-roundish. ♄. S. Native of the East Indies. Fruit and flowers like those of *C. Tàpia*. C. Tàpia, Vahl. symb. 3. p. 61. Cápparis trifoliàta, Roxb. mss.—This species comes very near to *C. Adansònii*, but the lateral leaflets are more unequal; this consists of the greater decurrence of the lamina on the outer side of the lateral leaflets.

Roxburgh's Garlic-Pear. Tree 30 feet.

7 C. tapioi'des (D. C. prod. 1. p. 243.) stamens 8-16, inserted in a short torus, twice as long as the oblong stipitate petals, and almost equalling the pedicel of the fruit; leaflets ovate, terminal one bluntish, lateral ones acuminated. ♄. S. Native of South America. Cápparis trifoliàta, Spreng. in herb. Balb. Flowers white, with red stamens.

Tapia-like Garlic-Pear. Clt. 1820. Tree 20 feet.

8 C. acumina'ta (D. C. prodr. 1. p. 243.) stamens 12 to 16, inserted in a short torus, a little longer than the oblong petals; leaflets ovate, much pointed, lateral ones unequal at the base. ♄. S. Native of French Guiana. Flowers white, in spreading terminal racemes. This is probably the same as *C. Tàpia*.

Acuminated-leaved Garlic-Pear. Tree 30 feet.

9 C. obova'ta (Vahl. symb. 1. p. 61.) stamens 12, inserted in an annular torus, longer than the petals; berry cylindrical; leaflets obovate. ♄. S. Native of Madagascar. O'thrys, Pet. Th. gen. mad. no. 44. Flowers white. Fruit eatable.

Obovate-leaved Garlic-Pear. Tree 20 feet?

10 C. magna (D. C. prodr. 1. p. 243.) stamens 12 to 24, very long, inserted in a hemispherical torus; berry ovate; leaflets oval-lanceolate; petals ovate. ♄. G. Native of Cochin-China. Cápparis mágna, Lour. cochin. p. 331. Flowers large, white. Fruit roundish, ash-coloured, eatable.

Large Garlic-Pear. Tree 30 feet.

11 C. falca'ta (D. C. prod. 1. p. 243.) stamens 12 to 16, inserted in a short torus; berry oblong; lateral leaflets falcate at the base. ♄. G. Native of China, near Canton. Cápparis falcàta, Lour. cochin. p. 331. Flowers large, white. Berry oblong, red.

Falcate-leaved Garlic-Pear. Tree 30 to 40 feet.

12 C. radiatiflòra (D. C. prodr. 1. p. 243.) stamens indefinite, inserted in an annular torus; berry roundish-oval, pendulous; leaflets ovate or obovate, acuminated, shining. ♄. S. Native in woods of Guayaquil. Cápparis radiatiflòra, Ruiz. et Pav. fl. per. 5. t. 433. Flower white, large.

Radiate-flowered Garlic-Pear. Tree 30 feet.

13 C. unilocula'ris (Hamilt. in Lin. trans. vol. 15.) stamens 16, inserted on a short torus; petals ovate, with the claws longer than the calyx; berry oblong. ♄. S. Native of the East Indies. Flowers either of separate sexes, or hermaphrodite. The tree is called *Borun* in Bengalese.

Unilocular Garlic-Pear. Tree 30 feet.

Cult. The species of *Cratæ'va* require a soil composed of loam, peat and rotten dung. Cuttings of all will root freely, if planted in a pot of sand, and placed under a hand-glass, in heat.

IX. RICHIE'A, (to the memory of Mr. Richie; the African traveller, died 1821, at Tripoli.) R. Br. in app. to Denh. et Clapp. trav.

Lin. Syst. *Polyándria, Monogýnia.* Calyx of 4 sepals, valvate in the bud. Petals 4, very long and narrow, undulated at the apex. Stamens 12 to 16, inserted in an elevated cylindrical torus. Ovary on a long stalk. Berry oblong, many-seeded. A rambling smooth shrub, with ternate leaves, which are rather coriaceous, and terminal corymbose racemes of large sweet-scented flowers, with white petals and filaments, and blue anthers. Filaments curved at the top.

1 R. fra'grans (R. Br. l. c.) ♄. ◡. S. Native of Sierra Leone. Cratæ'va fràgrans, Sims, bot. mag. t. 526. Cratæ'va capparoìdes, Andr. bot. rep. t. 176.

Fragrant Richiea. Fl. Ju. Aug. Clt. 1795. Shrub cl.

Cult. This plant is well adapted for covering rafters in stoves. A mixture of loam, peat and sand suits it best. Cuttings will root readily if planted in a pot of sand, and placed under a hand-glass, in heat.

X. NIEBU'HRIA (in honour of Carsten Niebuhr, an Arabian traveller, author of Reisebeschreibung nach Arabien, 2 vols. 4to. Copenhagen, 1774 and 1778, &c.) D. C. prodr. 1. p. 243.

Lin. Syst. *Polyándria, Monogýnia.* Calyx 4-sepalled; sepals valvate in the bud. Petals none, or shorter than the calyx. Torus cylindrical, very short. Stamens indefinite. Berry ? ovate or cylindrical, stipitate. Unarmed shrubs, with white flowers, which are disposed in terminal racemes.

Sect. I. Cratævæfo'rmes (shrubs with the habit of *Cratæ'va*) D. C. prod. 1. p. 243. Petals none. Leaves trifoliate.

1 N. Ca'fra (D. C. prodr. 1. p. 243.) racemes terminal; leaflets oblong, almost 4-times longer than the petiole. ♄. G. Native of the Cape of Good Hope, on the border of Cafraria. Cratæ'va Càfra, Burch. cat. no. 3678, and 3648.

African Niebuhria. Clt. 1818. Shrub 5 feet.

2 N. avicula'ris (D. C. prod. 1. p. 243.) racemes terminal; leaflets obovate, one half shorter than the petioles. ♄. G. Native of the Cape of Good Hope. Cratæ'va aviculàris, Burch. cat. no. 4445. Perhaps sufficiently distinct from *N. Càfra.*

Knotted Niebuhria. Shrub 4 feet.

3 N. linea'ris (D. C. prod. 1. p. 244.) racemes terminal; leaflets linear, recurvedly-mucronate, roughly-punctate on both surfaces, shorter than the petioles. ♄, S. Native of the East Indies. Cápparis apétala, Roth. nov. spec p. 238. Cratæ'va apétala, Spreng. syst. 2. p. 448. Berry globose.

Linear-leaved Niebuhria. Shrub 6 feet.

4 N. oleoi'des (D. C. prod. 1. p. 244.) peduncles 1-flowered, axillary; leaflets oblong, nearly 4-times longer than the petioles. ♄. G. Native of the Cape of Good Hope. O'lea, Burm. in herb. Deless.

Olive-like Niebuhria. Shrub 6 feet.

5 N. Madagascarie'nsis (D. C. prod. 1. p. 244.) peduncles 1-flowered, axillary; leaflets oblong, equalling the petiole in length. ♄. S. Native of Madagascar.

Madagascar Niebuhria. Clt. 1822. Shrub 4 feet.

Sect. II. Capparoi'deæ (from *Capparis*, and *idea*, form; plants with the habit of *Cápparis.*) D. C. prod. 1. p. 244. Petals small. Leaves simple.

6 N. oblongifo'lia (D. C. prod. 1. p. 244.) leaves oval-oblong, blunt, mucronulate. ♄. G. Native of Arabia and the East Indies. Cápparis oblongifòlia, Forsk. descr. p. 99. Cápparis heteroclìta, Roxb. ined. Cratæ'va oblongifòlia, Spreng. syst. 2. p. 448.

Oblong-leaved Niebuhria. Clt. 1822. Shrub 4 feet.

7 N. arena'ria (D. C. prod. 1. p. 244.) leaves oval-oblong, emarginate, mucronulate, glaucous. ♄. S. Native of Gambay, in sandy places. Perhaps sufficiently distinct from *N. oblongifòlia.*

Sand Niebuhria. Shrub 4 to 6 feet.

Cult. Cultivated and propagated in the same way as *Cratæ'va.*

XI. BO'SCIA (in honour of Louis Bosc, long time professor of agriculture in the Jardin des Plantes, Paris, and author of several works.) Lam. ill. t. 395. D. C. prod. 1. p. 244. but not of Thunb.

Lin. syst. *Polyándria, Monogýnia.* Calyx 4-sepalled. Petals none. Stamens 12 to 20, inserted in a short torus. Berry stipitate, globose, 1-seeded. An unarmed shrub, with small white corymbose flowers.

1 B. Senegale'nsis (Lam. l. c) ♄. S. Native of Senegal. Podòria Senegalénsis, Pers. ench. 2. p. 5.

Senegal Boscia. Clt. 1824. Shrub 3 feet.

Cult. Cultivated and propagated in the same manner as *Cratæ'va.*

XII. CA'DABA (*Kadhab*, or *Qathab*, is the Arabic name of *C. rotundifòlia.*) Forsk. ægyp. 67. D. C. prod. 1. p. 244.

Lin. syst. *Tetra-Pentándria, Monogýnia.* Calyx 4-sepalled. Petals 4 or none. Nectary strap-formed, rising from the base of a cylindrical torus, these are usually fulvous above, and yellow beneath. Stamens 4 to 5, monadelphous at the base. Berry stipitate, cylindrical. Shrubs, with simple leaves and terminal racemes of white or yellow flowers.

§ 1. *Flowers petalless, pentandrous.*

1 C. rotundifòlia (Forsk. descr. 68.) unarmed; leaves orbicular, and are, as well as the branches, smooth. ♄. G. Native of Arabia and Abyssinia. Strœ'mia rotundifòlia, Vahl. symb. 1. p. 20. Nectary fulvous above and yellow beneath.

Round-leaved Cadaba. Tree 20 feet.

2 C. glandulòsa (Forsk. descr. 68.) unarmed; leaves roundish, scabrous; branches covered with glandular hairs at the top. ♄. G. Native of Arabia. Strœ'mia glandulòsa, Vahl. symb. 1. p. 20. The number of stamens in this and the preceding species is unknown. Fruit hispid.

Glandular-branched Cadaba. Tree 10 feet.

§ 2. *Flowers of 4 petals.*

3 C. longifòlia (D. C. prod. 1. p. 244.) unarmed; stamens 4; leaves oblong-linear, smooth. ♄. S. Native of Abyssinia. Strœ'mia longifòlia, R. Br. in Salt's voy. abyss. 64.

Long-leaved Cadaba. Shrub 10 feet?

4 C. Indica (Lam. dict. 1. p. 544.) unarmed; stamens 4; leaves oblong, smooth, mucronate. ♄. S. Native of the East Indies. Cleòme fruticòsa, Lin. spe. 937.—Burm. ind. t. 46. f. 3. Flowers white.

Indian Cadaba. Shrub 8 feet.

5 C. du'bia (D. C. prod. 1. p. 244.) unarmed; stamens 4-5; leaves somewhat elliptical, mealy with glaucous powder, 1-nerved. ♄. S. Native of Senegal and Abyssinia. Strœ'mia farinòsa, R. Br. in Salt's voy. abyss. 64. Perhaps distinct enough from the following species?

Doubtful Cadaba. Tree 20 feet.

6 C. farinòsa (Forsk. descr. 68.) unarmed; stamens 5; leaves oval-oblong, 1-nerved, mealy from glaucous powder. ♄. G. Native of Arabia and Senegal. Strœ'mia farinòsa, Vahl. symb. 1. p. 20. Flowers yellow. Nectary white. Perhaps several species are confused under this name.

Mealy Cadaba. Shrub.

7 C. trine'rvia (D. C. prod. 1. p. 244.) unarmed; stamens

6; leaves 3-nerved, ovate-orbicular. ♄. G. Native of Persia, near Ispahan.

Three-nerved-leaved Cadaba. Shrub 10 feet.

8 C. CAPPAROI'DES (D. C. prod. 1. p. 244.) stipulas spinose; stamens 6; leaves oblong-lanceolate, feather-nerved. ♄. G. Native of New Holland and the island of Timor. Petals 3, long-clawed.

Capparis-like Cadaba. Shrub 10 feet.

Cult. The species of *Cádaba* will thrive well in a mixture of loam and peat; and cuttings will root freely if planted in a pot of sand, and then placed under a hand-glass.

XIII. SCHEPPE'RIA (meaning unknown). Neck. elem. no. 1392, D. C. prod. 1. p. 244.

Lin. syst. *Monadélphia, Octándria.* Calyx 4-sepalled, spreading. Petals 4. Torus elongated. Stamens 8, monadelphous around the torus, but free at the top. Nectary concave at the base of the torus. Silique fleshy, stipitate within the calyx. Flowers white or dirty yellow.

1 S. JU'NCEA (D. C. prod. 1. p. 245.) ♄. G. Native of the Cape of Good Hope. Cleòme júncea, Lin. suppl. 300. Macromèrum júnceum, Burch. trav. 1. p. 388, and 492. A leafless shrub, or with small deciduous leaves.

Rushy Schepperia. Shrub 3 feet.

Cult. See *Cádaba* for the culture and propagation.

XIV. SODA'BA (from *Sodab*, the Arabic name of the plant.) Forsk. descr. 81. D. C. prod. 1. p. 245.

Lin. syst. *Octándria, Monogýnia.* Calyx 4-sepalled, upper sepal large, concave. Petals 4, unequal. Stamens 4, 8, or 16. Torus small. Ovary on a long stipe, ovate, 4-furrowed. A diffuse shrub, with spinose stipulas, and many axillary pedicels. Flowers red; stamens brownish-green. Fruit red, bigger than a hazelnut, eatable when dressed before it is ripe. (Forsk.) This is probably the *Suag* of Dr. Oudney's Journal, which he observed at Aghedem, and is said to be a tetrandrous plant, "having a small drupe, which is in great request about Bournou and Soudan, for removing sterility in females; it is sweetish, and hot to the taste, approaching to *Water-cress;* and that in passing the plant a heavy narcotic smell is always perceived." Mr. Brown does not consider this genus generically distinct from *Cápparis.*

1 S. DECI'DUA (Forsk. l. c. Del. ægyp. 74. t. 26.) ♄. G. Native of Arabia and Upper Egypt. Hombak. Adans. fam. 2. p. 408. Cápparis Sodába, R. Br. Petals red. Anthers yellow.

Deciduous Sodaba. Shrub 6 feet.

Cult. See *Cadába* for culture and propagation.

XV. CA'PPARIS (*kabir* is the Arabic name of *C. spinòsa*, which the Greeks have changed to καππαρις, the Latins to *Cápparis*, the French to *Caprier*, and the English to *Caper*). Lin. gen. no. 643. D. C. prod. 1. p. 245.

Lin. syst. *Polyándria, Monogýnia.* Calyx 4-parted (f. 52. *a.*). Petals 4 (f. 52. *b.*). Torus small. Stalk of fruit slender (f. 52. *d.*). Stamens indefinite (f. 52. *c.*). Siliques somewhat baccate (f. 52. *f.*), stipitate. Shrubs with entire simple leaves, and mostly white flowers. This genus ought perhaps to be divided into several genera.

Sect. I. Euca'pparis (from ευς, *eus*, genuine, and καππαρις, *capparis;* this section contains the genuine species of *Cápparis.*) D. C. prod. 1. p. 245. Cápparis, Plum. gen. 39. Bud of flower globose (f. 52. *a.*), with ovate, imbricated, concave, blunt, unequal sepals. Stalk of fruit long (f. 52. *d.*). Species all from the old world or New Holland, not from America.

§ 1. *Pedicellàres, (from pedicellus, a pedicle; because the pedicels are solitary.) D. C. prod. 1. p. 245. Pedicels axillary, solitary* (f. 52. *e. a.*), *or rarely with 2 or 3 rising from the same centre. Flowers polyandrous* (f. 52. *c.*).

1 C. Maria'na (Jacq. h. Schœnbr. t. 109.) unarmed; leaves roundish, somewhat cordate, smoothish, 10-times longer than the petiole; pedicels 1-flowered, solitary, length of the leaves. ♄. S. Native of Marianne Islands, Timor and the Mauritius, Cápparis cordifòlia, Lam. dict. 1. p. 609. Flowers large, white. Resembling *C. spinòsa* in habit.

Marriane Islands' Caper-tree. Clt. 1820. Shrub 4 feet.

2 C. Sandwichia'na (D. C. prod. 1. p. 245.) unarmed; leaves elliptical, smoothish, scarcely 3-times longer than the petiole; pedicels solitary, 1-flowered, length of the leaves. ♄. G. Native of the Sandwich Islands. Flowers white.

Sandwich Caper-tree. Fl. May, Aug. Shrub 4 to 6 feet.

3 C. Chine'nsis; unarmed; leaves ovate-lanceolate, acuminated, quite smooth; pedicels 1-flowered, solitary, a little longer than the petioles. ♄. G. Native of China. C. acuminàta, Lindl. bot. reg. 1320. but not of Vahl. Petals white, tinged with red at the base. Stamens white; anthers blue.

China Caper-tree. Fl. Sept. Clt. 1820. Sh. 4 to 6 feet.

4 C. rupe'stris (Sibth. and Smith, fl. græc. t. 487.) unarmed; leaves roundish, fleshy, deciduous; pedicels 1-flowered, solitary, longer than the leaves. ♄. F. Native of Crete and Mycon on rocks by the sea-side. C. spinòsa, Curt. bot. mag. 291. Flowers large, with white petals and red stamens.

Rock Caper-tree. Fl. May, Aug. Shrub 6 feet.

FIG. 52.

5 C. spino'sa (Lin. spec. 720.) stipulas spinose, hooked; leaves ovate, roundish, deciduous; pedicels solitary, 1-flowered. ♄. F. Native of southern and eastern Europe on walls and rocks. In the Grecian islands on rocks by the sea-side. Blackw. herb. t. 417. Smith, spic. 18. t. 12. fl. græc. 486. There is a variety with abortive stipulas and ovate leaves, which are more or less hoary. Flowers white, tinged with red on the outside; filaments red. The flower-bud (f. 52. *a.*) of this plant is the well-known pickle the *Caper.*

The chief supply of caper buds is from Sicily, but the plant is cultivated in the neighbourhood of Toulon in orchards, in the intervals between fig and olive trees, and in the neighbourhood of Paris, where it is trained on low walls, and the shoots, during winter, laid down and covered with earth, to protect them from the frost. The plant is cultivated on a large scale between Marseilles and Toulon, and in many parts of Italy. The plant is raised from suckers or cuttings, which are planted about 10 feet distance from each other. They require shelter from severe winds, and favourable exposure to the sun, and scarcely ever suffer from drought or heat. In spring they need only one dressing; in autumn they are cut down to within six inches of the ground, and covered with the surrounding earth, which is raised about them on all sides. In the succeeding spring they are laid bare to the crown of the stump, and they soon throw out fresh shoots. In the early part of the summer they begin to flower, and a succession of them continues till they are destroyed by the cold of the advancing winter. In this country it is generally treated as a frame plant, though it has stood the winter in the open air in some situations. A plant stood near a century against the wall of the garden of Camden House, Kensington; it produced many flowers annually, though

the young shoots were frequently killed to the stump during winter. As a pickle, the flower-buds of the *Caper* are in great esteem throughout Europe. In Italy the fruit is prepared in the same way as the flower-buds, both are bitterish, acrid, and aromatic to the taste. In the isles of the Mediterranean, and near Toulon, the flower-buds of the *Caper* are gathered while very young, for as they enlarge they decrease in value; this forms a daily occupation for six months, while the plants are in a flowering state. As the buds are gathered they are thrown into a cask among as much salt and vinegar as is sufficient to cover them, and as the quantity of *capers* is increased more vinegar is added. When the caper season closes, the buds are then sorted according to their size and colour. The smallest and greenest being the best, are separated and put into small casks of fresh vinegar for commerce. They will in this state keep fit for use for many years. It is said to be a common practice to put filings of copper in the first pickle to give the buds a green colour. The best *capers* are called nonpareills and the second best capucines. (N. Cours complet. d'Agr. art. *Caprier*.) The *Caper* is called in France *caprier*, in Italy *capriolo* or *Cappero*, and in German *Kapernstrauch*. *Capers* have the character of being anti-scorbutic, and of removing hepatic and other visceral obstructions; but the part of the plant which has been chiefly recommended for medicinal purposes, is the bark of the root.

Spiny or Common Caper-tree. Fl. May, Aug. Clt. 1596. Shrub 3 feet, lying on the ground if not supported.

6 C. Fontane'sii (D. C. prod. 1. p. 245.) stipulas spinose, hooked; leaves ovate, cordate at the base, acutish at the top. ♄. F. Native of Mauritania near Oran in fissures of rocks. C. ováta, Desf. atl. 1. p. 404. but not of Bieb. Flowers dull white. Fruit club-shaped. Habit of the last.

Desfontaine's Caper-tree. Fl. May, Aug. Clt. 1800? Sh. 3 ft.

7 C. herba'cea (Willd. enum. 560.) stipulas spinose, straight; leaves elliptical, mucronulate, smooth; pedicels solitary, 1-flowered, longer than the leaves; stem herbaceous, trailing on the earth. ♃. F. Native of Tauria, Caspia, and Caucasus in fields. C. ovàta, Bieb. suppl. 2. p. 1. exclusive of the synonym. Flowers white.

Herbaceous Caper-tree. Clt. 1818. Pl. trailing, 2 feet long.

8 C. Ægy'pta (Lam. dict. 1. p. 605.) stipulas spinose, somewhat hooked; leaves glaucous, roundish-cuneated, smooth, mucronate at the apex; pedicels solitary, 1-flowered, length of the leaves. ♄. G. Native of Upper Egypt in the deserts. Del. fl. eg. p. 93. t. 31. f. 3. Flowers whitish or rose-coloured.

Egyptian Caper-tree. Clt. 1822. Shrub 2 to 4 feet.

9 C. rotundifo'lia (Rottl. in Willd. berl. mag. p. 185.) stipulas spinose, straight; leaves sessile, roundish-ovate, somewhat cordate; peduncles solitary, 1-flowered; capsules globose. ♄. S. Native of the East Indies. Flowers white.

Round-leaved Caper-tree. Shrub 4 feet.

10 C. Nepaule'nsis (D. C. prod. 1. p. 246.) stipulas spinose somewhat hooked; leaves ovate, on very short petioles, and are as well as branches rather hoary; peduncles axillary, 1-flowered, longer than the leaves; ovary oblong. ♄. G. Native of Nepaul. Flowers white.

Nepaul Caper-tree. Shrub 8 feet.

11 C. nummula'ria (D. C. prod. 1. p. 246.) stipulas spinose, straight; leaves ovate-orbicular, mucronate and emarginate, smooth, twice the length of the petioles. ♄. G. Native of New Holland on the Barren Islands. Flowers white.

Money-wort-leaved Caper-tree. Shrub 3 feet.

12 C. cane'scens (Banks, ined. D. C. prod. 1. p. 246.) stipulas spinose, straight; leaves ovate, somewhat acute, velvety-puberulous, 6-times longer than the petioles; pedicels solitary, 1-flowered, length of the leaves. ♄. G. Native of New South Wales. Flowers white.

Hoary Caper-tree. Shrub 3 or 4 feet.

13 C. heteraca'ntha (D. C. prod. 1. p. 246.) stipulas spinose, some are straight, others hooked; leaves orbicular, velvety, on very short petioles. ♄. F. Native between Bagdad and Aleppo. Leaves almost 3-nerved. Flowers white.

Variable-spined Caper-tree. Fl. May, Aug. Shrub 4 feet.

14 C. leucophy'lla (D. C. prod. 1. p. 246.) stipulas spinose, hooked; leaves orbicular, hoary-velvety, on very short petioles; pedicels solitary, 1-flowered, longer than the leaves. ♄. F. Native between Bagdad and Aleppo. Flowers white. Fruit smooth, with 6 longitudinal veins.

White-leaved Caper-tree. Fl. May. Aug. Shrub 3 or 4 feet.

15 C. tomento'sa (Lam. dict. 1. p. 606.) stipulas spinose, hooked; leaves ovate-oblong, blunt, velvety-tomentose; pedicels solitary, 1-flowered, shorter than the leaves. ♄. S. Native of Senegal. Flowers white.

Tomentose Caper-tree. Shrub 8 feet.

16 C. dealba'ta (D. C. prod. 1. p. 246.) stipulas spinose, short, hooked; leaves ovate-lanceolate, acuminated, younger ones rather velvety, at length becoming very smooth on the upper surface; pedicels solitary, 1-flowered, length of the petioles. ♄. S. Native of Timor. Flowers white.

Whitened Caper-tree. Shrub 4 feet.

17 C. brevispi'na (D. C. prod. 1. p. 246.) stipulas spinose, short, straight; leaves ovate-lanceolate, mucronate, smooth; pedicels solitary, 1-flowered, 3-times longer than the petioles. ♄. S. Native of the East Indies. Flowers white.

Short-spined Caper-tree. Shrub 4 to 6 feet.

18 C. erythroca'rpa (Isert. berl. natur. 9. p. 339. t. 9.) stipulas spinose, reflexed; leaves oblong, acuminated, younger ones as well as branches somewhat velvety from stellate hairs, but at length becoming smooth; pedicels solitary, 1-flowered, longer than the very short petioles. ♄. S. Native of Guinea. Flowers white. Fruit red.

Red-fruited Caper-tree. Shrub 4 to 6 feet.

19 C. Rhee'dii (D. C. prod. 1. p. 246.) stipulas spinose, straight; leaves oval-oblong, mucronate, smooth, on very short petioles, netted on the under surface; pedicels solitary, 1-flowered, about the length of the leaves. ♄. S. Native of Malabar in sandy places. Badúkka, Rheed. mal. 6. t. 57. Differing from *C. Badúcca* of Lin. in which there are many species confused. Flowers large, white, with a faint mixture of red.

Rheede's Caper-tree. Fl.? Shrub 4 to 6 feet.

20 C. Afze'lii (D. C. prod. 1. p. 246.) stipulas spinose, hooked; leaves ovate-lanceolate, younger ones somewhat puberulous, adult ones smooth, on very short petioles; pedicels solitary, 1-flowered. ♄. S. Native of the western coast of Africa. Flowers white. Very like *C. Rheèdii*.

Afzelius's Caper-tree. Shrub 6 feet.

21 pyrifo'lia (Lam. dict. 1. p. 606.) stipulas spinose, short, hooked; leaves oval-lanceolate, acute, younger ones rather tomentose, adult ones smooth; pedicels solitary, 1-flowered, much shorter than the leaves. ♄. S. Native of the East Indies. Flowers white.

Pear-leaved Caper-tree. Shrub 6 feet.

22 C. stylo'sa (D. C. prod. 1. p. 246.) stipulas spinose, spreading; leaves oval-lanceolate, acute, younger ones somewhat woolly, adult ones smooth; pedicels solitary, 1-flowered, 3-times longer than the petioles; sepals acuminated, ovary narrowed out into a thick style. ♄. S. Native of Coromandel in sandy places. Flowers white.

Var. β, velutìna (D. C. l. c.) plant somewhat hoary with short down. Native of Mysore.

Long-styled Caper-tree. Shrub 6 feet.

23 C. ho'rrida (Lin fil. suppl. 264.) stipulas spinose, spread-

ing; leaves ovate, mucronate; pedicels 1-flowered, rising above the axils of the leaves, 2 or 4 together. ♄. S. Native of Coromandel and Ceylon. Flowers white.

Horrid Caper-tree. Shrub 10 feet.

24 C. PUBIFLÒRA (D. C. prod. 1. p. 246.) stipulas spinose, spreading, small, straight; leaves oval-oblong, acuminated, smooth, pedicels 1 to 3 together, axillary, twice the length of the petioles. ♄. S. Native of Timor? and Java. Petals downy, white.

Downy-flowered Caper-tree. Shrub 6 feet.

25 C. APHY'LLA (Roth. nov. spe. p. 238.) stipulas spinose; leaves none? umbels of flowers almost sessile, rising from the axils of the stipulas; stem flexuous, dichotomous, leafless, and is, as well as the divaricate branches, very smooth. ♄. S. Native of the East Indies. Flowers white?

Leafless Caper-tree. Clt. 1822. Shrub 4 to 6 feet.

26 LINEA'TA (Pers. synop. 2. p. 60.) leaves ovate, acuminated, on short foot-stalks, at last becoming glabrous on the upper surface; under surface, as well as branches, covered with velvety tomentum; peduncles axillary, 1-flowered. ♄. S. Native of Brazil, at Rio Janeiro. Flowers white.

Lined-leaved Caper-tree. Shrub 6 feet.

27 C. DIVARICA'TA (Lam. dict. 1. p. 606.) stipulas spinose, hooked, divaricate; leaves glabrous, linear, acute, on very short foot-stalks. ♄. S. Native of Coromandel. This plant certainly belongs to Sect. *Eucápparis*, but the flowers and fruit are unknown.

Divaricated stipuled Caper-tree. Shrub 10 feet.

§ 2. *Seriàles* (from *sero*, to lay in order; because of the flowers being disposed in something like whorles.) *Pedicels 1-flowered, rising above the axils of the leaves, several together, and disposed in a vertical series.*

28 C. ZEYLA'NICA (Lin. spec. 720.) stipulas spinose, straight; leaves oval, pointed at both ends, smooth; pedicels 2 or 3 together, 3-times longer than the petiole. ♄. S. Native of Ceylon and Java. Flowers small, white, 12-anthered. Perhaps the same as *C. Zeylánica* of Lour, which is described as having a small, black, round, 3-seeded berry.

Ceylon Caper-tree. Clt. 1819. Shrub 6 feet.

29 C. BILLARDIE'RII (D. C. prod. 1. p. 247.) stipulas spinose, straight; leaves oval-oblong, veiny-netted, and are, as well as branches, smooth; pedicels 3-together; ovary almost sessile. ♄. S. Native of the Molucca Islands, at the straits of Bouton. Flowers white.

La Billardiere's Caper-tree. Shrub 4 to 6 feet.

30 C. ACUMINA'TA (Willd. spec. 2. p. 1131.) stipulas spinose, hooked at the top; leaves ovate, mucronately-acuminated; rusty-tomentose on the under surface; pedicels 2-3 together. ♄. S. Native of the East Indies. Petals white, ciliated with down. Perhaps this plant is referable to t. 29. of Braam. icon. chin. 1821.

Taper-pointed-leaved Caper-tree. Clt. 1822. Shrub 6 feet.

31 C. FŒ'TIDA (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 644.) stipulas spinose, straight; leaves oval, acuminated, a little cordate at the base, clothed beneath, as well as the branches with stellate down; pedicels solitary, or 2-5 together, twice the length of the petiole; petals villous. ♄. S. Native of Java. Flowers white. Like *C. acuminàta*.

Fetid Caper-tree. Shrub 6 feet.

32 C. MICRA'NTHA (Blum. l. c.) stipulas spinose, small, straight; leaves oval, scariose, coriaceous, smooth, somewhat cordate at the base; pedicels 2-6 together, shorter than the petioles. ♄. S. Native of Java. Flowers probably white.

Small-flowered Caper-tree. Shrub 6 feet.

33 C. CALLO'SA (Blum. l. c.) stipulas spinose, straight; leaves oblong, scariose at the apex, coriaceous, smooth, rounded at the base; pedicels solitary, 1-2-3 together, about equal in length with the petioles. ♄. S. Native of Java. Flowers probably white. Allied to the preceding.

Callous Caper-tree. Shrub 6 feet.

34 C. FLEXUO'SA (Blum. l. c.) stipulas spinulose, very short; leaves elliptical-oblong, acute at both ends, coriaceous, smooth, but scariose at the apex; pedicels on the younger branches, 2-4-together, equal in length with the petioles. ♄. S. Native of Java. Flowers probably white. Allied to the two preceding.

Flexuous-branched Caper-tree. Shrub 6 feet.

35 C. VOLKAME'RIÆ (D. C. prod. 1. p. 247.) stipulas spinose, hooked at the top; leaves ovate, pointed with a callous mucrone, rusty-velvety on the under surface along the nerves; pedicels 2-3 together. ♄. G. Native of the Cape of Good Hope. Volkamèria Capénsis, Burm. prod. cap. 17. Petals white, ciliated with hairs.

Volkameria-like Caper-tree. Shrub 6 feet.

36 C. LASIA'NTHA (R. Br. ined. and D. C. prod. 1. p. 247.) stipulas spinose; leaves ovate-oblong, on very short petioles, at length smooth, younger ones as well as branchlets and calyx velvety; pedicels 2-3 together. ♄. S. Native of New Holland on the eastern coast within the tropic. Flowers white.

Woolly-flowered Caper-tree. Shrub 4 to 6 feet.

37 C. TERNIFLÒRA (D. C. prod. 1. p. 247.) stipulas spinose, hooked; leaves ovate-mucronate, at length smooth, younger ones pubescent; pedicels 3 together; sepals velvety. ♄. S. Native of Coromandel. Flowers white.

Tern-flowered Caper-tree. Shrub 6 feet.

38 C. QUADRIFLÒRA (D. C. prod. 1. p. 247.) stipulas spinose, straightish; leaves ovate, acuminated, with a callous point, upper surface smooth, under surface velvety, as well as branches and calyx; pedicels 4 together. ♄. S. Native of the East Indies. C. pyrifòlia β, Lam. dict. 1. p. 606.—Pluk. phyt. t. 107. f. 3. Flowers white.

Four-flowered Caper-tree. Shrub 6 feet.

39 C. QUINIFLÒRA (D. C. prod. 1. p. 247.) stipulas none; leaves ovate, somewhat acuminated, younger ones pubescent, at length smooth; pedicels 4-6, together. ♄. G. Native of New Holland on the northern coast. Flowers white.

Five-flowered Caper-tree. Shrub 4 to 6 feet.

40 C. MICRACA'NTHA (D. C. prod. 1. p. 247.) stipulas spinose, small, straight; leaves oval, blunt, pointed with a callous mucrone; pedicels 4-6 together. ♄. S. Native of Java. Flowers white.

Small-spined Caper-tree. Shrub 6 feet.

§ 3. *Corymbòsæ* (from *corymbus*, a corymb; because of the flowers being disposed in corymbs.) *Pedicels disposed in corymbs or racemes. Flowers polyandrous.*

41 C. CITRIFÒLIA (Lam. dict. 1. p. 606.) stipulas spinose, hooked; leaves oblong, mucronate, smooth; pedicels umbellate, terminal. ♄. G. Native of the Cape of Good Hope. There is a variety of this plant with puberulous branches. Flowers small, white.

Citron-leaved Caper-tree. Shrub 6 feet.

42 C. SEPIA'RIA (Lin. spec. 720.) stipulas spinose, hooked; leaves ovate, somewhat emarginate, and pubescent on the under surface as well as the branches; pedicels umbellate, terminal. ♄. S. Native of the East Indies in hedges.—Pluk. phyt. t. 338. f. 3. Flowers small, white.

Var. β, glabràta (D. C. l. c.) adult leaves smooth. Native of Timor.

Hedge Caper-tree. Fl. Clt. 1823. Shrub 4 to 8 feet.

43 C. callophy'lla (Blum. bijdr. fl. ned. ind. ex Schlecht. Linnæa. 1. p. 645.) stipulas spinose, hooked; leaves oval, coriaceous, smooth, with a callous mucrone at the point; racemes elongated; pedicels umbellate. ♄. S. Native of Java. C. tylophýlla, Spreng. syst. append. p. 204. Flowers probably white.

Beautiful-leaved Caper-tree. Shrub 4 to 6 feet.

44 C. umbella'ta (R. Br. ined. and D. C. prod. 1. p. 247.) unarmed; leaves oval, blunt; somewhat emarginate, smooth; branchlets and petioles pubescent; pedicels umbellate, terminal. ♄. G. Native of New Holland on the eastern coast within the tropic. Flowers white.

Umbellate-flowered Caper-tree. Shrub 6 feet.

45 C. incane'scens (D. C. prod. 1. p. 247.) stipulas spinose, hooked; leaves elliptical, mucronate, and are hoary as well as the branches from appressed down; pedicels umbellately-corymbose, terminal. ♄. S. Native of Mysore. Flowers white.

Incanescent Caper-tree. Shrub 6 to 8 feet.

46 C. corymbo'sa (Lam. dict. 1. p. 605.) stipulas spinose, hooked; leaves oval, or obovate, smooth, but usually pubescent beneath; pedicels corymbose, terminal, and axillary. ♄. S. Native of Senegal and Gambia. Flowers white. Perhaps the plant with the smooth is specifically distinct from that with the pubescent leaves.

Corymbose-flowered Caper-tree. Fl. Mar. Ap. May. Sh. 8 ft.

47 C. cane'scens; stipulas spinose; leaves tomentose, lanceolate-obovate, emarginate; pedicels corymbose, terminal. ♄. S. Native of the eastern coast of Africa. Flowers white.

Candescent Caper-tree. Shrub 8 feet.

48 C. Roxbu'rghii (D.C. prod. 1. p. 247.) stipulas of the branches spinose, reflexed, on the branchlets none; leaves elliptical, smooth; branchlets grey-velvety; pedicels racemosely-corymbose. ♄. S. Native of the East Indies. Flowers white. (C. A'guba, herb. Banks.)

Roxburgh's Caper-tree. Shrub 6 to 8 feet.

49 C. obova'ta (Buch. ined. D. C. prod. 1. p. 248.) leaves obovate, cinereously-velvety on the under surface as well as the branches; pedicels racemosely-corymbose. ♄. S. Native of Mysore. Flowers probably white.

Obovate-leaved Caper-tree. Shrub 4 to 6 feet.

50 C. ma'xima (Roth. nov. spec. 237.) unarmed; leaves roundish-ovate, narrowed a little at both ends, upper surface smooth, shining, under surface pubescent, and is as well as the branches greyish; racemes terminal, somewhat paniculate. ♄. S. Native of the East Indies. Flowers white.

Greatest Caper-tree. Tree 20 feet.

51 C. gra'ndis (Lin. fil. suppl. 263.) unarmed; leaves ovate, and are as well as younger branches somewhat velvety, adult ones smooth; racemes terminal. ♄. S. Native of Ceylon. Flowers pale yellow. Fruit small, globose.

Grand Caper-tree. Tree 30 feet.

52 C. racemi'fera (D. C. prod. 1. p. 248.) stipulas of the branches rather spinose, unequal, none on the branchlets; leaves obovate, upper surface smooth, under surface pubescent, as well as the younger branches; racemes terminal. ♄. S. Native of the East Indies. Flowers white.

Raceme-bearing Caper-tree. Shrub 6 feet.

53 C. pube'rula (D. C. prod. 1. p. 248.) stipulas on the branches spinose, hooked, those on the branchlets punctiform; leaves ovate-lanceolate, upper surface smooth, under surface somewhat velvety as well as the branchlets; racemes terminal. ♄. S. Native on the western coast of tropical Africa. Flowers white.

Puberulous Caper-tree. Shrub 6 to 8 feet.

54 C. Bra'ssii (D. C. prod. 1. p. 248.) stipulas spinose, hooked; leaves ovate-lanceolate, smooth; branchlets and petioles pubescent; racemes corymbose, axillary. ♄. S. Native on the western coast of Africa, at Cape Coast, and Acra. Flowers white.

Brass's Caper-tree. Clt. 1793. Shrub 4 to 6 feet.

55 C. fasciula'ris (D. C. prod. 1. p. 248.) stipulas on the branches spinose, somewhat hooked, none on the branchlets; leaves elliptical, adult ones smooth; racemes fasciculately-corymbose, axillary. ♄. S. Native on the western coast of Africa, at Cape Coast, and Acra. Flowers white.

Fascicled-corymbed Caper-tree. Shrub 6 feet.

56 C. lanceola'ris (D. C. prod. 1. p. 248.) stipulas spinose, hooked; leaves lanceolate, acute; racemes axillary, somewhat corymbose; pedicels furnished on each side at their base with a spinose stipula. ♄. S. Native of Java. C. Salaccénsis, Blum. Flowers white.

Lanceolar-leaved Caper-tree. Shrub 6 feet.

§ 4. *Octándræ* (so named because of the flowers being octandrous). *Pedicels axillary, usually many-flowered; flowers octandrous.* Perhaps a proper section. Species all from the Cape of Good Hope.

57 C. cluytiæfòlia (Burch. cat. no. 3881, and D. C. prod. 1. p. 248.) unarmed; leaves oblong-cuneated, blunt, smooth, with a mucrone; pedicels axillary, solitary, 1-flowered, one-half shorter than the leaves. ♄. G. Native of the Cape of Good Hope. Flowers white.

Cluytia-leaved Caper-tree. Shrub 6 feet.

58 C. oleoìdes (Burch. cat. no. 4200.) unarmed; leaves oblong, smooth, narrowed at the base, blunt at the apex, with a mucrone; racemes axillary, a little shorter than the leaves; stalk of fruit shorter than the pedicel. ♄. G. Native of the Cape of Good Hope. Berry globose, about the size of a pea. Flowers white.

Olive-like Caper-tree. Shrub 4 to 6 feet.

59 C. coria'cea (Burch. cat. no. 2898.) unarmed; leaves oblong, blunt, smooth; racemes axillary, a little shorter than the leaves. ♄. G. Native of the Cape of Good Hope. Scarcely differing from *C. oleoìdes*. Flowers white.

Leathery-leaved Caper-tree. Shrub 4 to 6 feet.

60 C. albitru'nca (Burch. cat. no. 1762. trav. 1. p. 343.) unarmed; leaves oblong, very blunt, narrowed at the base, smooth; racemes axillary, shorter than the leaves; stalk of fruit length of the pedicel. ♄. G. Native of the Cape of Good Hope. Flowers white.

White-trunked Caper-tree. Tree 16 feet.

61 C. puncta'ta (Burch. cat. no. 1891. trav. 1. p. 492.) unarmed; leaves oblong, somewhat narrowed at the base, and somewhat mucronate at the top, smooth, netted with veins; racemes axillary, much shorter than the leaves. ♄. G. Native of the Cape of Good Hope. Flowers white.

Dotted Caper-tree. Shrub 6 feet.

62 C. racemulo'sa (D. C. prod. 1. p. 248.) stipulas spinose, small; leaves oval-oblong, smooth; racemes axillary, 3-times longer than the leaves. ♄. G. Native of South Africa. Flowers apetalous? 8-12 stamened.

Racemulose-flowered Caper-tree. Shrub?

Sect. II. Capparida'strum (from *Capparis*, and *astrum*, an affixed signification). D. C. prod. 1. p. 248. Flower-bud somewhat obovate, with small, roundish, equal sepals, imbricated before expansion. Stalk of fruit middle-sized. Branches unarmed. Leaves smooth. Species all from America.

63 C. frondo'sa (Jacq. amer. 162. t. 104. pict. 79. t. 153.) leaves leathery, lanceolate, acuminated, somewhat cordate at the base, 3-times or more, longer than the petiole; pedicels corymbose at the top of the peduncle. ♄. S. Native of Carthagena, in woods; also in St. Domingo and New Granada. Flowers greenish or purple. Fruit purple, with whitish flesh.

Leafy Caper-tree. Clt. 1800. Shrub 7 feet.

64 C. cunea'ta (D. C. prod. 1. p. 249.) leaves leathery, obovately-cuneated, mucronate, 3-times longer than the petiole; flowers racemose; stalk of fruit longer than the pedicel of the flower. ♄. S. Native of the West-India Islands. C. petiolàris, Banks. herb. Flowers white.

Wedge-leaved Caper-tree. Shrub 6-8 feet.

65 C. macrophy'lla (H. B. and Kunth, nov. spec. 5. p. 91.) leaves leathery, oval, acutish at both ends, twice the length of the petioles; flowers racemose, on long pedicels. ♄. S. Native on the banks of the river Magdalena. Flowers white inside.

Long-leaved Caper-tree. Shrub 8 feet, climbing.

66 C. petiola'ris (H. B. and Kunth, nov. spec. 5. p. 91.) leaves membranous, oval-oblong, blunt, twice the length of the petioles; flowers racemose; stalk of fruit double the length of the pedicel. ♄. S. Native near Guayaquil. Flowers white.

Petiolar Caper-tree. Shrub 6 feet.

67 C. trifo'ra (Mill. dict. no. 10.) leaves elliptic-oblong, acuminated at both ends, 3-times longer than the petioles; peduncles 3-flowered, much shorter than the leaves. ♄. S. Native of South America, about Tolu. Flowers small white, succeeded by oval fruit.

Three-flowered Caper-tree. Shrub 4 to 6 feet.

68 C. Brasilia'na (D. C. prod. 1. p. 249.) leaves oblong, narrowed at the base, somewhat cordate, almost sessile; peduncles racemose; stalk of fruit scarcely shorter than the pedicel. ♄. S. Native of Brazil, near Rio Janeiro. Flowers white.

Brasilian Caper-tree. Shrub 4 to 6 feet.

Sect. III. Cynopha'lla (from κυων, *kyon*, a dog, and φαλλος, *phallos*, a phallus; in allusion to the shape of the fruit.) D. C. prod. 1. p. 249. Flower-bud globose, with roundish sepals, imbricated before expansion, and each furnished at the base with a gland or hollow. Siliques long, terete, fleshy. Stalk of fruit elongated. Species all from America. Unarmed shrubs, usually with glands in the axils of the leaves.

69 C. se'ssilis (Banks. herb. and D. C. prod. 1. p. 249.) leaves almost sessile, oval, cordate at the base; axillary gland wanting or concave; pedicels axillary, solitary, 1-flowered. ♄. S. Native of Carthagena. Flowers white.

Sessile-leaved Caper-tree. Shrub 8 feet.

70 C. cynophallo'phora (Lin. spec. 721. Jacq. amer. t. 98. pict. t. 145.) leaves smooth, leathery, oblong, on short petioles; axillary gland ovate-oblong; peduncles few-flowered, shorter than the leaves. ♄. S. Native of the West-India Islands and South America. C. flexuòsa, Lin. spec. 722. A very polymorphous species; perhaps a heterogeneous mass of species collected. Flowers large white, or greenish-white, fragrant. Fruit reddish when ripe, opening at the suture. Seeds enveloped in scarlet-pulp.

Dog-phallus-bearing Caper-tree. Clt. 1752. Shrub 8 to 12 feet, with weak branches.

71 C. Eustachia'na (Jacq. amer. ed. pict. t. 146.) leaves smooth, somewhat coriaceous, ovate, acuminated, on short footstalks; axillary gland ovate-oblong; peduncles few-flowered, shorter than the leaves. ♄. S. Native of the Island of St. Eustach. Flowers purple.

St. Eustach Caper-tree. Clt. 1822. Shrub 6 feet.

72 C. sali'gna (Vahl. symb. 3. p. 66.) leaves smooth, leathery, on short petioles, linear, somewhat dilated at the base, and cordate; axillary gland ovate-oblong. ♄. G. Native of Santa Cruz. Flowers white.

Willowy Caper-tree. Clt. 1807. Shrub 8 feet.

73 C. hasta'ta (Lin. spec. 722. Jacq. amer. t. 174. f. 56. pict. t. 147.) leaves smooth, leathery, on short petioles, hastate at the base, or somewhat cordate, the rest long linear; axillary gland wanting; racemes terminal. ♄. S. Native of the woods of Carthagena. Flowers purple, somewhat odorous, and nearly 2 inches in diameter.

Halbert-leaved Caper-tree. Shrub 6 to 8 feet.

74 C. linea'ris (Jacq. amer. t. 102. pict. t. 151.) leaves smooth, leathery, on very short petioles, linear, with glands in the axils; racemes somewhat panicled. ♄. S. Native of Carthagena and Cumana, in woods. Flowers white, half-an-inch in diameter, scentless. Fruit orange-coloured.

Linear-leaved Caper-tree. Clt. 1793. Tree 15 to 20 feet.

75 C. lanceola'ta (Ruiz et Pav. fl. per. 5. t. 429. f. a. ined. et D. C. prod. 1. p. 249.) leaves smooth, ovate-lanceolate, acuminated; peduncles panicled; bracteas glanduliferous at the base. ♄. S. Native of Guayaquil, on the banks of the Daule. Flowers white; petals oblong-obovate, twice as long as the calyx. Siliques 2 hands long.

Lanceolate-leaved Caper-tree. Shrub 6 feet.

76 C. Guayaquile'nsis (H. B. et Kunth, nov. spec. 5. p. 89.) leaves smooth, oblong, blunt, somewhat retuse, on short petioles; axillary gland truncate; racemes terminal. ♄. S. Native of Guayaquil. Siliques 2 or 4 inches long, torulose. Flowers white.

Guayaquil Caper-tree. Shrub 6 feet.

77 C. læ'ta (H. B. et Kunth, nov. spec. 5. p. 88.) leaves smooth, oblong, blunt at both ends, somewhat emarginate, on very short petioles; axillary gland truncate; racemes branched at the base. ♄. S. Native about Turbaco. Flowers white.

Fruitful Caper-tree. Shrub 8 feet.

78 C. subbi'loba (H. B. et Kunth, nov. spec. 5. p. 90.) leaves smooth, elliptical, emarginately 2-lobed at the top, on short petioles; axillary gland blunt; racemes panicled, short. ♄. S. Native about Cumana. Flowers white.

Sub-bilobed-leaved Caper-tree. Tree 20 feet.

79 C. pauciflòra (H. B. et Kunth, nov. spec. 5. p. 89.) leaves smooth, leathery, elliptical, blunt at both ends, somewhat emarginate; axillary gland truncate; peduncles 3-flowered. ♄. S. Native of shady places near Cumana. Flowers unknown. Siliques 2 or 3 inches long.

Few-flowered Caper-tree. Shrub.

80 C. verrucòsa (Jacq. amer. t. 99.) leaves smooth, oblong, blunt at the base, acutish at the top; axillary gland wanting; racemes terminal, few-flowered; siliques warted. ♄. S. Native of Carthagena and Island of St. Thomas, in low woods. Flowers white. Siliques $1\frac{1}{2}$ inch long. Pulp of fruit white.

Warted-podded Caper-tree. Clt. 1820. Shrub 8 feet.

81 C. mòllis (H. B. et Kunth, nov. spec. 5. p. 88.) leaves oblong, on short petioles, somewhat ovate at the base, and narrowed towards the top; upper surface smooth, under surface velvety, as well as the branches; axillary gland blunt; racemes terminal, 8-flowered. ♄. S. Native of Peru, on the banks of the Macera. Flowers white. Fruit unknown.

Soft Caper-tree. Shrub 8 feet.

82 C. heterophy'lla (Ruiz, et Pav. ined. D. C. prod. 1. p. 250.) leaves smooth, oblong-obovate, mucronate, or emarginate; axillary gland pyxidiform; racemes terminal, somewhat corymbose; fruit club-shaped. ♄. S. Native of Guayaquil, in woods. Flowers small, white. Fruit an inch long.

Variable-leaved Caper-tree. Shrub 8 feet.

83 C. ampli'ssima (Lam. dict. 1. p. 607.) leaves smooth, oval, on short petioles; axillary gland ovate; pedicels few, or solitary at the top of the branches; fruit ovate. ♄. S. Native of Hispaniola and Mexico. Plum. ed Burm. t. 73. f. 2. exclusive of the synonyms. Flowers large, whitish-yellow. Fruit large.

Very ample Caper-tree. Tree 30 feet.,

84 C. saxa'tilis (H. B. et Kunth, ined. et D. C. prod. 1. p. 250.) leaves smooth, oval-oblong, retuse, on short petioles; pedicels loosely-racemose; fruit ovate. ♄. S. Native of Angustura, in the fissures of rocks. Flowers white.

Rock Caper-tree. Shrub 10 feet.

85 C. RACEMO'SA (Mill. dict. no. 5.) leaves opposite, on long footstalks, ovate; peduncles 2-3-flowered. ♄. S. Native of New Spain, near Carthagena. Flowers white. Siliques 2 or 3 inches long, the thickness of a man's little finger.

Racemose Caper-tree. Tree 20 feet.

86 C. DIDYMOBÓTRYS (Ruiz, et Pav. fl. per. 5. t. 429. f. *b.* ined. D. C. prod. 1. p. 253.) leaves oval, emarginate, somewhat keeled, upper surface shining; axillary glands none; peduncles axillary, racemose, in pairs, distich; siliques very long. ♄. S. Native of Guayaquil, in woods. Flowers white.

Double-bunched Caper-tree. Shrub 8 feet.

87 C. MACROCA'RPA (Ruiz, et Pav. fl. per. ined. 5. t. 530. et D. C. prod. 1. p. 250.) leaves smooth, oval, mucronate; glands of the calyx large; sepals and petals acute; berry roundish. ♄. S. Native of Guayaquil, in woods, and near Loxa. Perhaps a proper section. Flowers white.

Large-fruited Caper-tree. Shrub 10 feet.

SECT. IV. CALA'NTHEA (from καλος, *kalos*, beautiful, and ανθος, *anthos*, a flower; because of the species contained in this section bearing beautiful flowers). D. C. prod. 1. p. 150. Sepals somewhat linear, acute, reflexed, distant at the base. Fruit roundish. Species all from America.

88 C. PULCHE'RRIMA (Jacq. amer. t. 106.) leaves smooth, oblong, blunt, on very short footstalks; axillary glands none; racemes terminal, simple; fruit somewhat pointed with the style. ♄. S. Native of Carthagena on declivities of mountains. C. arboréscens, Mill. dict. no. 21. Petals pale yellow, woolly, oblong; filaments at first white, then beautiful purple. Berry yellow.

Very-fair Caper-tree. Clt. 1700. Shrub 12 to 14 feet.

89 C. NEMORO'SA (Jacq. amer. ed. pict. t. 156.) leaves ovate, acuminate, upper surface smooth, under surface clothed with deciduous wool; fruit ovate-oblong. ♄. S. Native of Carthagena in woods. Flowers unknown.

Grove Caper-tree. Tree 20 feet.

SECT. V. BREYNIA'STRUM (plant like *Cápparis Bréynia*). D. C. prod. 1. p. 250. Breyniæ spec. Plum. gen. t. 16. not of Forst. Sepals much smaller than the petals, triangular, acute. Berry oblong. Stalk of fruit shortish. Unarmed species from America. Peduncles axillary, many-flowered.

* *Flowers polyandrous.*

90 C. AMYGDALI'NA (Lam. dict. 1. t. 608. exclusive of the synonym of Jacq. and Lin.) leaves elliptical-oblong, narrowed towards both ends, with a callous point; upper surface smooth, under surface covered with silvery scaly dots as well as the branches; peduncles axillary, compressed, corymbiferous. ♄. S. Native of the West India islands and the continent of South America. Brey. icon. rar. p. 13. icone. Plum. gen. 40. t. 16. Pods a foot long. Flowers white.

Var. β, *umbellàta* (H. B. et Kunth, nov. spec. 5. p. 97.) differing from the species by the leaves being a little narrower.

Almond-like Caper-tree. Clt. 1818. Shrub 6 feet.

91 C. BARCELLONE'NSIS (H. B. et Kunth, nov. spec. 5. p. 97.) leaves elliptical-oblong, acuminate, upper surface of younger leaves pubescent, under surface scaly, as well as the branches; peduncles axillary and terminal, racemiferous. ♄. S. Native of New Barcelona in bushy places. Flowers whitish.

Barcelona Caper-tree. Shrub 8 feet.

92 C. COMÒSA (Jacq. amer. t. 160.) leaves lanceolate, stalked; upper surface smooth, under surface grey-woolly; peduncles many-flowered; stamens shorter than the corolla. ♄. S. Native of St. Domingo in inundated places by the sea-side. Flowers white, sweet-scented.

Tufted Caper-tree. Shrub 6 feet.

FIG. 53.

93 C. ODORATI'SSIMA (Jacq. hort. Schœnbr. t. 110.) leaves oblong, acuminate, on long footstalks, upper surface smooth, under surface covered with little hard scales; peduncles racemiferous at the top; stamens 28-32, length of corolla. ♄. S. Native of Caraccas. Flowers violet, sweet-scented; about the size of a myrtle, with yellow anthers (f. 53.).

Most-sweet-scented Caper-tree. Clt. 1814. Shrub 6 feet.

94 C. PACHA'CA (H. B. et Kunth, nov. spec. 5. p. 93.) leaves ovate-elliptical, somewhat emarginate, leathery, smooth, on very short footstalks; racemes terminal, few-flowered; fruit somewhat globose, pendulous. ♄. S. Native of Cumana in woods. Flowers green. *Pachaca* is the native name of the tree.

Pachaca Caper-tree. Tree 25 feet.

95 C. SCA'BRIDA (H. B. et Kunth, nov. spec. 5. p. 95.) leaves oblong, blunt at the base, acutish at the top, upper surface roughish, under surface somewhat velvety, on long footstalks; branches and racemes tomentose; stamens 24, villous at the base. ♄. S. Native of South America. Fruit ovate-oblong, $1\frac{1}{2}$ inch long. Sepals oval-oblong, conniving into an ovate bud. Flowers white. Perhaps a separate section.

Roughish-leaved Caper-tree. Shrub 6 feet.

96 C. TENUISI'LIQUA (Jacq. amer. t. 105.) leaves lanceolate or ovate, smooth, stalked; racemes terminal, many-flowered; stamens 16-24, and are as well as the siliques very long. ♄. S. Native of Carthagena, very frequent. Flowers greenish-white. Leaves deciduous.

Slender-siliqued Caper-tree. Clt. 1822. Shrub 15 feet.

97 C. OBOVATIFO'LIA (H. B. et Kunth, nov. spec. 5. p. 92.) leaves elliptical-obovate, somewhat cordate, smooth, on very long footstalks; racemes somewhat axillary, many-flowered; siliques somewhat elongated, pendulous. ♄. S. Native near Cumana. Flowers white?

Obovate-leaved Caper-tree. Shrub 6 feet.

98 C. BREVISI'LIQUA (Moc. et Sesse, fl. mex. ined. icon. D. C. prod. 1. p. 251.) leaves elliptical, blunt, emarginate, smooth, on short footstalks; pedicels terminal, 2-3-flowered, umbellate; siliques torulose, twice the length of their stalks. ♄. S. Native of New Spain. Petals oblong-spatulate, whitish-green.

Short-siliqued Caper-tree. Shrub 6 feet.

99 C.? OVALIFÒLIA (Ruiz, & Pav. fl. per. t. 432. f. a. ined. D. C. prod. 1. p. 253.) leaves oval, mucronate or emarginate, under surface hoary-tomentose; racemes many-flowered, axillary and terminal; calyx 4-notched; glands of calyx scale-formed, ciliated; stalk of fruit short. ♄. S. Native of Peru at Ica and of Guayaquil. Petals unguiculate, yellowish, with a purple margin. Stamens declinate, 12-18; exterior ones at the base somewhat monadelphous. Fruit oval.

Oval-leaved Caper-tree. Shrub 10 feet.

** *Flowers octandrous.*

100 C. ANGUSTIFÒLIA (H. B. et Kunth, nov. spec. 5. p. 96. t. 438. leaves linear, somewhat cordate at the base, on very short footstalks; upper surface smooth, under surface somewhat pubescent; peduncles corymbose, and are velvety, as well as the branch-

lets. ♄. S. Native between Mexico and Acapulco. Branchlets sulcately-angular. Bud of flower ovate, woolly. Flowers white.

Narrow-leaved Caper-tree. Shrub 6 feet.

101 C. FERRUGI'NEA (Lin. amœn. 5. p. 398.) leaves lanceolate, acuminate, stalked, upper surface smooth, under surface covered with rusty hard scaly-like hairs; branchlets downy; petioles rusty; peduncles axillary, corymbosely-racemose at the top. ♄. S. Native of Jamaica in bushy places by the sea-side, as well as in St. Domingo.—Browne, jam. t. 28. f. 1. C. octándra, Jacq. amer. t. 100. Flowers white, scentless, fragrant or fetid, according to various authors. The plant is strongly impregnated with an acrid volatile salt, like the mustard tribe; and hence in Jamaica it has obtained the name of the *Mustard Shrub*. (Br. jam.)

Rusty Caper-tree. Clt.? Shrub 4 to 6 feet.

102 C. INCA'NA (H. B. et Kunth, nov. spec. 5. p. 94.) leaves ovate-oblong, very much pointed, and are as well as the branchlets covered with appressed velvety wool; racemes few-flowered, somewhat shorter than the leaves. ♄. S. Native of South America between Mescala and Estola. Petals white, downy on the outside. Filaments of stamens very short. Fruit ovate, hoary, tomentose.

Hoary Caper-tree. Tree 30 feet.

103 C. CORDA'TA (Ruiz, et Pav. fl. per. 5. t. 432. f. b. ined. D. C. prod. 1. p. 251.) leaves cordate, roundish, woolly on both surfaces with stellate down; peduncles racemose, few-flowered; berry somewhat globose, few-seeded. ♄. S. Native of Guayaquil. Flowers white.

Cordate-leaved Caper-tree. Shrub 8 feet.

Sect. VI. QUADRE'LLA (from *quadratus*, square; form of flower-bud) D. C. prod. 1. p. 251. Flower-bud somewhat quadrate, with the sepals valvate in the bud, with their margins somewhat revolute, and hence the sutures are rather prominent. Siliques dehiscent. Stalk of fruit elongated. Unarmed species from America, velvety or covered with scales. Peduncles axillary, many-flowered.

104 C. CROTONOI'DES (H. B. et Kunth, nov. spec. 5. p. 95. t. 437.) leaves cordate-roundish, stalked, upper surface villous, under surface downy, as well as the branches; racemes angular, terminal, few-flowered; stamens 8; fruit globose. ♄. S. Native in hot places by the river Magdalena. Flowers yellow.

Croton-like Caper-tree. Shrub 8 feet.

105 C. FURFURA'CEA (Ruiz, et Pav. in herb. Lamb. D. C. prod. 1. p. 252.) leaves elliptical-oblong, blunt, stalked, upper surface glabrous, under surface, as well as branches and footstalks velvety; racemes terminal, angular, many-flowered; stamens 12, hispid at the base. ♄. S. Native of Mexico. Flowers white.

Scurfy Caper-tree. Shrub 6 feet.

106 C. SIDÆFÒLIA (Ruiz, et Pav. in herb. Lamb. D. C. prod. 1. p. 252.) leaves ovate, cordate at the base, stalked, upper surface in the adult leaves glabrous, under surface velvety with starry down, as well as the branches; racemes terminal, shorter than the leaves, somewhat corymbose. ♄. S. Native of Peru. Stamens and fruit unknown.

Sida-leaved Caper-tree. Shrub 6 feet.

107 C. BRE'YNIA (Lin. spec. 721. Jacq. amer. t. 103. pict. t. 152.) leaves elliptical, leathery, stalked, upper surface glabrous, under surface scaly, as well as the branchlets; peduncles angular, racemosely-corymbose; stamens 16; siliques very long. ♄. S. Native of the West India islands and the South American continent towards the sea in dry coppices. Bréynia Indica and C. cynophallóphora, Lin. spec. ed. 1. p. 503.—Breyn. icon. 13. Leaves covered beneath with a mixture of small silvery and rust-coloured dots or scales. Petals white, tinged with purple; anthers yellow. Flowers about the size ef a myrtle.

Var. β, uniflòra (D. C. prod. 1. p. 252.) C. siliquòsa, Lin. spec. 721. exclusive of the synonyms. This variety has a shorter fruit stalk and very acute leaves, the upper surface is glittering, and the lower surface is covered with ferrugineous and silvery scales or dots.

Breynius's Caper-tree. Fl.? Clt. 1752. Shrub 12 feet.

108 C. JAMAICE'NSIS (Jacq. amer. t. 101.) leaves oblong, emarginate, leathery, upper surface glabrous, under surface and branches covered with grey tomentum; peduncles few-flowered; stamens 20. ♄. S. Native of Jamaica. Fruit like those of *C. Bréynia*, and probably only a variety of it. Flowers yellowish-white, fragrant.

Jamaica Caper-tree. Clt. 1793. Shrub 6 feet.

109 C. TORULÒSA (Swz. fl. ind. occ. 2. p. 932.) leaves ovate-lanceolate, leathery, stalked, upper surface glabrous, under surface scaly, as well as the branches; peduncles few-flowered, racemosely-corymbose; stamens 28; siliques very long. ♄. S. Native of the mountains of Jamaica and Barbadoes in bushy places. Flowers white.—Brown, jam. p. 246-2.

Torulose-siliqued Caper-tree. Clt. 1822. Shrub 6 feet.

110 C. INTERME'DIA (H. B. et Kunth, nov. spec. 5. p. 98.) leaves ovate-lanceolate, leathery, stalked, upper surface glabrous, under surface, as well as branchlets, scaly; peduncles few-flowered, racemosely-corymbose at the top; siliques terete, stalk of fruit short and thick. ♄. S. Native of Cumana, where it is called *Olive*. Flowers white.

Intermediate Caper-tree. Shrub 10 feet.

111 C. COMMUTA'TA (Spreng. new. entd. 3. p. 57.) leaves oblong-lanceolate, glabrous; peduncles racemose, elongated, naked; stamens shorter than the corolla. ♄. S. Native of Guadaloupe and Martinico. Habit of *C. Bréynia*. Flowers white?

Changed Caper-tree. Shrub 8 feet.

† *Capparides; uncertain to which of the sections they belong.*

* *Species natives of the old world.*

112 C. MITHRIDA'TICA (Forsk. descr. 99.) leaves linear-lanceolate, blunt, glabrous, pendulous, stalked. ♄. G. Native of Arabia about Surdub. Perhaps a species of *Cápparis*.

Mithridate Caper-tree. Shrub 6 feet.

N.B. *Cápparis Dàhim* of the same author is omitted, because it is evident from his description that it is a species of *Zygophýllum* or *Cæsalpínia*.

** *Unarmed species from America.*

113 C. NI'TIDA (Ruiz, et Pav. ined. in litt. D. C. prod. 1. p. 252.) leaves oblong, acuminated, shining, glabrous, stalked; peduncles axillary, 1-flowered; fruit oval. ♄. S. Native of the Andes of Peru in groves. Flowers yellow.

Shining-leaved Caper-tree. Tree 30 feet.

114 C. FRUTICÒSA (Mill. dict. no. 7.) leaves lanceolate, acute, leathery, on short footstalks; flowers axillary, on short pedicels. ♄. S. Native of South America near Tolu. Petals white; anthers purple; filaments white.

Shrubby Caper-tree. Shrub 14 feet.

115 C. AVICENNIÆFÒLIA (H. B. et Kunth, nov. spec. 5. p. 94.) leaves elliptical, blunt at both ends, on very short footstalks, upper surface glabrous, under surface as well as younger leaves canescent; racemes shorter than the leaves; calyx campanulate, 4-lobed; stamens scarcely exceeding the petals in length; fruit globose. ♄. S. Native of South America in the sand on the shores of the Pacific ocean and about Guayaquil. Flowers white.

Avicennia-leaved Caper-tree. Shrub 12 feet.

116 C. LONGIFÒLIA (Swz. prod. 81.) leaves linear, acuminate,

on short footstalks, upper surface glabrous, under surface as well as branchlets covered with mealy scales. ♄. S. Native of Jamaica and Barbadoes.—Pluk. phyt. t. 327. f. 6. Flowers white. Perhaps belonging to section *Quadrélla*.

Long-leaved Caper-tree. Shrub 8 feet.

117 C. Dominge'nsis (Spreng. in herb. Balb. D. C. prod. 1. p. 253.) leaves oblong, on short footstalks, upper surface glabrous, under surface as well as branchlets tomentosely-velvety; peduncles corymbose, few-flowered; fruit ovate, velvety; stalk of fruit velvety. ♄. S. Native of St. Domingo. Flowers unknown. Perhaps a species of *Breyniástrum* or *Quadrélla?*

St. Domingo Caper-tree. Shrub 10 feet.

118 C. lauri'na (H. B. et Kunth, nov. spec. 5. p. 93.) leaves oblong, blunt at both ends, stalked, leathery, glabrous; racemes terminal; fruit globose, pendulous. ♄. S. Native of Peru near Guancabamba. Flowers violet-coloured.

Laurel-like Caper-tree. Tree 30 feet.

119 C. angula'ta (Ruiz, et Pav. fl. 5. per. t. 431. D. C. prod. 1. p. 253.) leaves ovate-oblong, mucronate, stalked, upper surface shining, under surface as well as branches velvety from 10-rayed hairs; peduncles terminal, corymbosely racemose; fruit ovate, angular. ♄. S. Native of Guayaquil. Filaments somewhat monadelphous at the base. Flowers white.

Angular-fruited Caper-tree. Tree 10 feet.

120 C. viridiflòra (H. B. et Kunth. nov. spec. 5. p. 92.) leaves oval-oblong, cordate, mucronulate, on long footstalks, upper surface glabrous, under surface as well as branchlets pubescent; racemes terminal, angular; sepals obovate, very short. ♄. S. Native near Cumana in shady places. Flowers greenish. Silique linear.

Green-flowered Caper-tree. Tree 20 feet?

121 C. confe'rta (Mill. dict. no. 8. exclusive of the synonyms) leaves elliptical, both ends acuminated, glabrous, on long footstalks; racemes terminal, velvety; pedicels compressed, shorter than the fruit-stalk. ♄. S. Native of Carthagena. Flowers white. Fruit oval.

Crowded-flowered Caper-tree. Shrub 8 feet.

122 C. pelta'ta; leaves coriaceous, at first round and peltate at the base, but at length becoming broad, cordate, and acuminated, beset with mealy scales while young, as well as the young branches. ♄. S. Native of Caraccas by the sea-side.

Peltate-leaved Caper-tree. Clt. 1824. Tree 15 feet?

* * * *Species doubtful whether they belong to Cápparis.*

123 C.? Cantone'nsis (Lour. fl. coch. ed. Willd. 1. p. 404.) stipulas spinose; leaves ovate, acuminate, glabrous, wrinkled; peduncles racemose; flowers 5-petalled. ♄. G. Native of China near Canton. Flowers white. Fruit ovate.

Canton Caper-tree. Shrub 8 feet.

124 C. bre'vis (Spreng. from Fisch. cat. hort. gorenki, 1808. p. 85.) ovary sessile. ♄. S. Native of?

Short-fruited Caper-tree. Shrub?

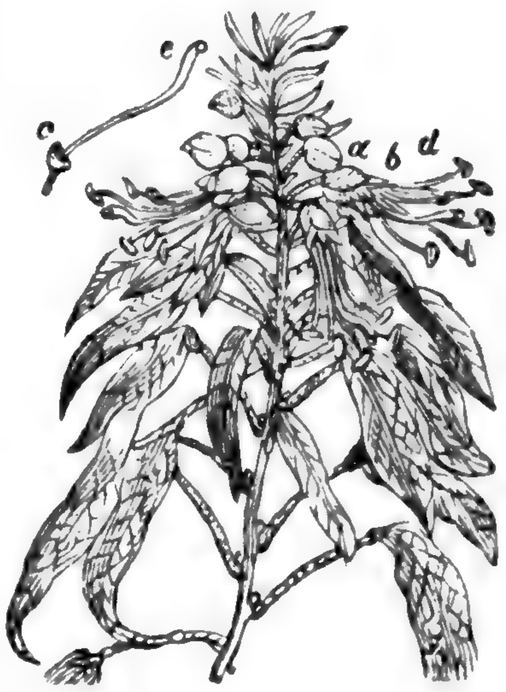
Cult. All the species of *Cápparis* thrive well in a mixture of loam and peat. Cuttings should be taken from young wood, and these will root freely if planted in a pot of sand and placed under a hand-glass; those of the stove species should be placed in a good heat. The *Cápparis herbàcea* is only to be increased by seeds, but cuttings of this may also be tried.

XVI. STEPHA'NIA (in honour of Fred. Stephan, once a professor at Moscow, died 1817, author of Enumeratio stirpium agri Mosquensis, &c.) Willd. spec. 2. p. 239. but not of Lour.

Lin. syst. *Hexándria, Monogýnia.* Calyx campanulate, 2-lobed, (f. 54. *a.*). Petals 4 (f. 54. *b.*). Torus small (f. 54. *c.*). Stamens 6 (f. 54. *d.*). Ovary stipitate (f. 54. *e.*) oblong. All unarmed shrubs, with simple leaves on long footstalks, and terminal racemes of flowers.

1 S. cleomoi'des (Willd. l. c.) leaves oblong-lanceolate, much acuminated, scarcely longer than the footstalks. ♄. S. Native of Caraccas in South America. Cápparis paradóxa, Jacq. schœnb. t. 111. Flowers with a reddish-brown calyx, and yellow petals and stamens.

FIG. 54.



Cleome-like Stephania. Fl. April, July. Clt. 1823. Shrub 6 feet.

2 S. elli'ptica (D. C. prod. 1. p. 253.) leaves elliptical, scarcely acuminated, double the length of the footstalks. ♄. S. Native of the island of Trinidad. Fruit of both species unknown. Flowers yellowish?

Elliptical-leaved Stephania. Shrub 6 feet.

Cult. These plants thrive well in a mixture of loam, peat, and sand. Cuttings should be taken from young wood, planted in a pot of sand, and plunged in heat under a hand-glass. They are worth cultivating for the beauty of their flowers.

XVII. MORISO'NIA (to the memory of Robert Morison, a Scotchman, once director of the Royal Garden at Blois, afterwards Professor of Botany at Oxford, author of Plantarum Historia Universalis Oxoniensis, 1680, 2 vol. fol. He died 1683.) Plum. gen. t. 23. D. C. prod. 1. p. 254.

Lin. syst. *Polyándria, Monogýnia.* Calyx obovate, bifid. Petals 4. Torus small. Stamens 20, somewhat monadelphous at the base? Berry stipitate, globose. A tree with glabrous stalked alternate simple leaves, and dirty-white flowers.

1 M. America'na (Lin. spec. 719. Jacq. amer. t. 97.) ♄. S. Native of the West India islands, as well as the South American continent. Cápparis Morisònia, Swartz, obs. 272. This tree is called in Martinique *Bois Mabouia.*

American Morisonia. Clt. 1824. Tree 15 feet.

Cult. This tree requires the same treatment as the species of *Stephània*, which see above.

XVIII. TOVA'RIA (in honour of Simon Tovario, a Spanish physician.) Ruiz, et Pav. fl. per. 3. p. 73. t. 309. in herb. Lamb. and D. Don, in Edinb. new phil. journ. oct. 1828.

Lin. syst. *Octándria, Monogýnia.* Calyx of 8 sepals, rarely 6-7 or 9, spreading, deciduous. Petals the same number, inserted in an elevated fleshy tubercled disk. Stamens the same number, also inserted in the disk; filaments awl-shaped, pilose at the base; anthers bursting inwards. Ovary 1-celled, spherical, seated on the disk. Style short, thick, crowned by an 8-lobed stigma. Berry succulent, 8-nerved, many-seeded. A smooth green annual erect branched herb, with ternate leaves and many-flowered terminal pendulous racemes. Flowers white, small. The berry when mature is about the size of a cherry. The plant has the habit of *Cleòme*, but with the fruit of the form and structure of *Morisònia* and *Cratæ'va*. The structure of the stigma shews its affinity to *Papaveràcea*, and the structure of its seeds accords precisely with *Resèda*.

1 T. pe'ndula (Ruiz. et Pav. l. c. and syst. 1. p. 85. gen. p. 49. t. 8. Pav. in act. acad. madr. 1. p. 192.) ⊙. S. Native of Peru in groves between Chinchao and Pati.

Pendulous-racemed Tovaria. Fl. Aug. Sep. Pl. 6 feet.

Cult. The seeds of this plant should be sown in a pot in spring, and placed in a hot-bed frame, and when the plants are about three inches high, they should be planted separately in small pots, and then placed again in the hot-bed; they should afterwards be shifted into larger pots from time to time as they

grow. About the end of June they should be removed into the green-house, where they will flower and seed. A few plants may be planted out into a sheltered situation in the open border, in order to ascertain whether the plant will grow in the open air.

XIX. THYLA'CHIUM (from *θυλακιον*, *thulakion*, a sack or follicle; in allusion to the form of the calyx.) Lour. coch. 1. p. 342. D. C. prod. 1. p. 254.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx follicular, at length cut round at the base. Petals none. Stamens indefinite, seated on a short receptacle. Berry oblong, 1-seeded, stipitate. Unarmed shrubs, with variable leaves. Peduncles few or many-flowered, terminal.

1 T. lu'cidum (D. C. prod. 1. p. 254.) leaves entire, elliptical, acutish, glabrous; branchlets and footstalks velvety; berry ovate-globose. ♄. G. Native of Booby Island, lying between New Holland and New Guinea. Cápparis lùcida, Banks, herb. Flowers with copper-coloured stamens and anthers.

Shining-leaved Thylachium. Shrub 10 feet.

2 T. Africa'num (Lour. l. c.) leaves entire, ovate, mucronulate, and are, as well as the branches, glabrous; berry oblong. ♄. S. Native of the eastern coast of Africa. T. ovalifòlium, Juss. ann. 12. p. 71. Flowers with copper-coloured stamens and anthers.

African Thylachium. Shrub 10 feet.

3 T. heterophy'llum (Juss. ann. 12. p. 71.) leaves glabrous, some of which are simple, others trifoliate. ♄. S. Native of Madagascar. Cápparis panduriformis, Pet. Th. obs. afr. aust. p. 26. Flowers with brownish stamens.

Variable-leaved Thylachium. Shrub 8 feet.

4 T. pandurifo'rme (Juss. ann. 12. p. 71.) leaves glabrous, some of which are simple, fiddle-shaped, others are trifoliate. ♄. S. Native of the Mauritius. Cápparis panduriformis, Lam. dict. 1. p. 609. Flowers with brownish stamens.

Fiddle-shaped-leaved Thylachium. Shrub 10 feet.

5 T.? oppositiflo'rum (D. C. prod. 1. p. 254.) leaves glabrous, ovate-lanceolate, somewhat cordate at the base, entire; pedicels 1-flowered, opposite the leaves. ♄. S. Native of the West Indies.

Opposite-flowered Thylachium. Shrub 8 feet.

Cult. No species of this genus has as yet been introduced into European gardens, but should they be, we would advise that they should be treated in the same manner as the genus *Stephània*, which see, p. 285.

XX. HERMU'POA (native name of the plant.) Lœfl. itin. 307. D. C. prod. 1. p. 254.

Lin. syst. *Hexándria*, *Monogýnia*. Calyx double, exterior one tubular, interior one 4-sepalled, small. Petals 4, linear. Stamens 6, very long. Berry oblong, cylindrical. Allied to *C. Bréynia*, from Lœfl. Perhaps the interior calyx should be termed a nectary.

1 H. Lœflingia'na (D. C. prod. 1. p. 254.) ♄. S. Native of South America. Flower scarlet. †

Lœfling's Hermupoa-tree. Tree 20 feet?

Cult. This plant has not yet been introduced, therefore the mode of cultivating and propagating it is not known; but we would recommend its being treated in the same manner as *Stephània*. See p. 285.

XXI. MÆ'RUA (*Meru* is the Arabic name of *M. uniflòra*.) Forsk. ægyp. 104. D. C. prod. 1. p. 254.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx tubular, 4-parted, valvate in the bud; throat crowned with petaloid scales. Petals none. Torus elongated. Stamens indefinite, seated on the top of the receptacle, somewhat monadelphous at the base. Silique fleshy, stipitate. Unarmed, downy shrubs, with simple coriaceous leaves, furnished with setaceous stipulas.

1 M. uniflo'ra (Vahl. symb. 1. p. 36.) pedicels axillary, solitary, 1-flowered; petaloid crown filamentosely jagged; leaves veinless. ♄. S. Native of Arabia Felix at Yemen. M. crassifòlia, Forsk. l. c. Flowers with white filaments and yellow anthers.

One-flowered Mærua. Shrub 4 feet.

2 M. Angole'nsis (D. C. prod. 1. p. 254.) pedicels axillary, solitary, 1-flowered; petaloid crown 4-lobed, with deeply-jagged lobes; leaves in the middle 1-nerved. ♄. S. Native of Angola. Perhaps sufficiently distinct from *M. uniflòra*.

Angola Mærua. Shrub 6 feet?

3 M. racemòsa (Vahl. symb. 1. p. 36.) racemes terminal, drooping; petaloid crown entire. ♄. G. Native of Arabia.

Racemose-flowered Mærua. Shrub 6 feet?

4 M. rígida (R. Br. in append. to Clapp. and Denh. trav.) corymbs terminal, few-flowered; leaves obovate, thick, rigid, downy, veinless; petaloid crown, many-parted. ♄. G. Native of the north of Africa, at Aghedem.

Rigid-leaved Mærua. Shrub 4 feet.

5 M. Senegale'nsis (R. Br. ined.) corymbs terminal, scarcely pubescent; leaves ovate or obovate, distinctly veined; petaloid crown many-parted. ♄. S. Native of Senegal.

Senegal Mærua. Shrub.

Cult. These shrubs will no doubt thrive well in a mixture of loam and peat, and cuttings taken from young wood will strike root if planted in a pot of sand, placed under a hand-glass, in a moderate heat.

XXII. A'RSIS (from *αρσις*, *arsis*, elevation; because of the fruit being seated on a long pedicel within the calyx.) Lour. fl. coch. p. 335.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 5-coloured deciduous sepals. Petals 5. Stamens numerous, seated on an elongated receptacle; anthers 4-celled. Berry stipitate, 1-seeded. A small branched shrub, with ovate-lanceolate, wrinkled, quite entire leaves, and terminal racemes of small white flowers.

1 A. rugo'sa (Lour. l. c.) ♄. G. Native of Cochinchina.

Wrinkled-leaved Arsis. Shrub 5 feet.

Cult. A mixture of loam and sand will suit this shrub well, and cuttings will strike root if planted in a pot of sand, placed under a hand-glass.

Order XVI. RESEDA'CEÆ (plant agreeing with *Resèda* in some important characters). D. C.

Calyx of 4-5-6 permanent segments, which are slightly open in the bud, or rotate 5-toothed, as in *Ochradènus*. Petals open in æstivation, equal in number with the segments or teeth of the calyx, and alternating with them, usually fringed or cleft, furnished with broad claws, and inserted at the base of the elevated, dilated disk. Stamens definite, 2 or 3 for each petal, inserted in the disk; they are rather connate at the base. Anthers 2-celled, at first erect, at length incumbent, and sometimes as if they were bursting outwardly; cells parallel, 2-valved, free at the base, the rest connate, opening by a longitudinal suture; the outer valve is largest. Ovary trigonal, or tetragonal, pedicelled, with the pedicel closely fenced by the connate base of the filaments. Style none. Stigma 3-4-lobed, with the lobes equal in number to the angles of the capsule, and alternating with them, spreading, 2-valved; valves connivent, truncate, and papillosely-hispid at

the top. Capsules (berry in *Ochradènus*) trigonal or tetragonal, membranous, inflated, open at the top, with the seminiferous nerves equal in number with the stigmas; these are perpendicular and parietal. Seeds simple, cochleated, sessile, pendulous, white or yellow, disposed in an alternate double series, but they are sometimes scattered from abortion; umbilicus small, oblique, with the upper side approximating the recess of the radicle; outer coat of seed crustaceous, ornamented with minute dots, disposed in elevated lines; inner coat membranous, diaphanous. Albumen none. Embryo curved, conforming to the cavity of the seed, terete, yellowish, rather narrowed towards the base, with semi-cylindrical cotyledons, and with a superior cylindrical thick radicle, which is very blunt at the base, and equal in length with the cotyledons, and opposite the umbilicus. This order agrees with *Ranunculàceæ*, especially with *Delphínium*, in the complicated stigma, and structure of the ovary, as well as in the seminiferous placentas. It is also allied to *Capparídeæ* and *Tropæòleæ*, in the petals being unguiculate, as well as in the seed being destitute of albumen. The *Capparídeæ*, *Resedàceæ*, *Crucíferæ*, *Papaveràceæ*, and *Tropæòleæ*, appear to constitute a grand natural class; and near to them, but at different points, must be arranged the *Ranunculàceæ*, *Polygàleæ*, and *Balsamíneæ*, an arrangement which the many analogies and affinities existing between these families appear to justify.

Most of the species of *Resèda* are rather ornamental; and *R. odoràta* is cultivated extensively for the fragrance of its blossoms. All the species are herbaceous, or slightly suffruticose. The leaves are simple, trifid, or pinnate; and the flowers, which are either yellow or white, are small, disposed in dense or loose terminal racemes. The seeds are kidney-shaped, and retain their vegetating power a considerable time, therefore they are easily introduced, in a living state, from one part of the world to another.

This Order differs from *Crucíferæ* in the capsules being unilocular, in the stamens being indefinite, in the seeds being destitute of an umbilical cord, as well as in the capsules being bladdery and open at the top. It differs in these two last characters from all the neighbouring orders, except *Datísceæ*.

Synopsis of the Genera.

1 Rese'da. Calyx of 4-5-6 narrow segments. Petals 4-5-6 cloven. Capsule bladdery, 3-4 horned, many-seeded.

2 Ochrade'nus. Calyx rotate, 5-toothed, replete with an annular gland. Petals wanting. Berry many-seeded.

I. RESE'DA (from *resedo*, to calm, to appease; the Latins thought it useful as a topical application in external bruises.) Lin. gen. ed. Schrœb. no. 831. Willd. spec. 2. p. 876.

Lin. syst. *Octo-Polyándria. Tri-Tetragýnia.* Calyx divided almost to the base into 4-5-6 narrow segments. Petals cleft, equal in number with the segments of the calyx. Capsule bladdery, with a hole at the top when ripe. Herbaceous or slightly shrubby plants.

§ 1. *Leaves simple, entire. Petals trifid and quinquifid. Torus much dilated on one side.*

1 R. sesamoìdes (Lin. spec. 644.) leaves lanceolate, entire, obtuse, smooth; petals 5; capsule furnished with 4 reflexed horns. ♃. H. Native of the south of France, Spain, and Portugal, on walls and among rubbish. Flowers small, white, in long racemes. Stems prostrate. Calyx reflexed, 3 of the segments pointed upwards, and 2 downwards.

Sesamum-like Mignonette. Fl. June, July. Clt. 1787. Pl. 1 foot long.

2 R. purpura'scens (Lin. spec. 644.) leaves linear, obtuse; flowers pentagynous. ♃. H. Native of the south of Europe, particularly about Montpelier. Stem purplish. Leaves like flax. Flowers of greenish-purple colour, in long spikes.

Purplish Mignonette. Fl. Ju. July. Pl. ½ foot.

3 R. linifo'lia (Horn. hort. hafn. 2. p. 501.) leaves linear-awl-shaped, channelled; capsules 3-toothed. ⊙. H. Native of the south of Europe and Egypt. R. subulàta Delîle. ill. p. 15.

Flax-leaved Mignonette. Fl. July, August. Clt. 1819. Pl. 1 foot.

4 R. glau'ca (Lin. spec. 644.) leaves linear, glaucous, toothed at the base; flowers tetragynous. ♃. H. Native of Spain and Egypt.—Mor. oxon. 3. p. 601. sect. 15. t. 6. f. 4. Flowers pale yellow, disposed in long spikes. Pinnula of leaves not changed into scarious teeth. (*Link.*)

Glaucous Mignonette. Fl. May, Jul. Clt. 1748. Pl. 1 ft.

5 R. dipe'tala (Ait. hort. kew. ed. 1. vol. 2. p. 132.) leaves linear, quite entire, acute; flowers tetragynous, 2-petalled; petals undivided. ♂. G. Native of the Cape of Good Hope. R. Capénsis, Burm. prod. cap. 13. Habit of *R. sesamoìdes*. Stem suffruticose, erect, branched; branches round, smooth. Flowers white, remote, in terminal racemes. Segments of calyx 6, minute, with white margins. Petals cuneated, quite entire. Capsule globose.

Two-petalled Mignonette. Fl. Aug. Clt. 1774. Pl. 1½ foot

6 R. scopa'ria (Brouss. in Willd. enum. 499.) leaves linear, quite entire, smoothish; stem shrubby; branches twiggy; capsules clavate, 3-toothed. ♄. G. Native of Teneriffe. Flowers yellow. This species comes very near *R. glaúca*. Capsule tapering to the base.

Broom Mignonette. Fl. Ju. Sep. Clt. 1815. Shr. 1 foot.

7 R. cane'scens (Lin. syst. 448.) leaves lanceolate, entire, wavy, pilose; branches hairy; capsules 6-toothed. ♃. H. Native of Egypt. R. hexágyna, Forsk. descr. 92. Stem erect. Leaves with a pilose keel, and rather ciliated margins. Flowers in racemes, with white petals and yellow anthers. Clus. hist. 1. p. 296. t. 295. It appears from the description in Lin. spec. 644. that Linnæus intended a very different plant from that which he describes in his systema, as well as in his reference to *Clusius*.

Canescent Mignonette. Fl. May, Aug. Clt. 1597. Pl. 1 foot.

8 R. lute'ola (Lin. spec. 643.) leaves lanceolate, entire, but furnished with a tooth on each side, at the base; calyx 4-cleft, upper petal quinquefid, lateral ones trifid, lower one bifid or simple. ⊙. H. Native of Europe in pastures, fallow-fields, waste-places, and on dry banks and walls. Smith, eng. bot. t. 321. Jacq. aust. 4. t. 352. Flowers yellow, trigynous, in long spikes which are nodding at the top. It is an observation of Linnæus, that the nodding spike of the flower follows the course of the sun, even when the sky is covered; pointing towards the east in the morning, to the south at noon, westward in the afternoon, and north at night. Dyers formerly made considerable use of this plant; for it affords a most beautiful yellow dye for cotton, woollen, silk, and linen. Blue cloths are dipped in a decoction of it in order to become green. The yellow colour of the paint called Dutch-pink is obtained from this plant. The entire plant when it is about flowering is pulled up for the use of the dyers, who employ it

both fresh and dried. In various authors the plant has the names of *Dyers'-weed*, *Yellow-weed*, *Weld*, *Woud*, *Woold*, and *Wild Woad*. The seeds are usually sown after barley is taken off the ground in autumn, or it is very commonly sown with barley in the spring, but the first mode is the best, because the plants make some progress the first year, and in the following season they will be twice the size of those sown in spring. After the ground has been well ploughed and harrowed the seeds should be sown broad-cast, of which one gallon is sufficient for an acre. Unless the ground is very poor it will not require any dung. The best crops, however, will be the result of drilling and cultivating the crop alone. The drills may be a foot apart, and the plants 6 inches distance, in the rows. The plants should be kept clear of weeds by hoeing. When seeds are required a small portion should be left standing for this purpose, and the plants should be pulled as the seeds ripen. The whole crop may be cleared off before the time of sowing wheat, which is the best crop to follow *Dyers'-woold*. The crop is taken by pulling the entire plant; some pull it when in flower, others pull it earlier, but the last appears to be the best. In the execution of the work, the plants are drawn up by the roots in small handfuls, and set up to dry, after being tied with one of the stalks; sometimes, however, they become sufficiently dry without being set up, by turning. These, after they have been completely dried, are tied up into bundles and sold by the name of *Weld-cord*. The demand for it is sometimes very little, while at others it is so great as to raise the price to a high degree. The herb is sometimes gathered green and treated like Woad or Indigo, but in general the dried herb is used by the dyers in a state of decoction. The chief disease of *Weld* is the mildew, to which it is very liable when young, and this is one reason that it is often sown with other crops.

Dyers'-Weed. Fl. Jun. Aug. Britain. Pl. 1 to 3 feet.

9 R. crispa'ta (Link. enum. 2. p. 8.) leaves lanceolate, entire, waved, with 2-glands at the base. ⊙. H. Native of Spain. R. lanceolàta, Lag. Flowers yellow, similar to those of *R. Lutèola*.

Curled-leaved Dyers'-Weed. Fl. Ju. Aug. Clt. 1820. Pl. 1 ft.

10 R. vire'scens (Horn. hort. hafn. 2. p. 501.) leaves linear-lanceolate, smooth, quite entire; capsules 4-toothed. ⊙. H. Native of Spain. Flowers greenish-yellow, in long slender spikes.

Greenish Dyers'-Weed. Fl. Ju. Jul. Clt. 1820. Pl. 1 foot.

11 R. Chine'nsis (Lour. fl. cochin. p. 299.) leaves broad-lanceolate, quite entire, smooth, calyx 5-parted; capsules 3-toothed. ⊙. H. Native of the south of China, in the suburbs of Canton. Flowers yellow, in spikes. This species and the following is very like the *R. Lutèola*, and like it affords a yellow dye.

Chinese Dyers'-Weed. Fl. Ju. Jul. Clt. 1819. Pl. 1 foot.

12 R. Cochin-chine'nsis (Lour. fl. cochin. p. 299.) leaves broad-lanceolate, 5-nerved, quite entire; calyx 5-parted; capsules 3-toothed. ⊙. H. Native of Cochin-china. Flowers trigynous, yellowish, in spikes. Petals jagged. Plant slender.

Cochin-china Dyers'-Weed. Fl. Ju. Jul. Pl. 1 foot.

§. 2. *Leaves entire and trifid on the same plant. Segments of the petals inserted on the back of the claws. Torus much dilated on one side.*

13 R. Mediterra'nea (Lin. syst. 448.) leaves lanceolate, entire, and trifid; calyx 6-parted, larger than the petals. ⊙. H. Native of the north of Africa, Palestine, &c. Jacq. icon. rar. t. 475. Lindl. coll. t. 22. R. tetrágyna, Forsk. descr. 90. Flowers with white petals, the 2 superior ones are 3-parted, the two lateral ones 2-parted; the two lowest ones linear. Capsules 3-horned. Both leaves and stems are scabrous; the uppermost cauline leaves trifid.

Mediterranean Mignonette. Fl. June, Oct. Clt. 1791. Pl. 1 foot.

14 R. odora'ta (Lin. spec. 646.) leaves lanceolate, bluntish, entire or trifid; calyx 6-parted, equal in length to the petals, which are finely cleft into many club-shaped divisions; the two lowest simple; capsules 3-toothed. ⊙. H. Native of the north of Africa, Egypt, &c. Mill. fig. t. 217. Curt. bot. mag. t. 29. Plant diffuse, with a few hairs on the stems. Flowers with yellowish-white petals and saffron anthers, disposed in loose racemes. The two upper petals and the two lateral ones are finely fringed, the two lower ones are very narrow. The luxury of the pleasure garden, says Curtis, is greatly heightened by the delightful odour which this plant diffuses; and as it grows more readily in pots, its fragrance can be conveyed into the house.

Var. β, frutéscens (Ker. bot. reg. 227.) this plant does not appear to differ from the common *Mignonette*, unless that the stems are shrubby, but it is known that if the common *Mignonette* were kept as a green-house plant, and trained up in the same way, it would also become shrubby.

The *Mignonette* is a well known and universal favorite. The flowers are highly odoriferous, and there are very few to whom this odour is offensive. The plant in pots is in great demand in London for rooms and placing in balconies, and forms for these purposes an extensive article of culture among florists and market-gardeners. The seeds are either sown in pots, or transplanted into pots, 4 or 6 plants to a pot 4 inches in diameter. "To obtain plants for flowering from December to February, a sowing should be made in July, in the open ground, and the plants potted in September. The crop for March, April, and May, should be sown in pots not later than the 25th of August; the plants from this sowing will not suffer from exposure to rain whilst they are young; they must, however, be protected from early frosts, like the winter-crop; they are to be thinned in November, leaving not more than 8 or 10 plants in a pot; and at the same time the pots should be sunk 3 or 4 inches in some old tan or coal-ashes, and should be covered with a frame, which it is best to place fronting the west, for then the lights may be left open in the evening, to catch the sun whenever it sets clear. The third, or spring-crop, should be sown in pots, not later than the 25th of February. These must be placed in a frame, on a gentle heat; and as the heat declines, the pots must be let down three or four inches into the dung-bed, which will keep the roots moist, and prevent their leaves turning brown, from the heat of the sun in April and May. The plants thus obtained will be in perfection by the end of May, and be ready to succeed those raised by the autumnal sowing." (Rishon. hort. trans. 2. p. 375.)

The *Tree-Mignonette* should be propagated from seeds sown in spring; it may also be increased by cuttings, which strike root readily. The young plants should be potted singly into small pots, and brought forward by heat on a gentle hot-bed, but they will grow well without artificial heat. As they advance they should be tied to a stick, taking care to prevent the growth of smaller side shoots by pinching them off, but allowing the leaves of the main stem to remain on for a time. When they have attained the height of ten inches, or more, according to the fancy of the cultivator, the shoots must be suffered to extend themselves from the top, but must be occasionally stopped at the ends, to force them to form a bushy head, which by the autumn will be eight or nine inches in diameter, and covered with bloom. Whilst the plants are attaining the proper size, they should be shifted progressively into larger pots, and may be ultimately left in those of about six inches in diameter at the top. (*Sabine, hort. trans.* 3. p. 181.)

Sweet-scented Mignonette. Fl. June, Oct. Clt. 1752 or 1739. Pl. diffuse.

15 R. PHYTEU'MA (Lin. spec. 645.) leaves lanceolate, spatulate, upper ones sometimes a little divided; calyx 5-parted, spatulate, ciliated, much longer than the petals. ⊙. H. Native of France, Austria, Italy, Switzerland, and the Levant. Jacq. aust. 2. t. 132. Plant decumbent, scabrous from short bristles. Flowers with white petals, which are very finely fringed, and yellow anthers. Capsules 3-toothed.

Phyteuma Mignonette. Fl. May, Sept. Cl. 1752. Pl. decumb.

16 R. RAMOSI'SSIMA (Pour. in Willd. enum. p. 499.) leaves linear, undivided, sometimes trifid; stem erect, much branched; calyx 6-parted; capsules obovate, 3-toothed. ♃. H. Native of Spain. R. récta, Lag. Flowers with white petals, which are variously jagged, and yellow anthers.

Much-branched Mignonette. Fl. Ju. Aug. Clt. 1816. Pl. 2 ft.

§ 3. *Leaves all trifid. Petals usually bifid or trifid, when the last is the case the middle segment is very narrow, the lateral ones always falcate. Torus much dilated on one side.*

17 R. SAXA'TILIS (Pour. in Willd. enum. p. 500.) leaves all trifid; segments linear, but those of the lower leaves are lanceolate and wavy; stem simple; calyx 6-parted; flowers pendulous; capsules erect, clavated, 3-toothed? ♂. H. Native of Spain. R. stricta, Pers. ench. 2. p. 10. Petals white, very finely fringed or trifid? Stem erect.

Rock Mignonette. Fl. June, July. Clt. 1816. Pl. 1 foot.

18 R. PRUINÒSA (Delile, ill. ægypt. 15.) hispid and pruinose; leaves all trifid; segments sometimes bifid, sometimes trifid, all obtuse, lateral ones narrow, middle one broad and rounded at the apex; stem and leaves covered with pruinose papillæ, most evident towards the top; calyx 6-parted; petals bifid or trifid; capsules bluntly 3-toothed. ♃. H. Native of Egypt. Flowers yellow.

Frosty Mignonette. Fl. May, July. Clt. 1824. Pl. 1 foot.

19 R. LÆVIGA'TA; leaves all trifid; segments linear or lanceolate, mucronate, upper ones finely ciliated or serrulated; stem much branched; calyx 6-parted, linear. ♂. H. Native of Egypt. A smooth much-branched plant. Stem with a very few minute bristles on the angles. Flowers yellow; petals bifid or trifid. Capsule bluntly 3-toothed. Leaves sometimes simple.

Smoothed Mignonette. Fl. May, Aug. Clt. 1828. Pl. 1 to 2 ft.

20 R. GRA'CILIS (Tenore, prod. app. fl. nap. ex Schlecht. Linnæa 3. p. 100.) stem diffuse, much branched; leaves all trifid; segments linear, slender, intermediate one rarely bifid; capsules clavated, elongated, sharply tricuspidate. ♂. H. Native of Calabria and Lucania. Like *R. lùtea*, but differs in the stems being more branched, as well as in the leaves being all trifid. It differs from *R. saxátilis*, in the stem being branched and diffuse, not simple and straight.

Slender Mignonette. Fl. June, July. Pl. 1 foot.

21 R. LU'TEA (Lin. spec. 645.) smooth; lower leaves pinnatifid, upper ones 3-parted; segments narrow, entire, or wavy; calyx 6-parted; lower petals simple? capsule 3-toothed. ⊙. or ♃. H. Native of many parts of Europe, abundant in Britain on chalky hills and waste places. Jacq. aust. t. 353. Smith, eng. bot. t. 321. Flowers yellowish. Ray and Haller remark, that this plant has an oleraceous taste resembling that of cabbage. Petals bifid or trifid.

Yellow Mignonette or Base Rocket. Fl. July, Aug. Britain. Pl. 1 to 2 feet.

§ 3. *Leaves all pinnate or pinnatifid. Petals 3-parted or 3-lobed.*

22 R. UNDA'TA (Lin. spec. 644.) leaves all pinnatifid; segments linear-lanceolate, mucronate, waved, with scabrous margins; racemes slender, spicate; calyx 5-parted; petals trifid; capsules 3-4-horned. ♂. H. Native of Spain and Italy, and other parts of the south of Europe.—Barrel. icon. rar. 78. t. 588. The leaves of this plant are sometimes interruptedly pinnate, the intermediate leaflets much smaller than the others, and of a different form and more upright. The flowers are said to have 3-4-5 styles; the petals are white and the anthers are yellow. Capsules large.

Waved-leaved Mignonette. Fl. May, Sep. Clt. 1739. Pl. 2 ft.

23 R. PROPI'NQUA (R. Br. in append. to Clapp. and Denh. trav.) this species comes near to *R. undàta*. It is remarkable in having the claws of all the petals simple; that is, neither dilated or thickened, nor having any process or appendage at the point or union, with a trifid lamina, into which they gradually pass. (R. Br. l. c.) ⊙? H. Native near Tripoli and between Tripoli and Mourzuk. Dr. Oudney. The remarkable structure of the petals we think will be found in *R. álba*, *undàta*, and many others.

Related Mignonette. Pl. 1 to 2 feet.

24 R. A'LBA (Lin. spec. 645.) leaves all pinnatifid; segments lanceolate, smooth, rarely waved; racemes dense; calyx 5-6-parted; petals 3-lobed; capsules 4-horned. ♂. H. Native of the south of Europe and north of Africa. R. fruticulòsa, Jacq. icon. rar. 3. t. 474. The leaves are sometimes interruptedly pinnate, with the intermediate ones smallest. Flowers in dense spikes, with white petals and brownish anthers.—Lob. icon. 222. In the Fl. græc. *R. álba* is figured with quinquefid petals; we doubt the correctness of this.

White Mignonette. Fl. May, Sep. Clt. 1596 or 1693. Pl. 2 ft.

25 R. FRUTICULÒSA (Lin. spec. 645.) leaves interruptedly pinnate; segments lanceolate, recurved, with scabrous margins; terminal segment large; stem shrubby at the base; calyx 5-parted; petals 3-lobed; capsules 4-horned, with the horns recurved. ♄. ♃. H. Native of Spain and Sicily. The racemes are rather slender. The petals are white, and the anthers yellowish. We suspect that this and the three preceding species are only varieties.

Small-*shrubby* Mignonette. Fl. May, Sep. Clt. 1794. Pl. 2 ft.

26 R. BIPINNA'TA (Willd. enum. 500.) leaves bipinnatifid, very scabrous; stem suffruticose; racemes densely spicate. ♄. F. Native of Spain on gypsaceous rocks near Aranjuez. Flowers with white trifid petals and yellowish anthers. Very like *R. álba*.

Bipinnate-leaved Mignonette. Fl. Ju. Aug. Clt. 1816. Pl. 2 ft.

27 R. MIRIOPHY'LLA (Tenore, fl. nap. app. prim. p. 28.) leaves pinnate, with 12 pairs of segments, which are linear and blunt, straight and approximate, entire, but the terminal one is 3-lobed; flowers tetragynous; calyx 5-parted, erect. ⊙. H. Native of Naples. Flowers with white 3-parted? petals and yellowish anthers.

Thousand-leaved Mignonette. Fl. June, July. Clt. 1823. Pl. 1 to 2 feet.

28 R. INCI'SA (Tenore, fl. nap. app. prim. p. 28.) leaves interruptedly pinnate, with many pairs of segments; these are linear acute and cut, approximate; flowers tetragynous; calyx 5-parted, erect; petals 3-parted? ⊙. H. Native of Naples. Flowers with white petals and yellow anthers.

Cut-leaved Mignonette. Fl. June, July. Pl. 1 to 2 feet.

Cult. The seeds of these plants only require to be sown in the open ground, and the plants afterwards treated as other hardy annuals and biennials. The suffruticose species require shelter during winter; these are either propagated by seeds or cuttings.

II. OCHRADE'NUS (from *οχρος*, *ochros*, yellow, and *αδην*, *aden*, a gland; colour of the gland, or rather disk of the flower.) Delile. ill. ægypt. 15.

Lin. syst. *Polyándria, Trigýnia.* Calyx rotate, 5-toothed, replete with an annular gland or rather disk. Petals wanting. Berry many-seeded. A small shrub, with numerous twiggy, straight, smooth branches. Leaves linear bluntish, furnished on each side with a glandular tubercle. Flowers in spikes, yellow. Peduncles at length becoming spinescent.

1 O. bacca'tus (Delile. l. c.) ♄. F. Native of Upper Egypt.

Baccate-fruited Ochradenus. Shrub 1 foot.

Cult. See *R. odoràta frutéscens* for the culture and propagation of this plant.

Order XVII. DATI'SCEÆ (this order only contains the genus *Datísca.*) R. Br. in Clapp. and Denh. trav. appendix.

Flowers dioecious from abortion. Male flowers with the calyx of 5 linear equal acute sepals. Corolla wanting. Stamens about 15, inserted in the receptacle, very short; anthers oblong, obtuse, much longer than the calyx, 2-celled, bursting inwards. Female flowers, with a superior, erect, bidentate, minute, permanent calyx. Corolla none. Ovary oblong, inferior. Styles 3, short, cloven; stigmas simple, oblong, shaggy. Capsule prismatic, crowned by the permanent styles, with 3-valves and 1-cell, with a hole at the top as in *Resèda.* Seeds small, numerous, ranged along 3-4 or 5 placentarious nerves in the capsule. Albumen pale, fleshy. Embryo straight, terete, with very short cotyledons, and a long thick centrifugal radicle.

This order comes very near to *Resedàceæ,* but differs in the seeds being furnished with albumen, in the flowers being apetalous, in the calyx being adherent, and in the fruit being inferior. Large coarse perennial herbs, having the appearance of *hemp,* with pinnate leaves and long spiked racemes of insignificant flowers, resembling those of some species of *Resèda;* they appear to be yellowish-green from the colour of the anthers. Ripe seeds of these plants are easily introduced in a living state from their native countries on account of the copious albumen. The genus *Tetrámelis* of R. Br. belongs to this order, and is remarkable in the quaternary division of every part of the dioecious flower. The plant is a native of Java.

I. DATI'SCA (meaning unknown.) Lin. gen. 530. Juss. gen. 445. Gært. fruct. 1. t. 147. t. 30.

Lin. syst. *Diœ'cia, Polyándria.* Character the same as that of the order.

1 D. cannabi'na (Lin. spec. 649.) leaflets deeply serrated, pale-green; stem and leaves smooth. ♃. H. Native of Candia and some other parts in the south of Europe. Alp. exot. t. 294.—Mor. hist. 3. p. 433. sect. 11. t. 25. f. 3-4.

Bastard *Hemp.* Fl. June, Aug. Clt. 1739. Pl. 4 feet.

2 D. hi'rta (Lin. spec. 1469.) leaflets deeply serrated, larger, more alternate, and more decurrent and confluent at the base than in the last species; stem hairy. ♃. H. Native of Pennsylvania. Flowers in terminal panicles.

Hairy-stemmed Bastard Hemp. Fl. June, Aug. Clt.? Pl. 3 to 4 feet.

3 D. Nepale'nsis (D. Don, prod. fl. nep. p. 203.) leaflets 5, ovate-lanceolate, serrated; male flowers octandrous; stem and leaves smooth. ♃. H. Native of Nipaul. This species differs from *D. cannabìna,* in the male flowers having 8 anthers, not 10-15, as well as in the stigmas being much shorter.

Nipaul Bastard Hemp. Fl. June, Aug. Pl. 3 to 4 feet.

Cult. These plants will grow under any circumstances, and are easily increased by dividing at the root when dormant. They are only fit to be planted in shrubberies.

Order XVIII. FLACOURTIA'NEÆ (plants agreeing with *Flacoúrtia* in many important characters). Rich. in mem. mus. 1. p. 366. D. C. prod. 1. p. 255.

Sepals 4-5-7. (f. 55. *b.*), definite in number, connected a little together at the base. Petals equal in number with the sepals and alternating with them, very rarely absent (f. 55. *a.*). Stamens inserted into the thalamus or receptacle, equal in number with the petals, but sometimes double or multiple that number (f. 55. 56. *a.*) and sometimes these are changed into nectariferous scales. Ovary ovate-globose, free, sessile (f. 55. *c.* f. 56. *d.*) or on a very short stipe. Style absent, or when present filiform (f. 56. *f.*). Stigmas equal in number with the valves of the ovary, more or less distinct (f. 56. *e.*) from each other. Fruit 1-celled (f. 56. *g.*) sometimes indehiscent and fleshy, sometimes capsular, 4-5-valved, filled with a fine pulp inside. Seeds few, thick, usually inwrapped in a dry thin pulpy pellicle; these seeds are fixed to the valves of the capsule, not to the margin as in *Capparídeæ,* nor to a longitudinal line as in *Violarièæ* and *Passiflòreæ,* but with the placentas branched in the disk of the valves, and the seeds adhering somewhat irregularly, and as if it were areolately, to these branched placentas. Albumen fleshy, rather oily. Embryo straight, slender, with the radicle turned towards the hilum. Cotyledons flat, oval, leafy. This order contains small tropical trees or shrubs without stipulas. The leaves are alternate, simple, feather-nerved, usually entire and coriaceous, on very short footstalks. Peduncles axillary and many-flowered. Flowers small, insignificant, often of distinct sexes, they are yellow, white, or greenish. Fruit when fleshy eatable. This order is allied to *Capparídeæ* and *Resedàceæ,* but it differs from these as well as from all dicotyledonous plants in the seeds being fixed to branched parietal placentas. Nothing is known of the properties of the plants contained in this order. The seeds are difficult to introduce in a living state from their native countries.

Synopsis of the genera.

Tribe I.

Patrisie'æ. *Flowers hermaphrodite, apetalous. Sepals 5. Fruct capsular or baccate.*

1 Ryanæ'a. Flowers with a petaloid urceolus between the stamens and the pistil. Fruit baccate, indehiscent.

2 Patri'sia. Urceolus wanting. Fruit capsular, dehiscent, papery, 3-5-valved.

Tribe II.

Flacourtie'æ. *Flowers dioecious* (f. 55. *a. b.* f. 56. *a. d.*) *from abortion, apetalous* (f. 56. *a.* f. 55. *a.*). *Fruit baccate* (f. 55. *c.* f. 56. *d.*), *indehiscent.*

3 Flacou'rtia. Stamens densely crowded upon a hemispherical, glandless torus (f. 55. *a.*). Stigmas 4-9 (f. 55. *b.*).

4 Rou'mea. Stamens not inserted upon a dilated torus (f. 56. *a.*), girded at the base by crenated glands. Stigmas capitate, depressed (f. 56. *e.*)

5 Stigmaròta. Stamens as in *Roúmea*. Style crowned by 6 radiant stigmas.

Tribe III.

Kiggelarie'æ. *Flowers dioecious from abortion* (f. 57. *a. b.*) *Petals 5. Fruit baccate, at length dehiscent.*

6 Kiggela'ria. Petals 5, bearing 3 glands at the claw (f. 57.)

7 Melicy'tus. Petals 5, glandless. Stigmas 4-5, radiant.

8 Hydnoca'rpus. Petals 5, furnished each with a scale at the base.

Tribe IV.

Erythrospe'rmeæ. *Flowers hermaphrodite. Petals and stamens 5-7. Fruit baccate, indehiscent.*

9 Erythrospe'rmum. Calyx of 4 sepals, about equal in length with the petals.

Tribe I.

PATRISIE'Æ (plants agreeing with *Patrìsia* in some important characters). D. C. prod. 1. p. 255. Flowers hermaphrodite, apetalous. Sepals 5, coloured on the inside, permanent. Stamens indefinite. Fruit capsular or baccate. Perhaps referable to some genera in *Passiflòreæ* near *Smeathmánnia ?* but the seeds are smooth, not as in *Passiflòreæ*, scrobiculate, wholly fixed to the disk, not fixed longitudinally to the nerves of the valves as in that order.

I. RYANÆ'A (named by Vahl after John Ryan, who collected and sent to him many plants from Guiana and Cayenne). D. C. prod. 1. p. 254. Ryània, Vahl. ecl. 1. p. 51. t. 9. Patrìsia, Rich. act. soc. par. p. 111.

Lin. syst. *Polyándria, Monogýnia.* Urceolus petaloid, situated between the stamens and the pistil. Fruit baccate, indehiscent. Branching shrubs with simple leaves. The name is a little changed to prevent its being confounded with *Riàna*.

1 R. specio'sa (Vahl. l. c.) leaves green on both surfaces, under surface bearing stellate hairs on the ribs; peduncles 1-flowered. ♄. S. Native of the island of Trinidad and in Cayenne in mountain woods. Patrìsia pyrífera, Rich. l. c. Pers. ench. 2. p. 69. Flowers large, somewhat cream-coloured.

Shewy Ryanæa. Fl. July, Sept. Clt. 1823. Shrub 10 feet.

Cult. This beautiful and singular shrub deserves a place in every stove. It will thrive well in vegetable mould mixed with a little sand; and ripened cuttings will strike freely if planted in a pot of sand, which should be plunged in a gentle heat, under a hand or bell-glass.

II. PATRI'SIA (— Patris, who collected numerous plants in Cayenne). H. B. et Kunth, nov. gen. 5. p. 356. D. C. prod. 1. p. 255.

Lin. syst. *Polyándria, Tri-Pentagýnia.* Urceolus none. Fruit capsular, dehiscent, suberose or papery, 3-5-valved.

1 P. bi'color (D. C. prod. 1. p. 256.) leaves white on the under surface from very fine tomentum; peduncles many-flowered. ♄. S. Native of Cayenne and Trinidad. Flowers large, cream-coloured.

Two-coloured-leaved Patrisia. Shrub 8 feet.

2 P. parviflòra (D. C. prod. 1. p. 256.) leaves villous on the under surface without ribs; peduncles 1-flowered. ♄. S. Native of Cayenne. Flowers whitish.

Small-flowered Patrisia. Shrub 12 feet.

3 P. denta'ta (H. B. et Kunth, nov. spec. 5. p. 357.) leaves glabrous on the ribs, on the under surface, and with the veins puberulous; flowers axillary, 1-2, on short pedicels; branchlets somewhat flexuous. ♄. S. Native of sandy shady places between Atures and Maypures on the Orinoco river. Flowers whitish.

Toothed-leaved Patrisia. Tree 30 feet.

4 P. affi'nis (H. B. et Kunth, l. c.) leaves glabrous, with the nerve and veins on the under surface rather hairy, ovate, acuminated, obsoletely denticulated; flowers 1-2, axillary on short pedicels; branchlets somewhat erect. ♄. S. Native on rocks near Carichana on the river Orinoco. Flowers whitish. Root poisonous.

Allied Patrisia. Tree 20 feet.

Cult. The species of *Patrìsia* require to be grown in a mixture of loam and vegetable mould, and ripened cuttings will root freely if planted in a pot of sand, and a hand-glass placed over them, plunged in heat.

Tribe II.

FLACOURTIE'Æ (shrubs agreeing with *Flacoúrtia* in many important characters). D. C. prod. 1. p. 256. Flowers dioecious from abortion (f. 55. *a. b.* f. 56. *a. d.*), petalless (f. 55. *a.* f. 56. *b.*). Stamens indefinite (f. 55. *a.*). Fruit baccate, indehiscent (f. 55. *c.* f. 56. *d.*).

III. FLACOU'RTIA (in honour of Etienne de Flacourt, a Director of the French East India Company, and the commander of an expedition to Madagascar in 1648, of which he afterwards wrote an account, which contained considerable details upon the botany of that country). Lher. stirp. 59. t. 30. D. C. prod. 1. p. 256.

Lin. syst. *Diœ'cia, Polyándria.* Male flowers. Stamens densely crowded upon the hemispherical receptacle (f. 55. *a.*), glandless at the base. Female flowers. Calyx 4-5-cleft, (f. 55. *b.*) deciduous. Stigmas 4-9 (f. 55. *b.*), furnished each with one longitudinal furrow above. Seeds bony. Shrubs thorny. The sepals are whitish and the stamens and anthers are yellow.

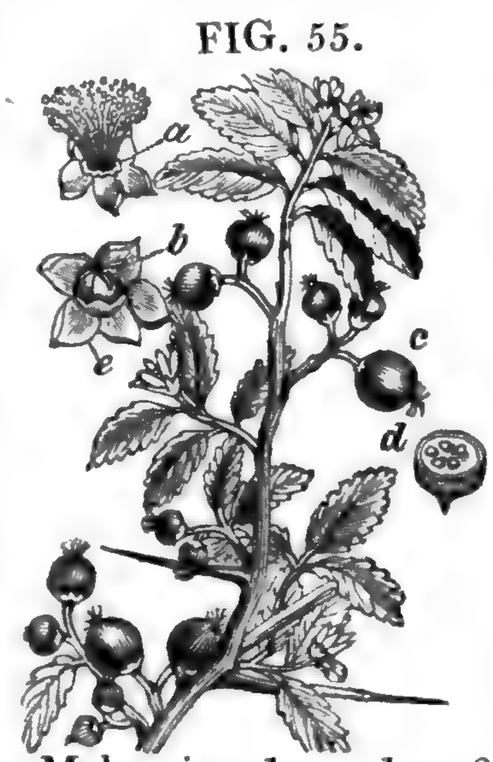
1 F. Ramo'ntchi (Lher. l. c. Lam. ill. t. 826.) leaves roundish-ovate, acute, crenated. ♄. S. Native of Madagascar, where it is called *Ramontchi*. Alamotou, Flac. mad. 124. Flowers yellowish or cream-coloured. The fruit is of the size and shape of a small plum, red when ripe, but at length becoming violet-coloured with a transparent red flesh. The natives eat the fruit; they are sweet, but leave a sharpness in the mouth.

An island on the coast of Madagascar is covered with these trees, and because they resemble the European plum-tree, the sailors have named the island *Isle aux Prunes*, or Plum-tree Island.

Ramontchi Flacourtia. Fl. Ju. Jul. Clt. 1775. Sh. 8 feet.

2 F. sa'pida (Roxb. cor. 1. p. 49. t. 69.) leaves elliptic, repandly-serrated, bluntish at both extremities. ♄. S. Native of the East Indies on mountains. Flowers yellow. Fruit red, the size of a common currant; they are eaten by the inhabitants, and are very palatable. The tree is called *Pedda Canrew* by the Telingas. (f. 55.)

FIG. 55.



Sapid Flacourtia. Fl. Clt. 1800. Tree 12 feet.

3 F. ine'rmis (Roxb. cor. 3. t. 222.) an unarmed tree; leaves elliptic, crenately-serrated, shining; racemes axillary, short; flowers hermaphrodite; style 5-cleft. ♄. S. Native of the Molucca islands. Mal. misc. 1. no. 1. p. 25. Stamens 20-30. Berries reddish-purple, of a pleasant acid taste, for which the tree is cultivated extensively in the Moluccas.

Unarmed Flacourtia. Fl. Feb. Nov. Clt. 1814. Tree 30 ft.

4 F. sepia'ria (Roxb. cor. 1. p. 48. t. 68.) leaves obovate-

oblong, repandly serrated. ♄. S. Native of the East Indies. —Rheed. mal. 2. p. 39. Many of the synonyms given to this plant are probably confused with those of *Elæodéndron Ar'gan.* Fruit red, eatable, and are sold in public markets; they are called *Canrew* by the Telingas. This bush answers well for fences, the spines being very strong.

Hedge Flacourtia. Clt. 1820. Shrub 6 feet.

5 F. CATAPHRA'CTA (Roxb. in Willd. spec. 4. p. 830.) leaves oval-oblong, acuminated, serrated. ♄. S. Native of the East Indies. Flowers yellow. Fruit reddish, when ripe eatable.

All-armed Flacourtia. Clt. 1804. Shrub 8 feet.

6 F. FLAVE'SCENS (Willd. spec. 4. p. 830.) leaves oblong, bluntish, serrated, narrowed at the base. ♄. S. Native of Guinea. Flowers and fruit yellow.

Yellowish Flacourtia. Clt. 1780. Shrub 15 feet.

7 F. RHAMNOI'DES (Burch. cat. afr. austr. no. 4012.) leaves elliptical, somewhat serrated, acutish. ♄. G. Native of the Cape of Good Hope, in woods. Flowers axillary, small, yellowish; pedicels 1-flowered. Berry ovate, red, eatable when ripe.

Rhamnus-like Flacourtia. Clt. 1819. Shrub 4 feet.

8 F. FLEXUÒSA (H. B. et Kunth, nov. spec. 7. p. 239.) branches flexuous, spinose; leaves ovate-oblong, remotely serrated, membranous, smooth, shining: male flowers axillary, aggregate. ♄. S. Native of Mexico. Flowers yellowish.

Flexuous-branched Flacourtia. Shrub 6 feet.

9 F. CELASTRI'NA (H. B. et Kunth, l. c. p. 239.) spines of the branches very long and straight; leaves obovate-roundish, membranous, crenated, smooth, shining; peduncles axillary, usually twin; berry subglobose-elliptical. ♄. S. Native of Mexico. Flowers yellowish. Berries red.

Celastrus-like Flacourtia. Shrub 6 feet.

10 F. PRUNIFO'LIA (H. B. l. c. p. 240. t. 654.) trunk beset with strong spines; branches unarmed; leaves obovate, elliptical, obtuse, coriaceous, smooth, shining, glandularly crenated; racemes axillary, short. ♄. S. Native of New Granada. Flowers yellowish. Berries red, eatable when ripe?

Plum-leaved Flacourtia. Tree 20 feet.

11 F. CORDA'TA (H. B. et Kunth, l. c. p. 241.) unarmed; leaves cordate, acute, crenated, coriaceous, smooth, shining; male flowers aggregate, female ones solitary. ♄. S. Native of Peru. Flowers yellowish. Berries red?

Cordate-leaved Flacourtia. Shrub.

Cult. This genus thrives best in a mixture of loam and peat. Cuttings will root freely planted in a pot of sand, and placed under a hand-glass, in heat.

IV. ROU'MEA (in memory of Philippe Rose Roume, de St. Laurent, once an agent of the French Government in St. Domingo, who was of great service to Poiteau while he travelled there.) Poit. mem. mus. 1. p. 62. t. 4. D. C. prod. 1. p. 256.

FIG. 56.

Lin. syst. *Diœ'cia, Polyándria.* Male flowers with the stamens inserted in a narrow receptacle (f. 56, *a.*) girded at the base by crenated glands. Female flowers. Calyx permanent, 4-5 cleft. Stigmas depressed-capitate at the top, (f. 56, *e.*) Seeds cartilaginous. Thorny shrubs.

1 R. CORIA'CEA (Poit. l. c.) spines of adult branches sometimes large and branched, sometimes small, simple; leaves serrated. ♄. S. Native of St. Domingo, in dry and sunny places. Kœlèra laurifòlia, Willd. (exclusive of the description confused with *Drypètes,*) Bessèra spinòsa, Spreng. pug. 2. p. 91.—Limàcia laurifòlia, Dietr. Flowers greenish-yellow, aggregate. Fruit small, saffron-coloured, without taste.

Leathery-leaved Roumea. Shrub 12 feet.

2 R. INE'RMIS (D. C. prod. 1. p. 256.) spines none; leaves quite entire. ♄. S. Native of Bengal. Bessèra inérmis, Spreng, pug. 2. p. 90. Branches angular from 3 strong nerves running down the stem from each leaf. Flowers 15-20 aggregate, small, on slender pedicels, in the axils of the leaves; greenish-yellow. Male flowers with sessile anthers.

Unarmed Roumea. Shrub 8 feet.

Cult. These plants will thrive best in a mixture of loam and peat. Ripened cuttings will strike freely if planted in a pot of sand, and placed under a hand-glass, in heat.

V. STIGMARO'TA (from *stigma,* a stigma, and *rota,* a wheel; in allusion to the rayed stigmas.) Lour. coch. 2. p. 634. D. C. prod. 1. p. 257.

Lin. syst. *Diœ'cia, Polyándria.* Male flowers as in *Roúmea.* Female flower. Calyx deciduous, 4-5 parted. Style cylindrical, short; stigmas 6, rayed. Berry fleshy, 6-seeded, brownish-purple, eatable; they are sweetish, and somewhat astringent. Perhaps this genus should be joined with *Flacoúrtia,* or *Roúmea?*

1 S. JA'NGOMAS (Lour. l. c.) spines on the female plants simple, on the males branched; leaves ovate, acuminated, serrated; peduncles many-flowered, ♄. G. Native of Cochin-china, from Lour. in Java, and Beleya, from Rumph. 7. p. 36. t. 19. f. 1. and 2. Roúmea Jángomas, Spreng syst. 2. p. 632. *Jangomas* is the name of the tree in Java?

Jangomas Stigmarota. Tree 12 feet.

2 S. AFRICA'NA (Lour. l. c.) differs from the last species in the stem being shrubby and prickly; flowers solitary, terminal; stigmas 6-7. ♄. G. Native of Cochin-china.

African Stigmarota. Shrub 6 feet.

Cult. Should these plants ever be introduced into our gardens, we would recommend that they should be grown in a mixture of loam, peat, and sand; and ripened cuttings to be tried in sand, under a hand-glass.

Tribe III.

KIGGELARIE'Æ (shrubs agreeing with *Kiggelària* in some important characters.) D. C. prod. 1. p. 257. Flowers dioecious from abortion, (f. 57. *c. b.*) Petals 5? alternating with the sepals. Stamens definite, (f. 57. *d.*) Fruit somewhat baccate, at length dehiscent.

VI. KIGGELA'RIA (in memory of Francis Kiggelar, an obscure Dutch botanist, who lived about the end of the seventeenth century. He published a catalogue of the garden of Beaumont, in 1790.) Linn. gen. no. 1128. D. C. prod. 1. p. 257.

Lin. syst. *Diœ'cia, Polyándria.* Petals 5, (f. 57. *b.*) bearing 3 glands at the claw. Male flowers. Stamens 10-20; filaments short; anthers opening by a double chink at the top. Female flowers. Styles 2-5. Shrubs with willow-like leaves, which are somewhat velvety on the under surface, bearing racemes of small insignificant whitish-yellow flowers.

1 K. AFRICA'NA (Lin. spec. 1466.) leaves serrated at length, glabrous and shining on the upper surface; stamens 10; styles 5. ♄. G. Native of South Africa. Lam. ill. t. 821. Lin. hort. cliff. 462. t. 29. herb. citr. 246. t. 12. Flowers greenish-white.

African Kiggelaria. Fl. May, June. Clt. 1683. Shrub 15 feet.

2 K. INTEGRIFO'LIA (Jacq. coll. 2. p. 269. icon. rar. t. 628.) leaves entire, velvety on both surfaces; stamens 20; styles 2, (f. 57. *d.*) ♄. G. Native of the Cape of Good Hope. Flowers whitish.

Entire-leaved Kiggelaria. Fl. May, June. Clt. 1819. Shrub 10 feet.

Cult. These shrubs grow freely in a mixture of loam and peat; ripened cuttings, planted in sand under a hand-glass, will root readily.

FIG. 57.

VII. MELICY'TUS (from μελι, *meli*, honey, and κυτος, *cytos*, a cavity; because of the filaments which are called nectaries by Forster bearing on the tip a meliferous cavity.) Forst. gen. t. 62. D. C. prod. 1. p. 257.

LIN. SYST. *Diœ'cia, Pentándria.* Petals 5, glandless. Male flowers. Stamens 5; filaments club-shaped; anthers adnate. Female flowers. Style very short; stigmata 4-5, rayed.

1 M. RAMIFLÒRUS (Forst. l. c. Lam. ill. t. 812. f. 1.) leaves toothed, oblong-cuneate, smooth on both surfaces. ♄. G. Native of New Zealand. Peduncles aggregate, fasciculate. Flowers very minute, whitish.

Branch-flowered Melicytus. Clt. 1822. Shrub 6 feet.

2 M.? UMBELLA'TUS (Gært. fr. 1. t. 206. t. 44. f. 3.) Perhaps the same as *M. ramiflòrus*, or perhaps a species of *Erythrospérmum?*

Umbellate-flowered Melicytus. Shrub 6 feet.

Cult. This Genus requires the same treatment as *Kiggelària*, which see.

VIII. HYDNOCA'RPUS (from *υδνον, hydnon*, a tuber, and καρπος, *karpos*, a fruit; in allusion to the fruit being crowned by 4 tubercles.) Gært. fruct. 1. p. 288. t. 60. f. 3. D. C. prod. 1. p. 257.

LIN. SYST. *Diœ'cia, Pentándria.* Male flower. Sepals 5, two outer ones ovate. Petals 5, with villous margins, furnished with a scale on the inside. Stamens 5. Female flower? Berry spherical, terminated by 4 reflexed tubercles. Placentas 4, many-seeded. A tree with flexuous branches, and alternate broad leaves.

1 H. INE'BRIANS (Vahl. symb. 3. p. 100.) ♄. S. Native of Ceylon. H. venenàta, Gært. fr. l. c. The fruit, when eaten, occasions giddiness, and is greedily devoured by fishes; but when fish are taken by means of this fruit they are not eatable, as they occasion vomiting and other violent symptoms.

Inebriating Hydnocarpus. Tree 30 feet?

Cult. This tree, if ever it should be introduced to the gardens, will probably thrive in a mixture of loam and peat, and ripened cuttings will root in sand, under a hand-glass, in heat.

Tribe IV.

ERYTHROSPE'RMEÆ (shrubs agreeing with *Erythrospérmum* in some important characters.) D. C. prod. 1. p. 257. Flowers hermaphrodite. Petals and stamens 4-7. Fruit indehiscent, somewhat baccate.

IX. ERYTHROSPE'RMUM (from ερυθρος, *erythros*, red, and σπερμα, *sperma*, a seed; because the seeds are red.) Lam. ill. t. 274. D. C. prod. 1. p. 257.

LIN. SYST. *Tetra-Heptándria, Tetra-Pentagýnia.* Calyx 4-sepalled, deciduous. Petals 4-7, scarcely longer than the calyx. Stamens 4-7: filaments very short. Ovary roundish. Stigmas 3-5. Fruit many-seeded. Very smooth unarmed shrubs. Flowers small, greenish-yellow.

1 E. MACROPHY'LLUM (Poir. suppl. 2. p. 585.) leaves scattered, lanceolate, blunt, mucronate; racemes shorter than the leaves. ♄. S. Native of the Mauritius.

Long-leaved Erythrospermum. Shrub.

2 E. PANICULA'TUM (Poir. l. c.) leaves scattered, ovate, blunt at both ends; racemes panicled, longer than the leaves. ♄. S. Native of the Mauritius.

Var. β, pauciflòrum, (D. C. prod. 1. p. 257.) racemes 2-4-flowered.

Paniculate-racemed Erythrospermum. Shrub.

3 E. ELLI'PTICUM (Poir. l. c. p. 585.) leaves scattered, elliptically-roundish, blunt at both ends; racemes few-flowered, longer than the leaves. ♄. S. Native of the Mauritius.

Var. β, mucronàtum (D. C. prod. 1. p. 528.) leaves ovate-mucronate. ♄. S. Native of Java.

Elliptic-leaved Erythrospermum. Shrub.

4 E. AMPLEXICAU'LE (D. C. prod. 1. p. 852.) leaves scattered, crowded at the top of the branches, oval, cordate at the base; peduncles somewhat umbellate, shorter than the leaves. ♄. S. Native of the Mauritius.

Stem-clasping-leaved Erythrospermum. Shrub.

5 E. PYRIFÒLIUM (Lam. ill. t. 274. f. 1.) leaves scattered, on very short footstalks, blunt at both ends; racemes somewhat terminal, shorter than the leaves. ♄. S. Native of the Mauritius.

Pear-leaved Erythrospermum. Shrub.

6 E. VERTICILLA'TUM (Lam. ill. t. 274. f. 2.) leaves 3 in a whorl, almost sessile, roundish; peduncles corymbosely-umbellate at the top, length of the leaves. ♄. S. Native of the Mauritius and Bourbon. The fruit of this species is referable to the genus *Kiggelària.*

Whorl-leaved Erythrospermum. Shrub.

Cult. These shrubs will thrive well in a mixture of loam, peat, and sand, and ripened cuttings will root if planted in a pot of sand, and placed under a hand-glass, in heat. †

ORDER XIX. BIXI'NEÆ. Kunth. malv. p. 17. nov. gen. amer. 5. p. 331. D. C. prod. 1. p. 259.

Calyx of 4-8 sepals, which are imbricate in the bud, these are sometimes truly distinct, and sometimes they are connected at the base. Petals 5, or wanting, but when present they are very like the sepals. Stamens indefinite in number, inserted in the receptacle or at the bottom of the calyx; filaments free; anthers 2-celled. Ovary superior, sessile, 1-celled. Style 1, undivided, or 2-4-cleft at the apex. Fruit capsular or baccate, 1-2-celled, many-seeded. Seeds fixed to parietal placentas, which are from 1-7 in number, the seeds of all are probably inwrapped in a fleshy membrane. Albumen fleshy or very thin. Embryo inclosed. erectish, or curved with leafy cotyledons, and with the radicle looking towards the hilum (Kunth). Smoothish tropical trees, with alternate, simple, entire, or slightly-lobed leaves, which are generally full of pellucid dots. The stipulas are caducous. The peduncles are axillary or terminal, bracteate, 1 or many-flowered, usually forming terminal panicles. Flowers middle-sized. The genera of this order are very imperfectly known. The habit of the plants come near to *Malvàceæ* and *Flacourtiàneæ*, but the character of the fruit comes nearer to *Cistineæ* and

Flacourtiàneæ. This order is composed of tropical trees and shrubs, not remarkable for either beauty or use. The seeds called *Arnotta* in the shops are the produce of *Bíxa Orellàna*, these are used for colouring cheese. The seeds retain their power of vegetating a considerable time, therefore in most instances they may be introduced from any part of the world in a living state.

Synopsis of the Genera.

* *Petals present.*

1 Bí'xa. Petals and sepals 5. Style long, ligulate at the apex. Capsule 1-celled, 2-valved, prickly.

2 Echinoca'rpus. Calyx 4-parted. Petals 4-5, cut. Style awl-shaped. Capsule woody, 1-celled, 4-valved, prickly.

3 Trichospe'rmum. Sepals and petals 5. Style wanting. Stigma emarginate. Capsule kidney-shaped, 1-celled, 2-valved, hairy.

4 Bana'ra. Calyx 6-parted, permanent. Petals 6. Stigma capitate. Berry very succulent.

5 Læ'tia. Calyx 5-parted. Petals 5, or wanting. Stigma capitate. Berry fleshy, 2-5-valved.

* * *Petals absent.*

6 Hasse'ltia. Calyx 4-parted. Petals wanting. Stigma simple. Fruit 1-2-celled; cells 1-2-seeded.

7 Pro'ckia. Calyx 3-5-parted, permanent. Petals wanting. Stigma entire. Berry dry, 4-6-seeded.

8 Lu'dia. Calyx 5-7-parted, permanent. Petals wanting. Style filiform. Stigma trifid. Berry 6-7-seeded.

9 Aza'ra. Calyx 4-5-parted. Petals wanting. Style awl-shaped. Stigma obtuse. Berry many-seeded.

10 Ku'hlia. Calyx campanulate, 6-8-cleft, closed, permanent, inner segments largest. Corolla none. Fruit 1-celled, many-seeded.

I. BI'XA (*Bixa* is the American name of *B. orellàna.*) Lin. gen. no. 654. H. B. et Kunth, nov. gen. am. 5. p. 353. D. C. prod. 1. p. 259.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 sepals; sepals orbicular, tuberculated at the base, deciduous, imbricated in æstivation. Petals 5, obovate. Stamens numerous, hypogynous, free; filaments filiform; anthers ovate. Ovary one. Style one, long, almost ligulate and compressed at the top. Capsule 1-celled, 2-valved; valves covered with bristles on the outside, each bearing a linear placenta on the inside in the middle. Seeds 8-10 on each side of the placenta, clothed with a farinaceous red pulp. Albumen fleshy. Embryo erect. Cotyledons leafy, flat, parallel, transversely plaited in the middle. Gært. fruct. 1. t. 61. Trees with broad cordate leaves, and dichotomous panicles of large reddish flowers, and prickly capsules.

1 B. orella'na (Lin. spec. 730.) leaves cordate, ovate, acuminated, entire or angular, smooth on both surfaces. ♄. S. Native of South America by the sides of bogs and fountains. Cultivated in the West India islands. Sloane, hist. 2. p. 52. t. 181. f. 1. Comm. hort. amst. 1. t. 33. B. Americàna, Poir. dict. 6. p. 229. Corymbs terminal, panicled; peduncles 2-3-4-flowered. Flowers pale peach-coloured. In Holland the seeds of this tree are called *Orleane;* in Germany, *Orleansbaum, Bischofsmutze, Anotta.* In England we have taken the latter of these names, spelling it variously *Arnotto, Anotta, Anota, Annoto.* The French have adopted the Brasilian name *Uruku* or *Urucu*, spelling it *Roucouyer, Roucou*, or *Rocurier des Indes.* The Portuguese have also the same appellation, *Urucu* or *Urucueira.* In Spanish it is *Anato* or *Atolle.* In the Mexican language *Achiotl.* Scalager calls it *Arbor finium regundorum*, because the Mexicans made plans, and marked the boundaries of their lands on tablets with the colour prepared from the pulp which surrounds the seeds. Tournefort named it *Mitella* from the resemblance of the capsule, when open, to a mitre.

The drug called *Arnotta* is thus prepared from the red pulp which covers the seeds. The contents of the fruit are taken out and thrown into a wooden vessel, where as much hot water is poured upon them, as is necessary to suspend the red powder or pulp, and by diligent stirring and pounding the pulp is separated from the seeds, or gradually washed off with the assistance of a spatula or spoon. When the seeds appear quite naked they are taken out, and the wash is left to settle; after which the water is gently poured away, and the sediment put into shallow vessels, to be dried by degrees in the shade. After acquiring a due consistence it is made into balls or cakes, and set to dry in an airy place until it is perfectly firm. Some persons first pound the contents of the fruit with wooden pestles; then covering them with water, leave them to steep six days. This liquor being passed through a coarse sieve, and afterwards through three finer ones, is again put into the vat or wooden vessel, and left to ferment a week. It is then boiled until it is pretty thick, and when cool is spread out to dry, and then made up into balls, which are usually wrapped up in leaves. *Arnotta* of a good quality is of the colour of fire, bright within, soft to the touch, and dissolves entirely in water. It is reputed cooling and cordial, and is much used by the Spaniards in their chocolate and soups, both to heighten the flavour and to give them an agreeable colour. It is esteemed a good antidote to dysentery and disorders of the kidneys, and is recommended as a good stomachic cordial, and a preservative against retention of urine. Mixed with lemon-juice and a gum it makes the crimson paint with which the Indians adorn their persons. It was formerly used by dyers to form the colour called Aurora, but at present it is not held in such high estimation as a dye, though it still maintains its ground with painters. *Arnotta* is well known to be the drug which is used for colouring the cheese in Gloucestershire, under the name of cheese-colouring. It is used in Holland for colouring butter. *Arnotta* gives but a pale brownish yellow colour to water, and is not soluble in that liquid, nor in spirit of wine; but in order to be fit for dyeing, it requires an alkaline menstruum, to which it gives a bright orange colour, and hence it was formerly used as an ingredient in varnishes and lacquers, and in dyeing wax of a vermilion colour; but in dyeing cloths it is of little use, as the colour is discharged by exposure to the air and by soap. The bark of the tree makes good ropes for the common plantation uses in the West Indies; and pieces of the wood are used by the Indians to procure fire by friction. The specific name *Orellàna* is given to this tree because it is believed that it grows principally towards the borders of Orellana in South America.

Arnotta is said to be an antidote to the poisonous juice of Manihot. The liquid formerly sold under the name of "Scot's nankeen dye," seems to be nothing but *Arnotta* dissolved in alkaline ley.

Orellana or Common Arnotta or Anotta-Tree. Fl. May, Aug. Tree 30 feet.

2 B. Urucura'na (Willd. enum. p. 565.) leaves with white scales or dots on the under surface. ♄. S. Native of Brasil. Flowers like the last. *Uruca* or *Uruka* is the Brasilian name of the tree.

Uruca Arnotta. Clt. 1823. Tree?

3 B. platyca'rpa (Ruiz, et Pav. fl. per. 5. t. 459.) capsules nearly kidney-shaped, flat, with very few prickles; pedicels very thick towards the flower; leaves cordate, entire, strongly

ribbed. ♄. S. Native of Peru or Chili. Corymbs terminal, panicled; peduncles 2-3-flowered.

Broad-capsuled Arnotta-Tree. Tree 20 feet.

4 B. ODORA'TA (Ruiz, et Pav. fl. per. 5. t. 460.) leaves cordate, acuminated, with one small lobe on each side, and therefore the leaves appear as if they were 3-lobed. ♄. S. Native of Peru or Chili. Corymbs terminal, panicled; peduncles 2-flowered.

Sweet-scented Arnotta-Tree. Tree 20 feet.

5 B. PURPU REA (Hort.) leaves like those of *Bixa Orellàna*. The flowers and capsules are purple. ♄. S. Native of the East Indies.

Purple Arnotta-Tree. Clt. 1820. Tree 20 feet.

Cult. These trees grow to a large size before they can be got to flower from seed. But if cuttings be taken from a flowering plant and struck, they may be brought to flower when small plants. Loam and peat suit them well, and cuttings root freely in sand under a hand-glass, in heat.

II. ECHINOCA'RPUS (from εχινος, *echinos*, a hedgehog, and καρπος, *karpos*, a fruit; in allusion to the prickly capsules). Blum. bijdr. fl. ind. ned. ex Schlecht. Linnæa. 1. p. 645.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 4-parted, deciduous. Petals 4-5, cut. Stamens numerous, hypogynous; anthers pointed. Ovary 1. Style awl-shaped. Stigma simple. Capsule woody, 4-valved; valves echinated on the outside, but filled with farinaceous pulp in the inside. Seeds arillate at the base, 1 or 2 adhering to the middle of each valve. A tree with alternate, stalked, oval-acute or acuminated leaves, and 1-flowered lateral peduncles.

1 E. SIGUN (Blum. l. c.) ♄. S. Native of Java, where the tree is called *Sigun*.

Sigun. Tree 120 feet.

Cult. For the cultivation and propagation of this tree, see *Bixa*.

III. TRICHOSPE'RMUM (from θριξ τριχος, *thrix trichos*, a hair, and σπερμα, *sperma*, a seed; in allusion to the seeds being ciliated.) Blum. bidjr. fl. ind. ned. ex Schlecht. Linnæa 1. p. 645.

LIN. SYST. *Polyándria, Monogýnia.* Calyx of 5 oval deciduous sepals, which are imbricate in the bud. Petals 5, oval, rather smaller than the calyx. Stamens indefinite, free, hypogynous; anthers twin. Ovary somewhat bilocular, crowned by 2? emarginate stigmas. Capsules kidney-shaped, 2-valved, hairy on the outside, bearing the seeds on linear intervalvular placentas? Seeds numerous, lenticular, arillate, ciliated. Albumen fleshy. A tree with alternate ovate-oblong serrulated leaves, which are cordate at the base, and furnished with 2 glands beneath. Stipulas ovate. Flowers disposed in cymes, which are axillary and solitary.

1 T. JAVA'NICUM (Blum. l. c.) ♄. S. Native of Java. Flowers reddish?

Java Trichospermum. Tree 50 feet.

Cult. This tree will grow well in a mixture of loam and sand; and ripened cuttings will strike freely, if planted in a pot of sand, and placed under a hand-glass, in heat.

IV. BANA'RA (the name of a shrub in Guiana.) Aubl. guian. 1. p. 547. D. C. prod. 1. p. 259.

LIN. SYST. *Polyándria, Monogýnia.* Calyx permanent, 6-parted; lobes rounded. Petals 6, roundish, inserted beneath the disk. Stamens 15 and more, inserted at the edge of the the disk. Ovary orbicular, seated on the disk. Style one. Stigma capitate. Berry scarcely succulent, terminated by the style. Seeds indefinite, striated. A shrub with simple leaves, and panicles of small yellow flowers.

1 B. GUIANE'NSIS (Aubl. l. c. 217.) ♄. S. Native of Cayenne, in woods. Leaves ovate-oblong, acute, denticulated, somewhat tomentose on the under surface. Flowers yellow. Berry black.

FIG. 58.

Guiana Banara. Fl. May. Sh. 10 feet.

2 B. ROXBU'RGHII (Spreng. syst. 2. p. 472.) leaves lanceolate, remotely-toothed, tapering to the base, and quite entire, woolly beneath; panicle axillary, very villous. ♄. S. Native of the East Indies.

Roxburgh's Banara. Sh. 8 feet.

Cult. These shrubs will thrive well in a mixture of loam, peat, and sand; and ripened cuttings will root freely if planted in a pot of sand, and placed under a hand-glass, in heat.

V. LÆ'TIA (in honour of Jean de Laet of Antwerp, a director of the French East-India Company, who published a Latin history of America in folio, dedicated to King Charles I. of England. Haller speaks with respect of his botanical remarks as throwing light upon the plants of Marcgrave, and tending to reconcile his descriptions with those of Clusius and the Spanish botanists.) Lin. gen. no. 651. D. C. prod. 1. p. 260.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 5-parted, marcescent, coloured. Petals 5, or wanting. Stamens indefinite, hypogynous; anthers roundish. Style one; stigma capitate. Capsule fleshy, 3-5-valved, small, globose, acuminated with the style. Seeds many, clothed with a pulpy pellicle. Trees with simple leaves, and axillary peduncles of small whitish flowers with yellow anthers.

* *Flowers apetalous.*

1 L. APE'TALA (Jacq. amer. 167. t. 108.) flowers apetalous; peduncles terminal and axillary, usually 3-flowered; leaves oblong, blunt, serrulated, shining above. ♄. S. Native of Carthagena, in woods, and at the river Magdalena, as well as in Brazil and Peru. H. B. and Kunth, nov. gen. amer. 5. p. 354. Flowers white, like those of *Hawthorn*. Fruit ovate, 4-angled. Mart. fl. bras. 2. p. 78. t. 165. Ruiz, et. Pav. fl. per. 5. t. 467. b.

Petalless Lætia. Fl. Apr. May. Tree 20 feet.

2 L. SCA'BRA (Spreng. syst. 2. p. 609.) leaves oval, somewhat denticulated, opaque, scabrous on the under surface, triple-nerved; peduncles axillary, tern; calyx silky. ♄. S. Native of Hispaniola.

Scabrous Lætia. Shrub.

3 L? GUIDÒNIA (Swz. prod. 83.) flowers petalless; peduncles 1-flowered, terminal; leaves oblong, acuminate, pubescent. ♄. S. Native of Jamaica. Guidònia, Browne, jam. 249. t. 29. f. 4.? Sámyda icosándra, Swz. fl. ind. occ. 3. p. 1962. Style very short. Capsule fleshy, 3-valved. Perhaps a species of Sámyda? The tree is called *Rod-wood* in Jamaica. The wood is used in all sorts of buildings. Flowers white? Fruit beautiful red. *Guidònia* is probably the name of the tree in Jamaica.

Guidonia Lætia. Tree 30 feet.

4 L. THA'MNIA (Swz. fl. ind. occ. 2. p. 950.) flowers petalless; peduncles axillary, many-flowered, sub-divided; leaves oblong, acute, somewhat crenated, shining. ♄. S. Native in the south of Jamaica, in bushy places by the sea side. Thám-

nia, Browne, jam. 245. t. 25. f. 2. Helwíngia, Adans. Flowers about the size of a myrtle, with the calyx purple outside, and white within, with yellow anthers. The specific name is derived from *θαμνος*, a shrub.

Shrubby Lætia. Clt.? Shrub 8 feet.

5 L. PARVIFLÒRA (Spreng, syst. 2. p. 609.) leaves obovate-oblong, rather villous on both surfaces; panicles axillary, tomentose; flowers glomerate. ♄. S. Native of Brazil. Flowers small, white.

Small-flowered Lætia. Shrub 8 feet.

* * *Flowers complete, that is to say, with both petals and sepals.*

6 L. COMPLE'TA (Jacq. amer. 167. t. 183. f. 60.) flowers 5-petalled; leaves ovate, obtuse, serrated, wrinkled, glabrous. ♄. S. Native of Carthagena, in woods. Flowers white? Berry yellowish-red, slightly triangular.

Complete-flowered Lætia. Fl. Ju. July. Shrub 10 feet.

† *Species, the flowers of which are not sufficiently known.*

7 L. HIRTE'LLA (H. B. et Kunth, nov. gen. amer. 5. p. 355.) branchlets hairy, as well as the leaves on the under surface, on the nerves, and veins, oblong, sharply denticulated; peduncles 1-fruited. ♄. S. Native near Cumana. Flowers not seen.

Hairy Lætia. Shrub 8 feet.

8 L. GUAZUMÆFÒLIA (H. B. et Kunth, l. c.) branchlets clothed with rusty tomentum; leaves oblong, bluntish, obsoletely-denticulated, hairy on the under surface, particularly on the nerves and veins; peduncles dichotomous, many-flowered? ♄. S. Native of New Andalusia, near Bordones. Flowers white, with yellow anthers.

Guazuma-leaved Lætia. Tree 30 feet.

Cult. These shrubs will thrive well in a mixture of loam, peat, and sand; and cuttings planted in sand, under a hand-glass, and placed in a moderate heat, will root readily.

VI. HASSE'LTIA (Van Hasselt, a naturalist, sent by the Dutch government to Java.) H. B. et Kunth, nov. spec. amer. 7. p. 236. t. 651.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 4-parted. Petals 4. Anthers 2-celled. Glands 8, perigynous. Style 1. Fruit almost globose, 1-2-celled; cells 1-2-seeded. A tree with oblong, toothed, 5-nerved leaves, with two glands at the base, without stipulas, and umbellate terminal cymes of flowers. Flowers small, with a white calyx.

1 H. FLORIBU'NDA (H. B. l. c.) ♄. S. Native of South America, at the river Magdalena.

Bundle-flowered Hasseltia. Tree 40 feet.

Cult. For the cultivation and propagation of this tree, see *Bixa*.

VII. PRO'CKIA (a name of unknown meaning.) Browne in Lin. gen. no. 674. Lam. dict. p. 625. ill. t. 465. D. C. prod. 1. p. 260.

LIN. SYST. *Polyándria, Monogýnia.* Calyx permanent, 3-5-parted; lobes roundish, unequal. Petals none. Stamens numerous, inserted in the disk; anthers roundish. Ovary one, roundish. Stigma entire. Berry rather dry, 4-6-seeded, roundish, smooth. Shrubs with the habit of *Grèwia*, from America or the Mauritius, with alternate, entire, or toothed leaves. Flowers yellow, sometimes unisexual from abortion.

SECT. I. PROCKIA'RIA (see genus.) D. C. prod. 1. p. 260. Style filiform. Stigma blunt, or acutish.

1 P. CRU'CIS (Lin. spec. 745.) leaves ovate, acuminated, serrated; stipulas somewhat falcate; racemes few-flowered, terminal. ♄. S. Native of the islands of Santa Cruz and Cuba. Calyx 3-4-sepalled. Vahl. symb. 3. p. 69. t. 64. Lindl. bot. reg. t. 972. P. acùta, Moc. et Sesse, fl. mex. icon. ined.? but the leaves are narrower. Flowers yellow.

Var. β, cordàta (D. C. prod. 1. p. 260.) leaves cordate; calyx 4-5-sepalled; stipulas linear. ♄. S. Native of the island of Santa-Cruz. Lam. ill. 465. f. 1.—P. subcordàta, Moc. et Sesse, fl. mex. icon. ined. Flowers yellow.

Santa-Cruz Prockia. Fl. July. Clt. 1823. Shrub 5 feet.

2 P. SEPTENNE'RVIA (Spreng. syst. 2. p. 609.) leaves cordate-oblong, acuminated, serrated, pubescent beneath, 7-nerved; stipulas semi-cordate; racemes lateral, usually 8-flowered, pilose. ♄. S. Native of Brazil. Flowers yellow.

Seven-nerved-leaved Prockia. Shrub 5 feet.

3 P. DELTOÌDES (Lam. ill. t. 465. f. 3.) leaves roundish-deltoid, crenately subsinuated; pedicels axillary, generally in pairs. ♄. S. Native of the Mauritius and Madagascar.

Deltoid-leaved Prockia. Shrub 4 feet.

SECT. II. APHLO'IA D. C. prod. 1. p. 261. Lightfoòtia, Swz. prod. 83. but not of Lher. Style wanting, or scarcely evident. Stigma broad, somewhat orbicular, flattish.

4 P. SERRA'TA (Willd. spec. 2. p. 1213.) leaves oblong-ovate, serrated, acuminated; peduncles lateral, aggregate, 1-flowered. ♄. S. Native of the island of Montserrat. Flowers yellow.

Serrated-leaved Prockia. Clt. 1822. Shrub 3 feet.

5 P. INTEGRIFÒLIA (Willd. spec. 2. p. 1214.) leaves somewhat leathery, oval or obovate, entire or a little toothed, obtuse, or somewhat emarginate; peduncles 1 or 4 together, axillary 1-flowered. ♄. S. Native of the Mauritius. Lightfoòtia integrifòlia, Vahl. symb. 3. p. 70. Flowers yellow.

Var. β, ovàta (Poir. dict. 5. p. 626.) flowers almost disposed in little axillary umbels. ♄. S. Lam. ill. t. 465. f. 2.

Entire-leaved Prockia. Shrub 6 feet.

6. P. THEÆFO'RMIS (Willd. spec. 2. p. 1214.) leaves rather membranous, elliptical-lanceolate, bluntly serrated, somewhat revolute on the margin at the base, and running into the petiole; pedicels 1 to 3, axillary 1-flowered. ♄. S. Native of the island of Bourbon. Lightfoòtia theæfórmis, Vahl. symb. 3. p. 69. Lùdia heterophýlla, Bory. voy. 2. p. 115. t. 24. lower figure. Flowers yellow.

Var. β, laciniàta (Poir. dict. 5. p. 627.) leaves pinnatifid; lobes mucronate, entire, or toothed. ♄. S. Lùdia heterophýlla, Bory. voy. 2. t. 24. upper figure.

Tea-formed Prockia. Clt. 1822. Shrub 12 feet.

† *Species not sufficiently known.*

7 P. LOBA'TA (Poir. dict 5. p. 627.) leaves ovate, acuminate, serrated; peduncles axillary, racemose, 3-5-flowered; stigma almost sessile, 5-lobed. ♄. S. Native country unknown. Lítsea, Lam. ill. 834. Flowers yellow.

Lobed-stigmaed Prockia. Shrub 6 feet.

8 P. MACROSTA'CHYA (Moc. et Sesse, fl. mex. icon. ined. et D. C. prod. 1. p. 261.) leaves ovate-lanceolate, acuminated, quite entire; racemes terminal, elongated, naked; calyx 4-parted, obtuse; fruit 1-seeded. ♄. S. Native of Mexico. A genus probably removed from its proper order. Stamens 12, hypogynous. Style very short; stigma orbicular.

Large-spiked Prockia. Shrub.

9 P. RACEMÒSA (Hort. Lecchi. ex Schlecht. Linnæa, 4. p. 34.) stem and branches scandent, tendrilled at the top; leaves alternate, oblong-ovate, acuminated, toothed. ♄. ◡. S. Native of?

Racemose Prockia. Shrub cl.

Cult. These shrubs thrive well in a mixture of loam, sand,

and peat; and ripened cuttings will root freely, if planted in sand, and placed under a hand-glass, in a moderate heat.

VIII. LU'DIA (from *ludo*, to sport; because of the leaves of *L. heterophýlla* sporting into different forms.) Lam. dict. 3. p. 612. ill. t. 466. D. C. prod. 1. p. 261.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx permanent, 5-7-parted; lobes oval. Petals wanting. Stamens numerous, inserted in the disk; anthers roundish. Ovary one, ovate. Style filiform. Stigma trifid, rarely quadrifid. Berry dry, globose, pointed by the style, 6-8-seeded. Shrubs from the Mauritius, with lateral, almost sessile flowers, and the leaves are often of various forms on the same plant, whence the name.

1 L. heterophy'lla (Lam. l. c. t. 463. f. 1 and 2.) leaves obovate, shining, veiny, those of the young plants small and spinosely-toothed; those of the adult ones larger, and quite entire; pedicels axillary, solitary. ♄. S. Native of the Mauritius, where it is called *Bois sans ecorse*. Lùdia Mauritiàna, Raeusch. from Steud. nom. Flowers yellow.

Variable-leaved Ludia. Fl. Jul. Aug. Clt. 1823. Shrub 5 ft.

2 L. myrtifòlia (Lam. l. c. t. 466. f. 3.) leaves ovate, quite entire, veiny; pedicels axillary, solitary; style incurved. ♄. S. Native of the island of Bourbon. Flowers with white sepals and yellow anthers.

Myrtle-leaved Ludia. Fl. Jul. Aug. Shrub 5 feet.

3 L. sessiliflòra (Lam. l. c.) leaves ovate-oblong, acutish; flowers axillary, almost sessile; style straight. ♄. S. Native of the Mauritius. Lùdia tuberculàta, Jacq. hort. Schœnbr. 1. t. 112. Ovary 1-celled; ovulæ 6, adhering by pairs to the 3-parietal placentas. Flowers with a whitish calyx and stamens, and yellow anthers (f. 59.).

FIG. 59.

Sessile-flowered Ludia. Fl. Jul. Aug. Clt. 1820. Tree 12 feet.

Cult. These shrubs will thrive well in a mixture of loam, sand and peat; and ripened cuttings will root freely if planted in sand and placed under a hand-glass, in heat.

IX. AZA'RA (in honour of Joseph Nicholas Azara, a Spanish promoter of science, but botany in particular.) Ruiz, et Pav. fl. per. prod. 76. t. 36. syst. p. 137. D. C. prod. 1. p. 262.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx 4-6-parted. Petals wanting. Stamens numerous; filaments filiform, free, and are, as well as many capillary threads, rising from the torus. Anthers 2-celled. Style awl-shaped. Stigma blunt. Berry pointed with the style, 1-celled, many-seeded. Placentas 3, parietal. Shrubs from Chili, with twin, unequal leaves, which are bitter to the taste. Flowers small, fragrant, yellow or white.

1 A. serra'ta (Ruiz, et Pav. l. c. and fl. per. 5. t. 465. b.) leaves by pairs, serrated, the larger one lanceolate, the smaller one roundish; corymbs terminal, many-flowered. ♄. G. Native of Chili, in groves, where it is called *Corcolen*. Shrub with a globose tufted head.

Serrated-leaved Azara. Shrub 10 feet.

2 A. integrifòlia (Ruiz, et Pav. syst. p. 138. fl. per. 5. t. 466.) leaves in pairs, quite entire, the larger one obovate, the smaller one roundish; flowers disposed in drooping spikes. ♄. G. Native in groves at Conception in Chili.

Entire-leaved Azara. Fl. Jul. Aug. Tree 18 feet.

3 A. denta'ta (Ruiz, et Pav. l. c. and fl. per. 5. t. 465. a.) leaves in pairs, toothed, the larger one elliptical, the smaller one roundish; flowers umbellate. ♄. G. Native in groves at Conception in Chili.

Toothed-leaved Azara. Shrub 5 feet.

Cult. None of these shrubs have as yet been introduced to the gardens; but should they ever be we would recommend their being grown in loam and sand; and ripened cuttings will root, if planted in sand, placed under a hand-glass, in a moderate heat.

X. KU'HLIA (in honour of Henry Kuhl, a collector of Natural History, sent by the Dutch government to Java, with Hasselt.) H. B. et Kunth, nov. spec. amer. 7. p. 236. t. 652.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx campanulate, 6-8-cleft, closed, permanent, inner segments largest. Corolla wanting. Anthers 2-celled. Stigma obtuse. Fruit 1-celled, many-seeded. Trees with oblong serrated leaves, and panicles of flowers.

1 K. glau'ca (H. B. et Kunth, nov. spec. amer. 7. p. t. 652.) leaves dimidiate at the base, oblong, acutish, remotely serrated, glaucous beneath; flowers in fascicled-panicles. ♄. S. Native of New Granada. Flowers white.

Glaucous-leaved Kuhlia. Tree 20 feet.

2 K. ulmifòlia (H. B. et Kunth, l. c. t. 653.) leaves dimidiate at the base, oblong-lanceolate, acuminated, grossly serrated, green on both surfaces; flowers in panicles. ♄. S. Native of the Alps of Popaya, in South America. Flowers white.

Elm-leaved Kuhlia. Tree 20 feet.

Cult. For the cultivation and propagation of this genus see *Lùdia*.

Order XX. CISTI'NEÆ (plants agreeing with *Cistus* in many important characters.) D. C. prod. 1. p. 263. Císti, Juss. gen. 294. and Cistoìdeæ, Vent. tabl. 3. p. 219, exclusive of the allied genera.—Císti, D. C. fl. fr. 4. p. 811.

Calyx of 5 permanent sepals (f. 60. *a*.), which are continuous with the pedicel, they are usually unequal; the 2 exterior ones are usually much smaller than the others, and even sometimes almost wanting, the three inner ones are twisted when in the bud. Petals 5 (f. 60. *b*.), caducous, equal, twisted before expansion, but in a contrary direction to the sepals. Stamens usually indefinite, hypogynous, erect, free; anthers ovate, 2-celled, and 2-chinked, inserted by the base. Ovary free (f. 60. *d*. Style one, filiform, crowned by a simple stigma. Capsule constantly of 3-5 but rarely of 10 valves, sometimes bearing in the middle of each valve a longitudinal placentarious nerve, and hence the capsule is 1-celled, sometimes these middle nerves jut out more or less into dissepiments, therefore, in this case, the capsule is completely or incompletely many-celled. The seeds are therefore either truly parietal, but sometimes contiguous to the parietal placenta, or fixed to the inner angle of the dissepiment, when there is any; they are very numerous and small. Albumen mealy. Embryo spiral or curved within the albumen. Shrubs or herbs, with simple, feather-nerved, entire or toothed leaves, the first ones always opposite, the rest usually opposite, but sometimes alternate, sometimes naked at the base, but usually furnished with twin leafy stipulas. Racemes generally with the pedicels all to one side and expanding successively from the base; the raceme where the flowers are unexpanded is bent or twisted back in the manner of *scorpion-grass*.

Flowers resembling the *Rose;* petals very fugacious, usually lasting only for a day; they are yellow, white, rose, and purple, with the claws usually of a different colour from the limbs. The branches are usually covered with clammy gluten.

This order is nearly allied to *Violarièæ*, but differs from it in the flowers being always regular, and in the stamens being indefinite. It differs from *Bixíneæ* in the petals being always present, in the different æstivation of the petals, as well as in the albumen being mealy, and in the leaves never being furnished with pellucid dots. The common *Rock-Rose* gives a good idea of this order. The plants are all very ornamental, and are particularly well calculated for ornamenting rock-work or dry banks. The seeds of all retain their vegetative power for years, therefore they are easily introduced in a living state from any part of the world.

The gum called Ladanum is the produce of a species of *Cístus*, it exhales a fragrant perfume when burnt, and possesses highly tonic and stomachic properties.

Synopsis of the Genera.

1 Cístus. Calyx of 5 sepals, 2 outer ones unequal or absent. Capsule covered by the calyx, 10-5-celled, from bearing a dissepiment in the middle of each valve.

2 Helia'nthemum. Calyx of 3 equal sepals or of 5 unequal sepals. Capsule triquetrous, 1-celled, 3-valved, with a narrow dissepiment, or a placentarious nerve in the middle of each valve.

3 Hudso'nia. Calyx of 5 equal sepals. Capsule 1-celled, 3-valved, 1-3-seeded.

4 Le'chea. Calyx of 3 sepals, guarded by 2 bracteas. Petals 3. Capsule 3-valved, with a nerve or narrow dissepiment in the middle of each valve.

I. CI'STUS (κιστος in Greek is derived from κιστη, *kiste*, a box or capsule; because of the remarkable shape of the capsules.) Tourn. inst. 259. t. 136. Gært. fr. t. 76. D. C. fl. fr. 4. p. 811. prod. 1. p. 263.—Císti, spec. Lin.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 sepals; sepals disposed in a double series, 2 outer ones unequal, sometimes wanting. Petals 5, equal, somewhat cuneated, caducous. Stamens numerous, usually exserted from the glandular disk. Style filiform. Stigma capitate. Capsule covered by the calyx, 5 or 10 valved, with a seminiferous partition in the middle of each valve, therefore 5 or 10 celled. Seeds ovate, angular. Embryo filiform, spiral. Elegant, erect shrubs or sub-shrubs, with opposite, exstipulate, entire, or somewhat toothed leaves, and axillary, 1 or many-flowered peduncles. Flowers large, beautiful, resembling a *single Rose*, red or white.

Sect. I. Erythroci'stus (from ερυθρος, *erythros*, red, and κιστος, *cistus;* because the flowers of all the species in this section are red or purple.) D. C. prod 1. p. 264. Outer sepals narrowest, and usually smallest, inner ones concave at the base, with scarious margins. Petals rose-coloured, red or purple, with a yellow spot at the base of each. Capsule 5-celled, from having 5 seminiferous partitions, one in the middle of each valve.

* §. 1. *Peduncles 1-flowered, axillary or terminal, solitary or umbellate. Style cylindrical, generally longer than the stamens. Stigma capitate, 5-furrowed.*

1 C. purpu'reus (Lam. dict. 2. p. 14.) leaves oblong-lanceolate, acuminated at both ends, wrinkled; footstalks short, hairy, sheathing; peduncles 1-2 or 3 together. ♄. F. Native of the Levant. Petals reddish-purple, marked at the base with a dark purple spot, imbricate. Flower-bud large. Ker. bot. mag. t. 408. Sweet, cist. t. 17.

Purple-flowered Rock-Rose. Fl. Ju. Jul. Clt. ? Sh. 2 feet.

2 C. heterophy'llus (Desf. fl. atl. 1. p. 411. t. 104.) leaves ovate-lanceolate, on short footstalks which are sheathing at the base; margins revolute; peduncles hairy, leafy, 1-flowered, 1-3 together. ♄. F. Sweet, cist. t. 6. Native of Algiers, on dry hills. Corolla large, red, yellow at the base. Petals imbricate.

Variable-leaved Rock-Rose. Fl. Ju. Jul. Clt.? Shrub 2 feet.

3 C. parvifo'rus (Lam. dict. 2. p. 14.) leaves ovate, acute, somewhat tomentose, drawn out into the footstalks at the base, and somewhat connate; peduncles 1 or 3 together, almost terminal. ♄. F. Native of Crete. Sweet, cist. t. 14. Smith, fl. græc. t. 495. Corolla small, purplish. Petals distinct.

Small-flowered Rock-Rose. Fl. Ju. Jul. Clt. ? Shrub 3 feet.

4 C. complica'tus (Lam. dict. 2. p. 14.) leaves roundish-ovate, bluntish, approximate, clothed with white tomentum, under surface reticulated; footstalks dilated at the base, with pilose margins, channelled above and sheathing at the base; peduncles short, 1-flowered, 3 or 4 together, somewhat terminal. ♄. F. Native of the Levant; also of the mountains of Valentia, in Spain. Flowers small, rose-coloured, or purplish.

Complicated Rock-Rose. Fl. Ju. Jul. Clt. 1818. Sh. 3 feet.

5 C. villo'sus (Lam. dict. 2. p. 12.) leaves roundish-ovate, wrinkled, tomentose and hairy, stalked; footstalks furrowed, connate at the base; peduncles 1-flowered, 1 or 3 together; sepals villous. ♄. F. Native of Italy, Spain, and Barbary. Cístus pilòsus, Lin. spec. 737. Duh. arb. 1. p. 67. t. 64. Petals large, reddish-purple, spreading, imbricate at the base.

Villous Rock-Rose. Fl. Ju. Jul. Clt. 1640. Sh. 3 feet.

6 C. rotundifo'lius (Sweet, cist. t. 75.) leaves roundish-ovate, obtuse, flat, wrinkled, reticulately veined, clothed on both surfaces with fascicled hairs; petioles furrowed, somewhat sheathing at the base; peduncles very hairy, rather cymose; sepals cordate, acute, pilose; petals imbricate. ♄. F. Native of the south of Europe. Cístus villòsus, β, viréscens, D. C. prod. 1. p. 264. ?—Barrel. icon. 1315. Petals purple, with a yellow mark at the base of each.

Round-leaved Rock-Rose. Fl. June, Sept. Clt. 1640. Sh. 1 foot.

7 C. Cre'ticus (Lin. spec. 1. p. 738.) leaves spatulate-ovate, tomentosely-hairy, wrinkled, drawn out along the short footstalk, waved on the margin; peduncles 1-flowered; sepals villous. ♄. F. Native of Crete and Syria. Jacq. icon. rar. 1. t. 95. Sweet, cist. t. 63. Smith, fl. græc. 495.—Buxb. cent. 3. p. 34. t. 64. f. 1. Petals purple, yellow at the base, imbricate. Sepals acuminate. Capsule pilose, round.

Var. β, *crispàtus* (D. C. prod. 1. p. 264.) leaves waved or curled. Flowers purple.

Var. γ, *Taúricus* (D. C. prod. 1. p. 264.) leaves flat, very villous on the under surface, as well as sepals. ♄. F. Native of Tauria. Cístus Créticus, Bieb. Flowers purple.

Cretan Rock-Rose. Fl. Ju. July. Clt. 1731. Shrub 2 feet.

8 C. inca'nus (Lin. spec. 737.) leaves spathulate, tomentose, wrinkled, somewhat 3-nerved, sessile, somewhat connate at the base, upper ones narrower; peduncles 1-3-flowered. ♄. F. Native of Spain, and France about Narbonne. Curt. bot. mag. t. 43. Smith, fl. græc. 494. Petals emarginate, reddish-purple, imbricate.

Hoary Rock-Rose. Fl. Ju. Aug. Clt. 1596. Shrub 3 feet.

9 C. cane'scens (Sweet, cist. t. 45.) leaves oblong-linear, bluntish, tomentose, hoary, waved, rather 3-nerved, sessile, somewhat connate at the base; peduncles terminal, 1-flowered, or somewhat cymose; sepals ovate, acute, nerved, clothed with starry

pubescence; petals obovate, distinct. ♄. F. Native of the south of Europe. Petals crenulated, of a darkish-purple, tinged with blue and with a yellow spot at the base of each. Cístus. Mas. Clus. hist. p. 69. icon. C. incànus β, D. C. prod. 1. p. 264.

Canescent-leaved Rock-Rose. Fl. May, June. Clt.? Sh. 2 ft.

10 C. undula'tus (Dun. ined. in D. C. prod. 1. p. 264.) leaves sessile, linear-oblong, acute, with waved margins, 3-nerved at the base; peduncles solitary, each furnished with a bractea; sepals taper-pointed, villous. ♄. F. Native? Flowers purple, with a yellow mark at the base of each petal. Perhaps only a cultivated variety of *Cístus críspus*.

Waved-leaved Rock-Rose. Fl. June, July. Clt.? Shrub 2 ft.

11 C. cri'spus (Lin. spec. 738.) leaves sessile, linear-lanceolate, undulately-curled, 3-nerved, wrinkled, pubescent; flowers almost sessile, 3 or 4 together, somewhat umbellate. ♄. F. Native of the south of France, Spain, and Portugal. Cav. icon. 2. p. 57. t. 174. Sweet, cist. 22. Petals purple.

Curled-leaved Rock-Rose. Fl. Ju. Aug. Clt. 1656. Shrub 2 ft.

12 C. a'lbidus (Lin. spec. 737.) leaves sessile, oblong-elliptical, hoary-tomentose, somewhat 3-nerved; flowers 3 or 8, terminal, somewhat umbellate; outer sepals largest. ♄. F. Native of France about Narbonne, Spain, and Portugal. Petals pale-purple, yellow at the base, imbricate.

White-leaved Rock-Rose. Fl. Ju. Aug. Clt. 1640. Shrub 2 ft.

13 C. candidi'ssimus (Dun. ined. in D. C. prod. 1. p. 264.) leaves ovate-elliptical, acute, densely clothed with hoary tomentum, 3-nerved; footstalks short and sheathing at the base, with pilose margins; peduncles solitary, 1-flowered, shorter than the leaves; outer sepals one-half shorter than the rest. ♄. F. Native of the Grand Canary Island in elevated pine forests. Flowers pale rose-coloured. Petals distinct. Sweet, cist. t. 3.

Whitest-leaved Rock-Rose. Fl. Ju. Aug. Clt. 1817. Sh. 4 ft.

14 C. vagina'tus (Ait. hort. kew. 3. p. 304.) leaves lanceolate, acute, 3-nerved, hairy, under surface reticulated; footstalks furrowed, dilated, and sheathing at the base, with pilose margins; peduncles 3-flowered, axillary or terminal, long, bracteate at the base. ♄. F. Native of the island of Teneriffe. Jacq. hort. Schœnbr. 3. p. 17. t. 282. Sweet, cist. 9. Cístus symphytifòlius, Lam. dict. 2. p. 15. Corolla yellowish at the base, the rest pale-purple. Petals imbricate.

Sheathed-petioled Rock-Rose. Fl. April. June. Clt. 1779. Shrub 2 feet.

15 C. seri'ceus (Vahl. symb. 1. p. 37.) leaves ovate, tomentose, 3-nerved, lower ones on footstalks, upper ones sessile; peduncles hairy. ♄. F. Native of Spain.—Barrel. icon. 1315. Hairs of the peduncles long, purplish. Petals and filaments purple. Anthers yellow.

Silky-leaved Rock-Rose. Fl. Ju. Jul. Clt. 1826. Shrub 3 ft.

16 C. hy'bridus (Vahl. symb. 1. p. 37.) leaves ovate, hoary, on footstalks; branches beset with yellow scales; peduncles elongated, subracemose, hairy; outer sepals caducous. ♄. F. Native of Spain. Petals purple.

Hybrid Rock-Rose. Fl. June, July. Shrub 3 feet.

§ 2. *Peduncles cymose. Style almost wanting. Stigma capitate, shorter than the stamens.*

17 C. cymòsus (Dunal, ined. in D. C. prod. 1. p. 265.) leaves broad-ovate, twisted at the top, acutish, under surface wrinkled and hoary; footstalks dilated at the base, and somewhat sheathing, furrowed above; peduncles cymose, 5-10-flowered, hoary, axillary or terminal. ♄. F. Native of?—formerly cultivated in the garden of Cels, under the name of *Cístus incànus*. Petals purple, with a yellow mark at the base of each.

Cymose-flowered Rock-Rose. Fl. June, Aug. Shrub 3 feet.

Sect. II. Ledònia (ληδον, *ledon*, a name given by Dioscorides to a tree that produces a substance like ladanum, which is supposed to be *Cístus Lèdon*.) D. C. prod. 1. p. 265. Sepals 5, 2 outer ones largest, and very much pointed, or wanting. Petals white or whitish, with a yellow or purple mark at the base of each. Stamens numerous, longer than the pistil. Stigma almost sessile, large, capitate. Capsules 5 or 10-celled, from being furnished with 5 or 10 seminiferous partitions, one in the middle of each valve. Shrubs or sub-shrubs. Leaves usually covered with clammy gluten.

§ 1. *Peduncles 1-flowered, or many-flowered, cymose. Sepals 5, outer ones usually cordate at the base, and pointed at the apex. Capsules 5-celled.*

* *Peduncles naked at the base, usually bearing beneath their middle two opposite small leaves.*

18 C. salvifòlius (Lin. spec. 738.) leaves stalked, ovate, obtuse, wrinkled, under surface tomentose; peduncles long, white from tomentum, 1-flowered, articulated above, solitary or tern. ♄. H. Native of Switzerland, south of France, Italy, Greece, Spain, and Portugal. Cav. icon. 2. p. 31. t. 137. Jacq. coll. 2. p. 120. t. 8. Sweet, cist. 54. Smith, fl. græc. t. 497. Cístus fémina, Clus. hist. 1. p. 70. icon. Flowers middle-sized, white. (f. 60.)

FIG. 60.

Var. α, *erectiúsculus* (D.C. prod. 1. p. 265.) stem erectish.

Var. β, *ochroleùcus* (D.C. prod. l. c.) flowers cream-coloured.

Sage-leaved Rock-Rose. Fl. Ju. Aug. Clt. 1548. Shrub 2 feet.

19 C. obtusifòlius (Sweet, cist. t. 42.) leaves almost sessile, tapering to the base, ovate-oblong, obtuse, wrinkled, clothed with starry pubescence; margins somewhat denticulated; peduncles terminal, cymose, many-flowered; outer sepals broadly-cordate, acute; petals obcordate, imbricated. ♄. F. Native of Crete. Petals white, with a yellow spot at the base of each.

Obtuse-leaved Rock-Rose. Fl. June, Aug. Clt.? Sh. 1 to 1½ ft.

20 C. Cupania'nus (Presl. ex Spreng. syst. append. p. 206.) stem erect; leaves stalked, cordate-ovate, acute, wrinkled, reticulately-veined, upper surface scabrous, under surface covered with fascicled hairs, margin fringed; peduncles pilose, 2-3-flowered; sepals villous, acuminated; petals imbricated. ♄. F. Native of Sicily. Flowers white, with a spot of yellow at the base of each petal. Sweet, cist. t. 70.

Cupani's Rock-Rose. Fl. Ju. July. Clt.? Shrub 2 feet.

21 C. acutifòlius (Sweet, cist. t. 78.) leaves cordate-ovate, 3-nerved, reticulately-veined, pubescent on both surfaces; branches twiggy, diffuse, rather prostrate; peduncles tomentose, generally 3-flowered; sepals cordate, acute, shining, rather pilose, ciliated; petals obcordate, imbricated at the base. ♄. H. Native —? Petals white, yellow at the bottom. C. salvifòlius β, humifûsus, D. C. prod. 1. p. 265.

Acute-leaved Rock-Rose. Fl. May, Sept. Clt. 1548. Sh. rather procumbent.

22 C. Corbarie'nsis (Pourr. in herb. D. C. prod. 1. p. 265.) leaves stalked, somewhat cordate, ovate, acuminated, with fringed margins, wrinkled on both surfaces and very glutinous; peduncles long, 1-5-flowered. ♄. H. Native of the south of France on the mountains called Les Corbieres, and in Spain. Sweet, cist. 8. C. hýbridus, Pourr. chlor. narb. p. 36. not of Vahl. C. salvifòlius β, D. C. fl. fr. 4. p. 813. Petals white, imbricate.

Corbiere Rock-Rose. Fl. May, June. Clt. 1656. Shrub 2½ ft.

23 C. Florenti'nus (Lam. dict. 2. p. 17.) leaves narrow-lanceolate, wrinkled, reticulated on the under surface, almost sessile; peduncles villous, generally 3-flowered. ♄. H. Native of Italy. Sweet, cist. t. 59. Petals white, yellow at the base, imbricate. Sepals acuminate.

Florentine Rock-Rose. Fl. June, Jul. Clt. 1825. Shrub 3 ft.

24 C. Monspelie'nsis (Lin. spec. 737.) leaves linear-lanceolate, sessile, 3-nerved, clammy, villous on both surfaces; peduncles pilose cymose, somewhat secund. ♄. H. Native of the south of France, Spain, and Portugal. Lam. ill. t. 477. f. 4. Cav. icon. 2. t. 137. Jacq. coll. 2. t. 8. Sweet, cist. t. 27. Smith, fl. græc. t. 493. Flowers middle-sized, white. Petals imbricate, crenate.

Montpelier Rock-Rose. Fl. June, July. Clt. 1656. Shrub 4 ft.

25 C. platyse'palus (Sweet, cist. t. 47.) leaves oblong-lanceolate, sessile, wrinkled, 3-nerved, villous on both surfaces; peduncles cymose, and are as well as the calyxes villous; sepals acuminated, outer ones broadly-cordate; petals obcordate, distinct. ♄. F. Native of Crete. Petals white, with a yellow spot at the base of each.

Broad-sepalled Rock-Rose. Fl. June, July. Clt. —? Shrub 3 or 4 feet.

26 C. Le'don (Lam. dict. 2. p. 17.) leaves connate, oblong-lanceolate, nerved, upper surface smooth shining, under surface silky villous; flowers corymbosely-cymose; peduncles and calyx clothed with silky villi. ♄. H. Native of the south of France. Duh. arb. 1. p. 168. t. 66. Petals white, with a yellow mark at the base of each. C. undulàtus, Link?

Ledon Rock-Rose. Fl. June, Aug. Clt. 1730. Shrub 1 foot.

27 C. hirsu'tus (Lam. dict. 2. p. 17.) leaves sessile, oblong, blunt, hairy; peduncles short, 1-flowered, or cymose many-flowered; capsules small, covered by the large, hairy, pyramidal calyx. ♄. H. Native of France near Landerneau, and on the mountains of Spain. Sweet, cist. 19. Lèdon IV. Clus. hist. 1. p. 78. Petals white, with a yellow mark at the base of each, imbricate.

Hairy Rock-Rose. Fl. June, July. Clt. 1656. Shrub 2 feet.

28 C. sideri'tis (Presl. ex Spreng. syst. append. p. 204.) decumbent; leaves stalked, obovate, a little wrinkled, covered with hoary tomentum on the under surface; peduncles elongated, 1-2-flowered, articulated above, and are as well as the calyx tomentose; flowers nodding before expansion. ♄. H. Native of Sicily. Flowers white.

Sideritis-like Rock-Rose. Fl. June, Aug. Shrub decumbent.

29 C. la'xus (Ait. hort. kew. 3. p. 305.) leaves on short footstalks, ovate-lanceolate, acuminated, with wavy, somewhat toothed margins, smoothish, upper ones hairy; flowers cymose; peduncles and calyx hairy. ♄. H. Native of Spain and Portugal. Sweet, cist. 12. Cístus Capénsis, Lin. spec. 736.? from Burm. herb. Flowers white, with a yellow spot at the base of each petal. Petals imbricate.

Lax-flowered Rock-Rose. Fl. Ju. Aug. Clt. 1656. Sh. 3 feet.

30 C. parvifo'lius (Sweet, cist. p. 8.) stem erect, much branched; branches rather crowded, erect, densely woolly; leaves small, ovate, acute, rounded at the base, waved, wrinkled, netted with veins, slightly crenulated on the margins, hairy on both surfaces, rather hoary; peduncles axillary, 1-3-flowered, nodding before expansion; sepals acuminated, and clothed with stellate hairs. ♄. H. Native of the south of Europe. Flowers white.

Small-leaved Rock-Rose. Fl. Ju. Aug. Clt.? Sh. 2 feet.

31 C. oblongifo'lius (Sweet, cist. t. 67.) erect; branches hispid-villous; leaves on short footstalks, oblong-lanceolate, obtuse, pubescent and waved at the margins, under surface veiny; peduncles cymose; petals concave, imbricated. ♄. H. Native of Spain.? Petals white, with a yellow spot at the base of each.

Oblong-leaved Rock-Rose. Fl. Ju. Jul. Clt.? Sh. 4 feet.

32 C. asperifo'lius (Sweet, cist. t. 87.) leaves almost sessile, ovate-lanceolate, acute, 3-nerved, wrinkled, smoothish, with wavy margins, somewhat denticulated, ciliated, netted with veins beneath, with the nerves and veins rough; flowers cymose; peduncles and calyxes hairy; petals imbricate. ♄. H. Native of? Petals white, yellow at the base, and tinged with red at the top.

Rough-leaved Rock-Rose. Fl. May, Aug. Clt.? Sh. 2 feet.

33 C. psilose'palus (Sweet, cist. t. 33.) leaves on short footstalks, oblong-lanceolate, 3-nerved, acute, with undulated margins, which are somewhat denticulated and ciliated, rather hairy; flowers somewhat cymose; peduncles hairy-tomentose; sepals with long points, glabrous, shining, with ciliated edges; petals broad-cuneated, imbricated. ♄. H. Native? Petals white, with a yellow mark at the base of each.

Smooth-sepalled Rock-Rose. Fl. Ju. Aug. Clt.? Sh. 2 or 3 ft.

* * *Peduncles with small, concave, coriaceous, yellowish, decussate, caducous bracteoles at the base; and with two larger opposite ones beneath the middle.*

34 C. longifo'lius (Lam. dict. 2. p. 16.) leaves on short footstalks, oblong-lanceolate, with waved and pubescent margins, under surface veiny; peduncles cymose. ♄. H. Native of Spain and south of France, about Narbonne. Cístus nígricans, Pourr. act. toul. 3. p. 311. Flowers white, with a yellow mark at the base of each petal.

Long-leaved Rock-Rose. Fl. Ju. Aug. Clt.? Shrub 4 feet.

35 C. populifo'lius (Lin. spec. 736.) leaves stalked, cordate, acuminate, wrinkled, smooth; flowers cymose; peduncles bracteate; bracteas oblong; sepals acuminate, clammy. ♄. H. Flowers white. Petals distinct.

Var. β, mìnor (D. C. prod. 1. c.) peduncles and calyx smoothish, shining, clammy. ♄. H. Native of the south of France, Spain, and Portugal. Lèdon latifòlium, 2 Clus. hist. 1. p. 78. Cístus populifòlius, Cav. icon. 3. t. 215. Sweet, cist. t. 23.

Poplar-leaved Rock-Rose. Fl. May, Ju. Clt. 1656. Sh. 3 ft.

36 C. latifo'lius (Sweet, cist. 15.) leaves stalked, broad, cordate, acute, with curled, waved, denticulated, ciliated margins; peduncles bracteate, long, somewhat cymose, pilose; sepals broad-cordate, villous; petals imbricated. ♄. F. Native of Barbary. Cístus populifòlius, var. *a*, màjor, D. C. prod. 1. p. 266. Petals white, with a yellow spot at the base of each.

Broad-leaved Rock-Rose. Fl. May, Ju. Clt. 1656. Sh. 3 ft.

§. 2. *Peduncles bracteate; bracteas caducous, decussate, lower ones smaller, 1-flowered, axillary solitary, or terminal umbellate. Calyx of 3-sepals. Capsules 5-10-celled.*

* *Stigma large, sessile.*

37 C. laurifo'lius (Lin. spec. 736.) leaves stalked, ovate-lanceolate, 3-nerved, upper surface glabrous, under surface tomentose; footstalks dilated and connate at the base; capsules 5-celled. ♄. H. Native of the south of France and Spain. Sweet, cist. t. 52.—Clus. hist. 1. p. 78. f. 1. Flowers white, with a yellow mark at the base of each petal.

Laurel-leaved Gum-Cistus. Fl. Ju. Aug. Clt. 1731. Sh. 4 ft.

38 C. Cy'prius (Lam. dict. 2. p. 16.) leaves stalked, oblong-lanceolate, upper surface glabrous, under surface clothed with hoary tomentum; peduncles generally many-flowered; petals spotted; capsules 5-celled. ♄. H. Native of the island of Cyprus. Sweet, cist. 39. C. ladaníferus, Sims, bot. mag. t. 112. Perhaps Cístus stenophýllus, Link enum. 2. p. 74.? Flowers white, with a dark spot at the base of each petal. Petals imbricate.

Cyprus Gum-Cistus or Rock-Rose. Fl. Ju. Jul. Clt. 1800. Shrub 4 feet.

39 C. ladanìferus (Lin. spec. 737.) leaves almost sessile, connate at the base, linear-lanceolate, 3-nerved, upper surface glabrous, under surface tomentose; capsule 10-celled. ♄. F. Native of Spain and Portugal, on hills. Petals imbricate.

Var. α, *albiflòrus* (D. C. prod. 1. p. 266.) petals white, yellow at the base. Sweet, cist. t. 84. Lèdon. I. Clus. hist. 1. p. 78. icon.

Var. γ, *maculàtus* (D. C. prod. l. c.) petals white, each marked near the base with a dark blood-coloured spot. Sweet, cist. t. 1. C. ladaníferus β, planifòlius, Ait. hort. kew. 3. p. 305.

The *Cístus ladaníferus* and *Lèdon* produce the gum Ladanum, but not in such quantities as *C. Créticus*. The resin which is secreted from the leaves and other parts of the shrub is scraped off by means of a kind of rake, called in Candia, *Ergatiri*, to which numerous leathern thongs are appended instead of teeth. This instrument being drawn backwards and forwards over the plant from time to time collects the resin. Dioscorides says they gather the Ladanum by means of goats, which browzing on the leaves of the shrub, return to the stable with their beards loaded with a fat substance, which the peasants rake off with a kind of comb made on purpose. The chief use of this gum in modern practice is in fumigations, cephalic and stomachic plasters, its fragrant smell having made it a constant ingredient in such preparations; sometimes it is used in torches. It was formerly exhibited as a pectoral and astringent in catarrhal affections, dysenteries, and several other diseases. The best is in dark-coloured masses of the consistence of soft plaister, growing still softer on being handled. The other is in long rolls, coiled up and much harder than the preceding, and not so dark. It should be observed that Ladanum gives out its active matter to spirit of wine, which dissolves nearly the whole of the pure Ladanum into gold-coloured liquor, and little or nothing to water, from its being entirely resinous, and consequently not soluble in water.

Ladanum-bearing Rock-Rose or Gum-Cistus. Fl. Ju. July. Clt. 1629. Shrub 4 feet.

** *Stigma capitate, small. Style cylindrical, equalling the stamens in length.*

40 C. Clu'sii (Dunal, ined. D. C. prod. 1. p. 266.) erect; leaves somewhat 3-nerved, linear, with revolute margins, under surface canescent; flowers somewhat capitate; calyx 3-5-sepalled, pilose; sepals ovate, acute; capsules 5-celled. ♄. F. Native of Spain and Barbary. Sweet, cist. t. 32. Cístus Libanòtis, β, Lam. dict. 2. p. 18. Desf. atl. 1. p. 412, exclusive of the synonym. C. undulàtus, Link. Lèdon. VII. Clus. hist. 1. p. 80. icon. Bracteas pilose, broad-ovate, acuminated, ciliated, caducous, somewhat longer than the peduncles. Petals white. Habit of *Heliánthemum Libanòtis*, with the character of *Ledònia*.

Clusius's Rock-Rose. Fl. Ju. Jul. Clt. 1810. Shrub 2 feet.

* *A species not sufficiently known.*

41 C. Co'rsicus (Lois. in ann. soc. lin. par. vol. 4.) leaves opposite stalked, ovate, acuminated, rather tomentose, reticulated with veins beneath; peduncles usually 1-flowered, and are, as well as the calyx villous; branches and leaves rough from starry small hairs. ♄. H. Native of Corsica. Perhaps a species of *Heliánthemum*.

Corsican Rock-Rose. Shrub.

Cult. The species of the genus *Cístus* or *Rock-Rose* deserve to be cultivated in every garden for the beauty of their flowers and leaves. The greater part of those marked frame shrubs will survive a severe winter if planted against a south wall so as to be covered with mats in severe frosts; but notwithstanding, we would recommend a plant of each of these tenderer sorts to be kept in the green-house during winter, and to be planted out in the spring. They may be either increased by seeds or layers, or by ripened cuttings, taken off in July or August, which if planted thinly under a hand-glass will root readily.

II. HELIA'NTHEMUM (from ηλιος, *helios*, the sun, and ανθος, *anthos*, a flower; because the flowers open with the rising of the sun in the morning, and the petals fall off with the setting of the sun in the evening. The flowers of *Heliánthemum*, as well as *Cístus*, only last for a few hours while the sun shines; but if the weather is dull, and the sun does not make its appearance, the flowers do not open, but will remain unexpanded. Should this continue for several days together, they will decay in the bud.) Tourn. inst. 248. t. 128. Gært. fr. 1. p. 371. t. 76. D. C. fl. fr. 4. p. 815. prod. 1. p. 266. Císti species, Lin.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 3 equal sepals; but when 5, they are disposed in a double series, the two outer sepals are usually smaller than the inner ones, very rarely larger. Petals 5, usually regularly denticulated at the top. Stigma capitate. Style sometimes almost wanting, sometimes straight, sometimes oblique, and sometimes bent at the base. Ovary triquetrous. Capsule 3-valved; valves with a narrow dissepiment, or a seminiferous nerve in the middle of each. Seeds angular, smooth. Albumen mealy. Embryo uncinately-inflexed, as in. H. vulgàre, Gært. 1. p. 371. t. 76. f. 11. Erect or trailing herbs, subshrubs, or shrubs. Leaves opposite and alternate, with or without stipulas, 3-nerved, or feather-nerved. Pedicels usually furnished with bracteas at the base, sometimes opposite the bracteas, or opposite the leaves, sometimes solitary, sometimes umbellate, and sometimes racemose; racemes secund, sometimes corymbose, sometimes paniculate; and before the flowers expand the racemes at the top are bent or twisted backwards, and become gradually erect as the flowers expand. Flowers yellow, red, or white.

This genus is divided into three particular series, viz.—

I. Style straight, erect, almost wanting, or shorter than the stamens. Stigma capitate. Sect. I. II. and III., *Halìmium*, *Lecheoìdes*, and *Tuberària*, belong to this.

II. Style straight, erect, equal with or longer than the stamens. Sect. IV. and V., *Maculària*, and *Brachypétalum*, belong to this.

III. Style bent at the base. Sect. VI. VII. VIII. and IX., *Eriocárpum*, *Fumàna*, *Pseudocístus*, and *Euheliánthemum*, belong to this.

Sect. I. Hali'mium (αλιμος, *halimos*, marine; habitation of plants by the sea-side). D. C. prod. 1. p. 267. Calyx usually of 3 equal sepals, rarely of 5 unequal sepals, but when this is the case the two outer ones are small. Petals rarely white, usually yellow, wedge-shaped, truncate, and usually marked at the base with a dark-bloody or intense yellow spot. Style straight, short, or almost wanting. Stigma capitate, somewhat 3-lobed. Seeds few, blackish, minutely muricated, somewhat angular. Erect shrubs. Leaves opposite, 3-nerved, without stipulas, pilose or tomentose. Peduncles 1-3-flowered, axillary, solitary, or umbellate, rarely panicled.

* *Style short, straight.*

1 H. Libanòtis (Willd. enum. 570.) erect, smoothish, branched; leaves sessile, linear, with revolute margins, upper surface brownish-green, under surface somewhat canescent; bracteas oblong-linear, shorter than the peduncles; peduncles solitary, 1-flowered; calyx of 3 sepals, smooth, shining, ovate-acuminate. ♄. F. Native of Portugal and Mauritania. Cístus Libanòtis, Lin. spec. 739. Brot. fl. lus. 2. p. 261.; but not of Lam. nor Desf.—H. rosmarinifòlium, Lag. in litt. but not of

Pursh.—Barrel. icon. 294.—Lèdon VIII. Clus. hist. I. p. 80. icon. Petals yellowish. Style one-half shorter than the stamens. Stigma small.

Rosemary-leaved Sun-Rose. Fl. Ju. July. Clt. 1752. Shrub 1 foot.

2 H. UMBELLA'TUM (Mill. dict. no. 5.) suffruticose, branched, younger branches tomentosely-pilose, clammy; leaves sessile, linear-oblong, with revolute margins, clammy, under surface tomentose; peduncles 1-flowered, disposed in whorled racemes, terminal, umbellate; calyx 3-sepalled, villous. ♄. F. Native of France, Spain, and Portugal. Cístus umbellàtus, Lin. spec. 739. Petals white, imbricate. Style one-half shorter than the stamens. Stigma small.

Var. a, eréctus (D. C. prod. 1. p. 267.) stem erect; leaves on the under surface clothed with greenish tomentum. Sweet, cist. 5. Cístus umbellàtus, Lam. dict. 2. p. 18.—Cístus verticillàtus, Brot. fl. lus. 2. p. 262. Lèdon X. Clus. hist. 1. p. 80.

Var. β, subdecúmbens, (D. C. prod. 1. p. 267.) stem somewhat decumbent: leaves somewhat ciliated, clothed with white tomentum on the under surface. Cístus umbellàtus, *a*, Lam. dict. 2. p. 18. Brot. fl. lus. 2. p. 262.

Umbellate-flowered Sun-Rose. Fl. June, August. Clt. 1731. Shrub 1 foot.

3 H. OCYMOI'DES (Pers. ench. 2. p. 76.) erect, branched; branches hoary; cauline leaves obovate, or ovate-oblong, 3-nerved, almost sessile, green, those of the branches are stalked and keeled on the back, reflexed at the top, hoary on both surfaces; peduncles long, branched, paniculate; pedicels opposite, somewhat umbellate; calyx of 3 much-pointed sepals. ♄. F. Native of Spain and Portugal. Cístus ocymoìdes, Lam. dict. 2. p. 18. Cístus sampsucifòlius, Cav. icon. 1. p. 65. t. 96.—Clus. hist. 1. p. 72. icon. Petals distinct, yellow, spotless, or marked with a dark purple spot at the base of each. Stamens dark purple at the top, and yellow at the base.

Var. a, peduncles glabrous.

Var. β, branches and peduncles rather hairy.

Ocymum-like Sun-Rose. Fl. June, August. Clt.? Shrub 3 feet.

* * *Style almost none; stigma large.*

4 H. ALYSSOI'DES (Vent. choix. t. 20.) erect, much branched, diffuse, spreading; branches hoary, tomentosely-hairy at the top; leaves sessile, tapering towards the base, oblong-ovate, bluntish, covered with short hairs, younger ones rather hoary, adult ones green; peduncles terminal, solitary, or umbellate, 1-2-flowered, longer than the leaves; calyx 3-sepalled, acuminated, hairy. ♄. F. Native of Spain and west of France. Cístus alyssoìdes, *a*, Lam. dict. 2. p. 20. D. C. fl. fr. 4. p. 818. Petals yellow. Flower-bud of an intense purple-colour at the top.

Alyssum-like Sun-Rose. Fl. June, Aug. Clt.? Shrub 3 ft.

5 H. RUGÒSUM (Dunal, ined. in. D. C. prod 1. p. 268.) erect; branches rather hairy, clothed with leprous tomentum, scabrous, of a brownish-grey colour; leaves sessile, tapering out into the footstalks at the base, obovate-oblong, bluntish, rather oblique, with the margins somewhat denticulated, and a little curled, tomentose on both surfaces, wrinkled, under surface hoary; peduncles terminal, axillary, or umbellate, 1-3-flowered, hairy, shorter than the leaves; calyx 3-sepalled, hairy. ♄. F. Native of Spain. Sweet, cist. t. 65. Petals yellow, crenulated, imbricate, with a large dark mark at the base.

Wrinkled-leaved Sun-Rose. June, August. Clt. 1800. Shrub 3 feet.

6 H. MICROPHY'LLUM (Sweet, cist. t. 96.) much branched, erect; branches blackish-grey, hairy-tomentose at the apex; leaves almost sessile, obtuse, keeled, tapering to the base, obscurely greyish, tomentose; flowers terminal, panicled; peduncles hairy-tomentose; pedicels 1-3-flowered, very short; calyx of 3 sepals, very hairy; petals cuneated, distinct. ♄. F. Native of the west of France, near Bordeaux. H. rugòsum, *β.* microphýllum, D. C. prod. 1. p. 268. H. alyssoìdes, *β.* microphýllum, D. C. fl. fr. suppl. p. 622. A weak shrub. Petals yellow, with a dark purple spot at the base of each.

Small-leaved Sun-Rose. Fl. June, August. Clt. 1800. Shrub 2 feet.

7 H. SCABRÒSUM (Pers. ench. 2. p. 76.) erectish; branches pilosely-tomentose, scabrous, canescent; leaves sessile, tapering to the base, oblong-ovate, acutish, roughish, 3-nerved, with waved revolute margins, upper surface green, under surface clothed with grey tomentum; peduncles terminal, 1-2-flowered, shorter than the leaves; calyx 3-sepalled, hairy; petals distinct. ♄. F. Native of the north of Portugal. Sweet, cist. 81. Cístus scabròsus, Ait. hort. kew. 2. p. 236. Brot. fl. lus. 2. p. 265. Flowers yellow.

Rough Sun-Rose. Fl. June, Aug. Clt. 1775. Shrub 3 ft.

8 H. ALGARVE'NSE (Dun. ined. in D. C. prod. 1. p. 268.) stem branched; leaves sessile, ovate-lanceolate, obtuse, hoary on the under surface, upper surface green, pilose; peduncles somewhat panicled, pilose; calyx 3-sepalled, acute, hairy. ♄. F. Native of Portugal, in the Algarves. Sweet, cist. t. 40. Cístus Algarvénsis, Curt. bot. mag. 627. H. Algarvénse, Tourn. inst. 250.? Branches, leaves, peduncles, and sepals, beset with long loose hairs. Petals yellow with a dark base, crenated, at length distinct.

Algarve Sun-Rose. Fl. June, August. Clt. 1800. Shrub 3 feet.

9 H. FORMÒSUM (Dunal. ined. and D. C. prod. 1. p. 268.) erect; branches tomentosely-villous, canescent; leaves on short footstalks, obovate-lanceolate, tomentosely-villous, younger ones hoary; peduncles and calyxes villous; calyx 3-sepalled. ♄. F. Native of Portugal. Cístus formòsus, Curt. bot. mag. 264. Petals large, yellow, marked with a black spot at the base of each.

Beautiful Sun-Rose. Fl. May, July. Clt. 1780. Shrub 4 feet.

10 H. ATRIPLICIFÒLIUM (Willd. enum. 569.) erect; branches white from leprous tomentum; leaves stalked, broad-ovate, bluntish, waved at the base, covered with leprous tomentum on both surfaces; peduncles racemose, hairy; calyx hairy, 3-sepalled, rarely 5-sepalled, with the two outer ones very minute. ♄. F. Native of Spain. Cístus atriplicifòlius, Lam. dict. 2. p. 19.—Barrel. icon. t. 292. Upper leaves sessile. Pili long, rufescent. Petals large, yellow.

Atriplex-leaved Sun-Rose. Fl. Ju. July. Clt. 1656. Shrub 4-6 feet.

11 H. LASIA'NTHUM (Pers. ench. 2. p. 76.) stem suffruticose, much branched; branches dark-cinereous, at top tomentose-hairy; leaves almost sessile, ovate-oblong, often blunt, keeled, of an obscure greyish colour, tomentose; peduncles 1-2-flowered, hairy, very short; calyx usually 3-sepalled, very hairy. ♄. F. Native of Spain. Cístus lasiánthus, Lam. dict. 2. p. 19.—Barrel. icon. t. 289? Peduncles, calyxes, and younger leaves beset with long white hairs. Calyx sometimes 5-sepalled, with the two outer sepals very narrow and smoothish at the top. Petals yellow, with or without a dark spot at the base of each.

Hairy-flowered Sun-Rose. Fl. Ju. Jul. Clt. 1826. Shrub 3 ft.

12 H. INVOLUCRA'TUM (Pers. ench. 2. p. 76.) branched, erect; branches rather greyish, tomentose; lower leaves stalked, somewhat ovate, small, hoary-tomentose, upper ones oblong-lanceolate, sessile, greenish, and roughish; peduncles very short, surrounded by the leaves; calyx 5-sepalled, inner ones hoary-tomentose, outer ones linear, smoothish, and greenish. ♄. F.

Native of Spain and Portugal. Cístus involucràtus, Lam. dict. 2. p. 20. Axillary branchlets leafy. Flowers yellow.

Involucrated-flowered Sun-Rose. Fl. June, July. Clt. 1826. Shrub 2 feet.

13 H. CHEIRANTHOÏ'DES (Pers. ench. 2. p. 76.) erect, branched; younger branches villously-tomentose, hoary; leaves tomentose, hoary; oblong-lanceolate, tapering out into the footstalk; peduncles very short, 2-flowered; calyx somewhat villous, 5-sepalled, outer sepals very minute. ♄. F. Native of Spain. Sweet, cist. t. 107. Cístus cheiranthoïdes, Lam. dict. 2. p. 19. Cístus elongàtus, Vahl. symb. 1. p. 38?—Cístus halimi folio II. Clus. hist. 1. p. 71. Floral leaves small, alternate. Flowers yellow, without a dark spot at the base of each petal, imbricate.

Wallflower-like Sun-Rose. Fl. July, Aug. Clt. 1800. Shrub 3 feet.

14 H. CA'NDIDUM (Sweet, cist. t. 25.) erect; branches leprously-white, as well as the leaves on both surfaces, which are obovate-lanceolate, tapering to the base, somewhat stalked, upper surface pilose, under surface scabrous from papillæ, rather 3-nerved; floral ones opposite, sessile, and green on both surfaces; peduncles long, rather panicled, glabrous or with a few scattered hairs; calyxes with 3 or 5 acute sepals, villous; petals imbricated. ♄. F. Native of Spain. Petals bright yellow, with a dark velvety spot at the base of each, edged with purple.

Whitened Sun-Rose. Fl. June, Aug. Clt.? Shrub 2 to 3 ft.

15 H. HALIMIFÒLIUM (Willd. enum. 569.) erect, branched; branches leprously-white at the top, as well as the leaves on both surfaces; leaves on very short footstalks, ovate-oblong, tapering to the base; peduncles long, branched, somewhat panicled, leprously-white; calyx leprous, 5-sepalled, two outer ones very narrow, linear, ♄. F. Native of Spain and Portugal by the sea-side. Sweet, cist. t. 4. Cístus halimifòlius, Lin. spec. 738.—Cístus folio halimi I. Clus. hist. 1. p. 71. Floral leaves small, alternate. Petals yellow, spotless, or each marked with a small dark-bloody spot at the base, imbricate. Capsule 2-3-valved.

Var. β, obtusifòlium (D. C. prod. 1. p. 269.) leaves obtuse. ♄. F. Growing along with var. α.

Sea-Purslane-leaved. Fl. Ju. Aug. Clt. 1656. Shrub 3 feet.

SECT. II. LECHEOÏ'DES (from *Lechea* and *idea*, similar; plants with the habit of *Lèchea.*) D. C. prod. 1. p. 269. Calyx 5-sepalled, two outer sepals narrow, linear, 3 inner ones acute, with scarious margins. Petals yellow. Style almost wanting, or very short, erect. Stigma large, capitate. Ovary triangular. Capsule smooth, shining 3-valved, 1-celled. Seeds rufescent, small. Stems herbaceous or suffruticose, ascendant or erect, usually dichotomous. Lower leaves opposite, cauline ones alternate, feather-nerved, on short footstalks or sessile, without stipulas.

* *Peduncles many-flowered, axillary, or terminal. Flowers small, crowded, yellow.*

16 H. CORYMBÒSUM (Michx. fl. bor. amer. 1. p. 307.) suffruticose, branched, erect; branches dichotomous, rather pubescent, somewhat tomentosely-cinereous at the top; cauline leaves alternate, oblong-lanceolate, bluntish, under surface clothed with woolly tomentum, upper leaves with revolute margins; corymbs fastigiate, crowded; calyx tomentosely-hairy, canescent, outer sepals linear, blunt, inner ones ovate, acute, somewhat shorter than the capsule. ♄. H. Native of New Jersey and Georgia. Style very short.

Corymb-flowered Sun-Rose. Fl. July, Aug. Shrub 1 foot.

17 H. ROSMARINIFÒLIUM (Pursh, fl. amer. sept. 2. p. 364.) erect, branched, dichotomous; branches very erect, pubescent; leaves oblong-linear, with the margins usually revolute, under surface clothed with hoary tomentum; axillary branchlets on very short peduncles, 1-3-flowered, shorter than the leaves; inner sepals ovate, acute, 3 times smaller than the petals. ♃. H. Native of Georgia, Canada, and about Boston. Lèchea màjor, Bigel. fl. bost. p. 29. Flowers minute, crowded. Capsule shining, triquetrous, rufous. Petals pale yellow.

Rosemary-leaved Sun-Rose. Fl. July, Aug. Clt. 1823. Pl. 1 ft.

18 H. GLOMERA'TUM (Lag. in litt.) suffruticose, erect, somewhat dichotomous; branches rather tomentosely-cinereous; leaves lanceolate-oblong, tapering to the base, under surface hoary; racemes axillary or terminal, many-flowered, smaller than the leaves; flowers glomerate. ♄. F. Native near Acapulca and Cimupan in New Spain. Sweet, cist. t. 110. Cístus glomeràtus, Lag. gen. et spec. p. 16. Flowers small.

Glomerate-flowered Sun-Rose. Fl. July, Aug. Clt. 1823. Shrub ¾ foot.

* * *Peduncles 1-flowered, bractless, situated on the branches.*

19 H. RAMULIFLÒRUM (Michx. fl. amer. bor. 1. p. 307.) erect, beset with powdery pili, branched at the top, somewhat dichotomous; branchlets twiggy, bearing flowers; cauline leaves lanceolate-elliptic or oblong, acute, with the margins scarcely revolute, under surface hoary-tomentose; flowers stalked, solitary; inner sepals broad-ovate, acuminated; capsule globose, length of calyx. ♃. H. Native of Carolina. Cístus virgàtus, Thibaud, ined. Peduncles and calyxes pilose. Style very short, erect.

Branch-flowered Sun-Rose. Fl. Ju. Aug. Clt. 1823. Pl. 1 ft.

20 H. CANADE'NSE (Michx. fl. bor. amer. 1. p. 308.) ascendant; branches erect, hairy; cauline leaves oblong-lanceolate, acute, hairy, under surface palest; peduncles hairy, 1-flowered, solitary; inner sepals broad-ovate, acuminated; capsules shorter than the calyx. ♃. H. Native of Canada and Carolina. Sweet, cist. 21. Cístus Canadénsis, Willd. spec. 2. p. 1199. Calyx hairy. Petals obcordate, imbricate.

Canadian Sun-Rose. Fl. July, Aug. Clt. 1799. Pl. 1 foot.

21 H. BRASILIE'NSE (Pers. ench. 2. p. 77.) suffruticose; branches simple, hairy; leaves ovate-oblong, acute, sessile, hairy; peduncles and calyxes hairy, canescent; peduncles solitary, 1-flowered; inner sepals ovate, acuminated. ♄. F. Native of Brasil on the mountains. Sweet, cist. t. 43 Cístus Brasiliénsis. Lam. dict. 2. p. 22. Cístus alternifòlius, Vahl. symb. 1. p. 38.

Brasilian Sun-Rose. Fl. Ju. July. Clt. 1823. Shrub ½ foot.

22 H. POLYGALÆFO'LIUM (Sweet, cist. t. 11.) suffruticose, flexuous, ascending, branched; branches weak, hairy-tomentose, rather hoary; cauline leaves sessile, alternate, acute, ciliated, shining, lower ones oblong-lanceolate, upper ones lanceolate-linear; peduncles 1-flowered, longer than the leaves, and are as well as the calyxes hairy-canescent; inner sepals ovate, lanceolate, acuminated; petals obcordate, concave, crenulated, imbricate at the base. ♄. F. Native of Brasil.

Milkwort-leaved Sun-Rose. Fl. Ju. July. Clt. 1823. Sh. ½ ft.

23 H. CAROLINIA'NUM (Michx. fl. bor. amer. 1. p. 307.) herbaceous, hairy, erect; leaves tomentosely-hairy, rather denticulated, green on the upper surface, on short footstalks, blunt, lower ones opposite, obovate, the rest alternate, oblong-ovate; peduncles solitary, 1-flowered, clothed with white hairs; calyx hairy; inner sepals oblong, acute. ♃. H. Native of Carolina and Georgia. Vent. cels. 74. icon. Sweet, cist. t. 99. Flowers large, with the petals slightly imbricate at the base.

Carolinian Sun-Rose. Fl. July, Aug. Clt. 1823. Pl. ¾ foot.

24 H. A'STYLUM (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 284.) stems diffuse, rather herbaceous, dwarf; leaves generally alternate, stipulate, ovate-oblong; sepals 5, the

2 outer ones linear, small; style none; stigma somewhat 3-lobed. —Native of New Spain.

Styleless Sun-Rose. Shrub.

25 H. tripe'talum (Moc. et Sesse, fl. mex. icon. ined. et D. C. prod. 1. p. 284.) stems numerous, erect, slender; leaves alternate, linear, without stipulas; sepals 5, outer 2 linear, small; petals 3.—Native of Mexico.

Three-petalled Sun-Rose. Shrub.

26 H. obcorda'tum (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 284.) erect, suffruticose; leaves alternate, oblong, stipulate, somewhat fascicled; sepals 3; petals 5, obcordate. ♄. G. Native of Mexico.

Obcordate-petalled Sun-Rose. Shrub.

Sect. III. Tubera'ria (meaning unknown). D. C. prod. 1. p. 270. Calyx 5-sepalled, 2 outer sepals smaller or larger, usually spreading. Petals yellow, often marked with a dark-purple spot at the base of each, entire, denticulated, or serrated. Stamens numerous, much longer than the pistil. Style straight, almost wanting. Stigma capitate. Capsule 3-valved. Seeds minute, yellowish. Roots perennial woody, or herbaceous, annual or biennial. Stems herbaceous, erect, or adscendant. Leaves 3-nerved, opposite, without stipulas, upper ones sometimes alternate, and usually furnished with stipulas; stipulas long, linear, acute. Flowers somewhat panicled or racemose, secund, with or without bracteas.

* *Perénnia. Leaves without stipulas. Stems pilose at the base and smooth at the top. Flowers few, bracteate, disposed in something like panicles.*

27 H. globulariæfòlium (Pers. ench. 2. p. 77.) perennial; stems ascendant, simple, rather naked at the top; radical leaves on long footstalks, obtuse, rather spatulate; cauline leaves sessile, acute, all hairy; pedicels few, furnished with bracteas at the base, disposed in something like a cyme; calyx glabrous. ♃. F. Native of the north of Portugal. Cístus globulariæfòlius, Lam. dict. 2. p. 22. Petals spotted or spotless. Stamens violet-coloured.

Globularia-leaved Sun-Rose. Fl. July. Clt. 1826. Pl. ½ ft.

28 H. Tubera'ria (Mill. dict. no. 10.) perennial; stems ascendant, almost simple; radical leaves ending in the footstalk, ovate-oblong, 3-nerved, tomentosely-hairy, canescent, under surface nerved, upper surface furrowed; cauline leaves sessile, almost smooth, lanceolate, upper ones alternate; pedicels few, furnished with bracteas at the base, disposed in something like a panicle; calyx smooth, shining. ♃. F. Native of Provence, Italy, Spain, and Portugal. Sweet, cist. t. 18. Cístus Tuberària, Lin. spec. 741. Cav. icon. 1. p. 65. t. 67. Petals distinct.

Tuberaria or Plantain-leaved Sun-Rose. Fl. July, Aug. Clt. 1752. Pl. ¾ foot.

29 H. lignòsum (Sweet, cist. t. 46.) stem tetragonal, shrubby, clothed with rough scaly bark; branches ascending, covered with hispid hairs; leaves ovate-oblong, ending in the petiole, 3-nerved, also beset with hispid hairs, canescent, under surface nerved, upper surface furrowed; floral leaves sessile, glabrous, oblong-lanceolate, uppermost ones alternate; pedicels few, furnished with bracteas at the base, rather panicled, about the length of the calyx; petals obovate, distinct, spreading. ♄. F. Native of the south of Europe.

Woody Sun-Rose. Fl. Jul. Aug. Clt. 1809. Shrub 1 foot.

** *Annua? Superior leaves usually furnished with stipulas. Racemes secund, terminal.*

30 H. bupleurifòlium (Dunal. ined. and. D. C. prod. 1. p. 270.) perennial? stem erect, pubescent at the base, upper part glabrous, rather shining; leaves oblong, acute, smooth, long, ending in the footstalk; cauline leaves opposite, uppermost ones alternate, stipulate; peduncles long, pilosely-pubescent; pedicels and calyx hairy. ♃? F. Native of Spain and Portugal. Cístus bupleurifòlius, Lam. dict. 2. p. 22. Pedicels bractless. Outer sepals ovate, obtuse, one-half shorter than the inner ones, which are acute. Stipulas long, almost linear.

Bupleurum-leaved Sun-Rose. Fl. July, Aug. Pl. ¾ foot.

31 H. heterodóxum (Dunal, ined. in herb. Banks and D. C. prod. 1. p. 270.) erect, hairy; hairs long, whitish; leaves sessile, oblong-lanceolate, tomentosely-scabrous, with the nerves on the upper surface, hairy; lower leaves opposite, upper ones alternate, stipulate; racemes secund, hairy, bractless; flowers on very short pedicels, approximate, somewhat imbricate; outer sepals largest, covering the inner ones, appearing like bracteas. ⊙? H. Native of the north of Africa near Valle, also in Spain. H. imbricàtum, Lag. in litt. Outer sepals hairy on both surfaces; inner ones smooth and shining on the inner surface, with membranous margins. Capsules acutish. Seeds numerous, somewhat globose, of an obscure yellow-glaucous colour, minutely muricated.

Heterodox Sun-Rose. Fl. Jul. Aug. Pl. ¾ foot.

32 H. plantagí'neum (Pers. ench. 2. p. 77.) erect, hairy; leaves elliptic-lanceolate, opposite, sessile, 3-nerved, under surface villously-tomentose, and hairy on the nerves; upper surface beset with simple appressed hairs; uppermost leaves oblong-linear, stipulate, somewhat alternate; racemes short, without bracteas; outer sepals smoothish, narrow-linear, nearly equal in length with the inner ones which are hoary-villous; petals denticulated. ⊙. H. Native of Crete, Corsica, Spain, and north of Africa. Cístus plantagíneus, Willd. spec. 2. p. 1197. Cístus serràtus, Desf. atl. 1. p. 416. exclusive of the synonym of Cav. Cístus guttàtus γ, Lam. dict. 2. p. 23. Plant covered with white hairs. Petals yellow, without spots.

Plantain-like Sun-Rose. Fl. Ju. Aug. Clt. 1823. Pl. ¾ ft.

33 H. gutta'tum (Mill. dict. no. 18.) rather hairy; leaves opposite, sessile, oblong-linear, 3-nerved, villously-hairy, uppermost ones alternate; racemes loose, bractless; pedicels filiform, almost naked; outer sepals one half shorter than the inner ones. ⊙. H. Native of France, Italy, Spain, Portugal, and Turkey in dry places. In Anglesea and Jersey in sandy pastures, rare. Cístus guttàtus, Lin. spec. 2. p. 742. Smith, engl. bot. 544. Fl. græc. t. 498. Curt. lond. fasc. 6. t. 33. Cístus acuminàtus, Viv. fragm. 13. t. 14. f. 1?

Var. α, Colúmnæ (D. C. prod. 1. p. 71.) petals entire and spotted at the base. Hel. flòre maculòso, Column. ecphr. 2. p. 78. t. 77. Cístus guttàtus, Smith, fl. græc. t. 498.

Var. β, Cavanellèsii (D. C. prod. l. c.) petals spotted at the base and jagged at the top. Cístus serràtus, Cav. icon. 2. p. 57. f. 1. but not of Desf.

Var. γ, Lamárckii (D. C. prod. l. c.) petals marked with a small spot at the base of each, or almost without the spot. Cístus guttàtus, β, punctàtus. Lam. dict. 2. p. 23. Perhaps H. punctàtum, no. 36.

Var. δ, exstipulàtum (D. C. prod. l. c.) stem almost simple; leaves without stipulas.

Var. ε, fulcràceum (D. C. prod. l. c.) stem branched, 2-3-forked; upper leaves furnished with long stipulas.

Spotted-petalled Sun-Rose. Fl. Ju. Aug. Britain. Pl. ½ ft.

34 H. eriocau'lon (Dunal, ined. and D. C. prod. 1. p. 271.) branched, di-trichotomous, very hairy; leaves oblong-linear, narrow, hairy, opposite, upper ones stipulate, extreme ones alternate; racemes simple, bractless; pedicels long, filiform, pilose; outer sepals narrow. ⊙. H. Native of Spain and France. Sweet, cist. t. 30. Cístus serratiflòrus, herb. Lamb. H. semistipulàtum, Lag. in litt. Hairs on the stem whitish, slender, spreading. Hairs on the leaves pressed. Petals yellow, with a dark spot at the base of each, serrated, distinct.

Hairy-stemmed Sun-Rose. Fl. Ju. Aug. Clt. 1817. Pl. ½ to 1 ft.

35 H. INCONSPI'CUUM (Thib. ined. in Pers. ench. 2. p. 77.) branched, di-trichotomous, rather hairy, slender; leaves oblong-linear, narrow, hairy, opposite, upper ones stipulate, extreme ones alternate; racemes long, filiform; pedicels short, secund; flowers minute; petals oblong-linear, smaller than the calyx, outer ones with pilose edges. ⊙. H. Native of Spain and Corsica. H. præ'cox, Saltzm. exsic.

Inconspicuous Sun-Rose. Fl. Ju. Aug. Clt. 1819. Pl. ¼ ft.

36 H. PUNCTA'TUM (Willd. enum. 570.) branched, dichotomous, rather tomentosely pubescent, somewhat cinereous; leaves oblong, feather-nerved, rather cinereous, covered with short, roughish, stellate hairs; lower leaves opposite, obtuse, upper ones alternate, acutish, stipulate; racemes long, pubescent, cinereous, few-flowered. ⊙. H. Native of the west of France. Sweet, cist. t. 61. Cístus punctàtus, Willd. spec. 2. p. 1199. Peduncles rarely bearing a large bract or small leaf in the middle. Pedicels filiform, long. Petals serrulated, small, yellow, with a darker spot on the base of each, distinct.

Dotted-petalled Sun-Rose. Fl. Ju. Jul. Clt. 1816. Pl. ½ ft.

SECT. IV. MACULA'RIA (from *macula*, a spot, in allusion to the petals having a dark spot at the base of each). D. C. prod. 1. p. 271. Calyx 5-sepalled, 2 outer sepals narrow, 3 inner ones striated. Petals yellow, with a dark spot at the base of each. Style straight and erect, twice the length of the ovary, almost equal in length to the stamens. Stigma small, somewhat 3-lobed. Capsule smooth. Subshrubs or herbs. Leaves on footstalks, feather-nerved, narrow, without stipulas. Flowers terminal, solitary, or racemose. Racemes few-flowered; pedicels secund, bracteate at their base; bracteas small, awl-shaped.

37 H. LUNULA'TUM (D. C. fl. fr. 4. p. 816.) stem suffruticose, twisted, branched; branchlets pubescent, filiform; leaves flat, oblong, acuminated at the base, with the margins usually ciliated; flowers solitary, or from 2-4 flowers in a sort of racemed umbel, terminal, on short pedicels. ♄. H. Native of the Alps of Piedmont. Cístus lunulàtus, All. auct. p. 30. t. 2. f. 3. Calyx when in flower reflexed. Petals yellow, almost entire or much crenulated, each marked with a copper-coloured moon-shaped spot towards the claw.

Var. α; upper surface of leaves green, under surface whitish.
Var. β; leaves smaller, and hoary on both surfaces.

Lunulate-marked-petalled Sun-Rose. Fl. June, Aug. Clt. 1826. Pl. ¼ foot.

38 H. PETIOLA'TUM (Thib. in Pers. ench. 2. p. 77.) stem twisted at the base; branches generally dichotomous, ascendant, slender, leprously-tomentose, cinereous; leaves oblong-linear, acute, drawn out at the base into the long footstalk, leprously-tomentose on both surfaces, under surface hoary, upper surface greenish-glaucous; racemes small, few-flowered; pedicels and calyx pubescent. ⊙. H. Native of Spain. Petals, stamens, and pistil unknown.

Long-stalked-leaved Sun-Rose. Fl. June, July. Pl. ½ foot.

SECT. V. BRACHYPE'TALUM (from βραχυς, *brachys*, short, and πεταλον, *petalon*, a petal; because the petals are shorter than the sepals). D. C. prod. 1. p. 271. Calyx 5-sepalled, outer sepals minute, inner sepals 3-nerved, acuminated. Petals yellow, sometimes with a small dark spot at the base of each, usually shorter than the calyx. Stamens few, 10-20, surrounding the ovary. Style straight, erect, thickened at the top. Stigma simple. Ovary triquetrous, with the angles usually pilose. Capsule triquetrous, rather shining. Seeds numerous, minute, pale, angular. Annual herbs, with stalked, stipulate, feather-nerved, somewhat denticulate, opposite leaves, floral ones alternate. Stipulas oblong-linear, upper ones longest. Peduncles 1-flowered, short, solitary, rarely axillary, usually almost opposite the leaves or opposite the bracteas, somewhat erect, horizontal, or bent backwards.

* *Peduncles erectish, shorter than the leaves. Inner sepals 3-nerved.*

39 H. VILLÒSUM (Thib. in Pers. ench. 2. p. 78.) stem tomentose, hairy, somewhat cinereous; leaves stalked, oblong-lanceolate, somewhat denticulated, villously tomentose on both surfaces, but much more so on the under surface, stipulate; racemes long, secund, revolute at the top before flowering, axillary and terminal; peduncles erect, villously-cinereous, generally opposite the bracteas; calyx oblong, acuminated, villous. ⊙. H. Native of Spain. Cístus villòsus, Thib. herb. Lag in litt. not of Lam. Cístus ánnuus, Lamb. herb. Bracteas sessile, ovate-oblong, sometimes sparingly toothed. Petals lanceolate, narrow, for the most part denticulated, shorter than the sepals.

Var. α; stem very simple, erect.
Var. β; stem branched at the base; branches long, simple, ascendant.

Villous Sun-Rose. Fl. June, Aug. Clt. 1823. Pl. ½ foot.

40 H. NILO'TICUM (Pers. ench. 2. p. 78.) branches erect or ascendant, rather tomentose or villous, cinereous; leaves on short footstalks, opposite, oblong-elliptical, tomentosely-villous, upper ones alternate, opposite the flowers, all stipulate; peduncles erect, and are as well as the pointed calyx tomentosely-hairy. ⊙. H. Native of Egypt, Barbary, Spain and South of France. Cístus Nilóticus, Lin. mant. 246.

Var. α, eréctum (D. C. prod. 1. p. 272.) stem erect, simple, or branched; branches ascendant; peduncles and calyxes villously-hairy.

Var. β, màjus (D. C. prod. 1. c.) stem erect, branched; branches ascendant, and are as well as the leaves and peduncles rather tomentose. This variety has, from high cultivation, become larger in all its parts than the other varieties.

Var. γ, procúmbens (D. C. prod. 1. c.) stems procumbent, ascendant, tomentosely-hairy, rather hoary; leaves tomentose on both surfaces, but especially on the under surface. Cístus ledifòlius, Gouan. fl. monsp. p. 264? Ger. gallo-prov. p. 392. no. 2. Perhaps a distinct species.

Nilotic Sun-Rose. Fl. June, Aug. Clt. 1817. Pl. ½ to 1 ft.

41 H. LEDIFÒLIUM (Willd. enum. 571.) erect, puberulous; leaves stalked, oblong-elliptic, opposite, somewhat denticulated, smoothish, stipulate; peduncles erect, smoothish, shorter than the calyx; calyx pointed, rather pubescent. ⊙. H. Native of the south of France and Spain. In England on Brent downs, Somersetshire. Sweet, cist. 41. Cístus ledifòlius, Lin. spec. 742. Smith, engl. bot. t. 2414. Cístus ánnuus, folio ledi. Lob. icon. 2. p. 118. Very like *H. Nilóticum*. Flowers pale-yellow. Petals distinct.

Ledum-leaved Sun-Rose. Fl. June, July. Britain. Pl. ½ to 1 foot.

** *Peduncles horizontal, longer than the leaves or bracteas. Flowers erect; inner sepals 3-nerved.*

42 H. INTERME'DIUM (Thib. ined. and D. C. prod. 1. p. 272.) erect, branched; branches slender, erect, or spreading, ascendant, somewhat cinereously-villous; leaves stalked, obovate-oblong, bluntish, rather denticulated, veiny, tomentose, stipulate; stipulas linear-oblong, upper ones scarcely twice the length of the footstalks; peduncles and calyxes cinereously-villous, generally opposite the leaves; calyx oblong. ⊙. H. Native of Spain near Aranjuez. Cístus salicifòlius, Cav. icon. no. 156. t. 144. Plant somewhat cinereous. Floral leaves or bracteas, alternate, linear-oblong, usually stalked, furnished with 1-2 stipulas, sometimes solitary, entire, or cut, generally shorter than the peduncles. Flowers slender.

Intermediate Sun-Rose. Fl. Ju. July. Clt. 1759. Pl. ½ foot.

43 H. DENTICULA'TUM (Thib. in Pers. ench. 2. p. 78.) branched, erect, or spreading; branches erect or ascendant, tomentosely-pubescent, somewhat cinereous at the top; leaves on short footstalks, obovate-oblong, acutish, somewhat denticulated, tomentose, upper surface greenish, under surface hoary; stipulas linear, upper ones one-half shorter than the leaves; peduncles opposite the bracteas; bracteas alternate, a little cut. ⊙. H. Native of the south of France. Cístus salicifòlius, Gouan. herb. p. 34 ? Bracteas rather ovate, often cut, sessile, without stipulas. Calyxes hoary on the outside before expansion.

Denticulated-leaved Sun-Rose. Fl. Ju. Jul. Clt. 1818. Pl. 1 ft.

44 H. SALICIFÒLIUM (Pers. ench. 2. p. 78.) branched; branches erect or ascendant, rather hairy; leaves on short footstalks, obovate-oblong, acutish, denticulated, rather tomentose, greenish on the upper surface; stipulas linear-oblong, upper ones one-half shorter than the leaves; peduncles and calyxes hairy, generally opposite the bracteas; bracteas ovate, acuminated, sessile, entire. ⊙. H. Native of Spain and Italy. Sweet, cist. t. 71. Cístus salicifòlius, Lin. spec. 742. Cav. icon. 2. p. 35. t. 144. Smith, fl. græc. t. 499. H. ánnuum, etc. Seg. ver. 3. p. 297. t. 6. f. 3 ? Branches, peduncles, and calyxes beset with slender white hairs. Petals imbricate at the base.

Var. β, latifòlium (D. C. prod. 1. p. 273.) the whole plant is larger, leaves and bracteas tomentose, greenish. ⊙. H. Native of the Levant.

Willow-leaved Sun-Rose. Fl. Ju. July. Clt. 1759. Pl. ½ ft.

* * * *Peduncles drooping before the expansion of the flowers, but erect when in flower, and retroflexed after flowering. Inner sepals 4-nerved.*

45 H. SANGUI'NEUM (Lag. in litt. and D. C. prod. 1. p. 273.) stem red, dwarf, clothed with clammy pubescence; leaves stalked, opposite, ovate, blunt, roughish, lower ones without stipulas, blood-coloured on the under surface, upper ones stipulate; stipulas oblong-linear, blunt, stalked, scarcely shorter than the leaves; peduncles beset with clammy hairs, axillary, and opposite the leaves; fructiferous peduncles bent backwards. ⊙. H. Native of Spain near Chamartin. Cístus sanguíneus, Lag. gen. et spec. nov. p. 17. varied. ann. 2. no. 19. p. 40. H. retrofráctum, Pers. ench. 2. p. 78. Cístus pusíllus, herb. Lamb. Leaves all opposite. Peduncles always axillary or opposite the leaves. Inner sepals striated.

Bloody-stemmed Sun-Rose. Fl. June, Aug. Clt. 1826. Pl. ¼ to ¾ foot.

46 H. ÆGYPTI'ACUM (Mill. dict. no. 23.) stem pubescent, erect, or ascendant; leaves on short footstalks, linear-oblong, opposite, narrow, with revolute margins, bluntish, cinereous beneath, opposite, upper ones alternate; stipulas linear, awl-shaped; peduncles filiform, pubescent; calyxes ovate-oblong, inflated, inclosing the petals. ⊙. H. Native of Egypt, Barbary, and Spain. Cístus Ægyptìacus, Lin. spec. 742. Jacq. obs. 3. p. 17. t. 68. Peduncles thickened, sometimes opposite to the short linear bracteas. Outer sepals narrow, short, inner ones with 4 ciliated nerves. Petals lanceolate, very short.

Egyptian Sun-Rose. Fl. Ju. Jul. Clt. 1764. Pl. ¾ foot.

SECT. VI. ERIOCA'RPUM (from *εριον, erion*, wool, *καρπος, karpos*, a fruit; because the capsules are pilose). D. C. prod. 1. p. 273. Calyx of 5 sepals; sepals beset with silky hairs on the outside, or rather tomentose, shining on the inside, the two outer ones minute, linear, the three inner ones ovate, furnished with 4-5-stripes. Petals a little longer than the calyx. Style erectish, bent at the base. Ovary pilose or villous. Capsule pilose. Seeds numerous, rufescent, small. Subshrubs with round branches, younger ones clothed with cinereous pubescence. Leaves opposite and alternate, bluntish, under surface cano-cinereous. Stipulas linear, shorter than the footstalks. Racemes secund, small, opposite the leaves; flowers crowded, small, sessile, or larger on short pedicels.

47 H. LÍPPII (Pers. ench. 2. p. 78.) stem erect, pubescent, whitish, somewhat bifid or rather dichotomous; leaves opposite and alternate, on short footstalks, elliptic-lanceolate or linear-oblong, obtuse, rather scabrous, glaucescent, under surface canescent; stipulas narrow, erect, length of the footstalks; racemes short; flowers sessile, crowded, bracteate at the base; bracteas very minute. ♄. F. Native of Egypt. Cístus Líppii, Lin. mant. 245. Vahl. symb. 1. p. 39. Sepals pubescent, inner ones obtuse, furnished with 4-5 ribs. Petals ovate, yellow, scarcely longer than the calyx. Stamens usually 10, shorter than the petals.

Lipp's Sun-Rose. Fl. Ju. Jul. Clt. 1820. Shrub 1 foot.

48 H. SESSILIFLO'RUM (Pers. ench. 2. p. 78.) erect, much branched; branches pubescent; leaves opposite and alternate, linear, clothed with very short cinereous tomentum, with revolute margins; stipulas linear, small; racemes short; flowers sessile, furnished with minute bracteas. ♄. F. Native of the North of Africa, on arid hills. Cístus sessiliflòrus, Desf. fl. atl. 1. p. 427. t. 106. Sepals pubescent, inner ones blunt. Petals yellow, a little longer than the calyx.

Sessile-flowered Sun-Rose. Fl. Ju. Aug. Sh. 1 to 2 feet.

49 H. RUFICO'MUM (Spreng. syst. 2. p. 589.) stem densely clothed with canescent starry fascicles of hairs; leaves on short footstalks, lower ones elliptical, obtuse, flat, upper ones narrow, linear, stipulate, and all clothed with starry hairs beneath; with the margins somewhat revolute; flowers approximate, racemose; calyx beset with brownish bristles. ♄. F. Native of the North of Africa, in Libya. Flowers yellow. Cístus ruficòmus, Viv. fl. lib. spec. p. 27. t. 14. f. 5.

Brown-haired Sun-Rose. Shrub 1 foot.

50 H. LANUGINO'SUM (Spreng. syst. 2. p. 589.) branched; clothed all over with soft canescent hairs; leaves opposite, on short footstalks, elliptical, densely clothed with wool; floral leaves sessile, lanceolate, alternate, stipulate; flowers distant in a secund raceme, reflexed before expansion; inner sepals ovate-lanceolate, 3-nerved, outer sepals linear-lanceolate, about equal in length to the inner ones; petals about the length of the calyx. ♄. F. Native of the North of Africa, in Libya. Cístus lanuginòsus, Viv. fl. lib. spec. p. 28. t. 14. f. 1. Flowers yellow.

Woolly Sun-Rose. Shrub 1 foot.

51 H. ELLÍPTICUM (Pers. ench. 2. p. 78.) stem branched, erect, cinereous; leaves opposite, elliptical, clothed with whitish leprous-tomentum, obtuse, with revolute margins; stipulas linear, small; racemes few-flowered; flowers sessile, somewhat alternating with the bracteas. ♄. F. Native of Barbary and Egypt. Sweet, cist. t. 108. Cístus ellípticus, Desf. fl. atl. 1. p. 418. t. 107. H. Líppii, Delile, ægyp. 93. Cístus stipulàris α, Forsk. ægyp. p. 101. Sepals villously-tomentose, inner ones ovate, bluntish. Petals pale yellow, a little longer than the calyx, imbricate. Upper leaves alternate.

Elliptical-leaved Sun-Rose. Fl. Ju. Jul. Shrub ¾ foot.

52 H. MICRA'NTHUM (Spreng. syst. 2. p. 588.) plant clothed with starry hairs; leaves linear, obtuse, lower ones on short stalks, opposite, nearly all flat, upper ones alternate, with revolute margins, floral ones sessile, linear, acute; stipulas linear-lanceolate, a little longer than the footstalks of the leaves; flowers racemose, distant; sepals large, 3-5-nerved, ovate, acute, longer than the petals; petals elliptical, length of the stamens. ♄. F. Native of the North of Africa, in Libya. Cístus micránthus, Viv. fl. lib. p. 28. t. 14. f. 4. Petals like those of *H. Surrejànum*, yellow.

Small-flowered Sun-Rose. Shrub ¾ foot.

53 H. KAHÍRICUM (Del. fl. ægyp. 93. t. 31. f. 2.) stem much branched, twisted at the base; branches ascendant; lower leaves opposite, the rest alternate, obovate, with revolute margins, hoary, stipulate, under surface nerved; racemes secund; flowers on short pedicels; pedicels and calyxes villous; sepals acute; capsule oblong, villous. ♄. F. Native of Egypt. Cístus stipulàtus β, Forsk, ægyp. 101. Petals approximate at the top.

Cairo Sun-Rose. Fl. Ju. Jul. Clt. 1820. Shrub 1 foot.

54 H. CONFE'RTUM (Dunal, ined. and D. C. prod. 1. p. 274.) stem naked at the base, branched; branches clothed with very short cinereous tomentum; leaves lanceolate elliptical, bluntish, minutely tomentose on both surfaces, upper surface green, under surface canescent; stipulas linear, small; racemes small, secund, opposite the leaves and terminal; flowers crowded, almost sessile; calyxes pilose; inner sepals acute. ♄. F. Native of Teneriffe. Petals yellow.

Crowded-flowered Sun-Rose. Fl. Ju. Jul. Clt. ? Sh. 1 foot.

55 H. CANARIE'NSE (Willd. enum. 571.) stem procumbent; branches rather tomentose, hoary; leaves stalked, opposite and alternate, somewhat ovate-elliptic, obtuse, covered with very short glaucous tomentum on both surfaces, under surface hoary-cinereous; stipulas awl-shaped, shorter than the footstalks; racemes terminal erect, furnished with minute bracteas; flowers on short pedicels; pedicels hoary-tomentose. ♄. F. Native of Grand Canary and Lancerotta Island, in arid places. Cístus Canariénsis, Jacq. icon. 1. p. 97. misc. 2. p. 339. H. canéscens, Mœnch. Calyx glaucous; inner sepals ovate, bluntish. Petals yellow.

Canary-Island Sun-Rose. Fl. Ju. July. Clt. 1790. Shrub trailing.

56 H. MUCRONA'TUM (Dunal. ined. and D. C. prod. 1. p. 274.) stem erectish, spreading; branches tomentosely-hairy, hoary; leaves stalked; ovate-elliptical, ventricose, mucronate, upper surface green and roughish from stellate hairs, under surface tomentose, hoary; stipulas awl-shaped, pilose, shorter than the footstalks; racemes generally terminal; flowers on short pedicels; pedicels tomentosely-hairy. ♄. F. Native of Teneriffe. Calyx clothed with silky hairs; sepals broad-ovate, bluntish. Petals yellow.

Mucronate-leaved Sun-Rose. Fl. Ju. Jul. Sh. 1 to 1½ foot.

57 H. DISTA'CHIUM (Roth. in ann. bot. 2. p. 34. under *Cístus*.) stem suffruticose, stipulate, erect; leaves opposite, oval-oblong, hoary; racemes terminal, leafy, 2-parted; flowers opposite the leaves. ♄. F. Native of Portugal.

Two-spiked Sun-Rose. Shrub 1 foot.

SECT. VII. FUMA'NA (meaning unknown.) D. C. prod. 1. p. 274. Calyx twisted at the apex before expansion, 5-sepalled; 2 outer sepals narrow, small, 3 inner ones ovate, acuminated, 4-5-veined, with scarious margins. Petals yellow, small, almost twice the length of the sepals. Stamens few. Style straight, rather longer than the stamens, when in flower oblique, after flowering erectish. Stigma capitate, fringed, somewhat 3-lobed. Capsule 3-valved, open, spreading; seeds few, blackish or rufescent, angular. Stems suffruticose. Leaves linear, sessile or sub-sessile, narrow. Pedicels 1-flowered, drooping before the expansion of the flower; when in flower erect, but afterwards reflexed.

* *Leaves alternate, without stipulas.*

58 H. ERICOÌDES (Dunal, ined. et D. C. prod. 1. p. 274.) stem erect; leaves alternate, umbricate, semi-cylindrical, short, smoothish; peduncles solitary, 1-flowered, opposite the leaves or terminal, longer than the leaves; capsules open, naked? ♄. F. Cístus ericoìdes, Cav. icon. 2. p. 56. t. 172. Cístus calycìnus, of many authors, not as is seen in Lin. mant. 565. Leaves with rather revolute margins.

Var. a, glàbrum (D. C. prod. 1. p. 174.) branches and peduncles glabrous. ♄. F. Native of Spain.

Var. β, pubéscens (D. C. l. c.) summits of the branches pubescent as well as peduncles. ♄. F. Native of the Kingdom of Naples.

Heath-like Sun-Rose. Fl. Ju. Aug. Clt. ? Sh. 1 to 1½ foot.

59 H. FUMA'NA (Mill. dict. no. 6.) stem branched, twisted, rather diffuse, erectish; lower branches procumbent; leaves alternate, linear, with pilose, roughish, rather involute margins; lower leaves short, crowded, upper ones scattered and longer; peduncles solitary, 1-flowered, rarely rameal, usually almost opposite the leaves or terminal, longer than the leaves; capsules open, naked. ♄. F. Native of the south of France, Spain, Portugal, Switzerland, Gothland and Italy. Sweet, cist. t. 16. Cístus Fumàna, Lin. spec. 740. Jacq. aust. t. 252. Cístus hùmilis, seu chamæcístus ericæ fòlio, luteus erectior, Bauh. pin. 466. Magn. bot. 69. Pedicels and calyxes sparingly pilose.

Var. a, màjus (D. C. prod. 1. p. 275.) leaves larger. Cístus Fumàna A. Desf. atl. 1. p. 414. t. 105, exclusive of the synonym of Lin. and Barrel. Petals of all the varieties imbricate.

Var. β, mìnus (D. C. l. c.) leaves somewhat filiform. Barrel. icon. 286. and 446.

Var. γ, virgàtum (D. C. l. c.) branches twiggy. H. fumanoìdes, formerly in the Paris garden.

Fumana Sun-Rose. Fl. June, July. Clt. 1752. Shrub 1 foot.

60 H. PROCU'MBENS (Dun. ined. and D. C. prod. 1. p. 275.) stem procumbent, branched; branches elongated, younger ones hoary; leaves alternate, linear, rather lax, with the margins pilose, as well as under surface; pili strigose; peduncles almost axillary, shorter than the leaves; capsules open, bearing the seeds. ♄. F. Native of the south of France, Italy, and Tauria. Sweet, Cist. t. 68. Barrel. icon. t. 445. Cístus hùmilis sive chamæcístus ericæ folio humilior, Magn. bot. p. 69. Capsules larger. Nerves of calyx strigose. Petals imbricate.

Procumbent heath-like Sun-Rose. Fl. June, August. Clt. ? Shrub procumbent.

** *Leaves alternate, stipulate.*

61 H. ARA'BICUM (Pers. ench. 2. p. 80.) stem hairy, ascendant; branches twiggy; leaves alternate, linear-oblong, hairy, almost sessile; peduncles solitary, 1-flowered, almost opposite the leaves, rameal or terminal; calyxes hairy. ♄. F. Native of Arabia, Italy, and Spain. Sweet, cist. t. 97. Cístus Arábicus, Lin. spec. 745. Smith, fl. græc. t. 503. Cístus ferrugíneus, Lam. dict. 2. p. 25. Cístus Sàvi, Bertol. H. viscídulum, Stev. Upper leaves largest. Stipulas ovate acuminated. Petals distinct.

Arabian Sun-Rose. Fl. Ju. July. Clt. 1826. Shrub ½ foot.

62 H. LÆ'VIPES (Willd. enum. 570.) stem ascendant; leaves stipulate, setaceous, glaucous, smoothish; buds leafy, axillary; stipulas long, filiform; peduncles long, disposed in secund racemes; pedicels glabrous, and bracteate at the base; calyxes hairy. ♄. F. Native of the south of Provence, Spain, and Dalmatia, on rocks exposed to the sun. Sweet, cist. t. 24. Cístus læ'vìpes, Lin. spec. 739. Jacq. hort. Schœnb. t. 158. Cav. icon. 2. p. 56. t. 173.—Ger. gallo-prov. p. 394. no. 6. t. 14.

Var. a, peduncles pubescent.

Var. β, peduncles almost glabrous.

Smooth-peduncled Sun-Rose. Fl. June, August. Clt. 1690. Shrub 1½ foot.

*** *Leaves opposite and alternate, furnished with stipulas.*

63 H. LÆ'VE (Pers. ench. 2. p. 78.) stem erectish, glabrous, branched; branches erect; leaves linear, sessile, glabrous, with

revolute margins, keeled, opposite, upper ones alternate, stipulate; stipulas long, awl-shaped; peduncles solitary, 1-flowered, sub-terminal; calyxes smooth. ♄. F. Native of Spain, on hills. Cístus lævis, Cav. icon. 2. p. 35. t. 145. f. 1. exclusive of the synonym of Barrel.

Smooth Sun-Rose. Fl. Ju. July. Clt. 1826. Shrub 1 foot.

64 H. VIRIDE (Tenor. prod. fl. neap. p. 31.) stem ascendant, glabrous; leaves opposite, linear, with revolute margins, glabrous, green, somewhat mucronate, stipulate; stipulas awl-shaped, much smaller than the leaves; peduncles racemose, beset with clammy villi, as well as the calyx. ♄. F. Native of Sicily. Leaves pale-green.

Green-leaved Sun-Rose. Fl. June, July. Clt. 1825. Shrub 1 foot.

65 H. JUNIPERINUM (Lag. in litt. and D. C. prod. 1. p. 275.) stem ascendant, branched; leaves linear-awl-shaped, ciliated, mucronate, flat, with rather revolute margins, opposite; upper leaves alternate; stipulas awl-shaped, upper ones longest; peduncles racemose, and are, as well as the calyxes, clothed with clammy hairs. ♄. F. Native of the south of France, Italy, and the kingdom of Tunis. Cístus lævipes, Durand! Gouan. fl. monsp. 263? Cístus Mauritánicus, Thib.! ined.—Barrel. icon. t. 443. Bracteas solitary, linear.

Juniper-like Sun-Rose. Fl. June, August. Clt. 1800. Shrub 1 foot.

66 H. BARRELIERI (Tenor. prod. fl. neap. p. 31.) stem erect; branches villously pubescent; leaves linear-oblong, narrowed at the base, pubescent, with revolute and ciliated margins, opposite; upper leaves alternate; stipulas linear-awl-shaped, mucronate, erect; peduncles racemose, few-flowered, and are, as well as the calyxes, beset with clammy villi. ♄. F. Native of Italy and Spain.—Barrel. rar. icon. 416.—Sims, bot. mag. 2371.

Barrelier's Sun-Rose. Fl. June, August. Clt. 1820. Shrub 1 foot.

67 H. SYRTICUM (Spreng. syst. 2. p. 593.) hairy; branches spreading, clothed with appressed white hairs; leaves almost sessile, opposite, flattish, linear-elliptical, beset with scattered hairs, hoary underneath, with revolute margins; upper leaves linear, and more acute; stipulas leaf-like, but not above half the size of the leaves, but the upper ones are about equal in size to the leaves; flowers disposed in a short secund raceme. Sepals 5, densely beset with bristles, inner ones roundish-ovate, 5-nerved, outer ones round and very short. ♄. F. Native of the North of Africa, in the Great Syrtis. Cístus Sýrticus, Viv. fl. lib. p. 27. t. 14. f. 2. Flowers violet?

Syrtic Sun-Rose. Shrub 1 foot.

68 H. THYMIFÒLIUM (Pers. ench. 2. p. 79.) stems procumbent; branches pubescent; leaves almost linear, very short, pubescent, opposite, upper ones alternate; stipulas mucronate, erect; peduncles few-flowered, clothed with clammy villi. ♄. F. Native of Spain. Sweet, cist. t. 102. Cístus thymifòlius, Lin. spec. 743. Smith, fl. græc. t. 500—Barrel. icon. rar. t. 444. H. glutinòsum, *β*. fl. fr. 4. p. 821. Young leafy shoots in the axils of the leaves. Petals imbricate.

Thyme-leaved Sun-Rose. Fl. June, Aug. Clt. 1658. Shrub procumbent.

69 H. GLUTINÒSUM (Pers. ench. 2. p. 79.) stem ascendant; branches clothed with clammy hairs, somewhat cinereous; leaves almost linear, with revolute margins, villous, clammy, somewhat cinereous, opposite, upper ones alternate; lower stipulas minute, the rest long, loose; peduncles and calyxes villous, clammy; petals distinct. ♄. F. Native of the south of France, and Spain. Sweet, cist. t. 83. Cístus glutinòsus, Lin. mant. 246.—Barrel. icon. rar. 512. t. 415? Cav. icon. 2. t. 145. f. 2. Petals pale yellow, crenulated at the top.

Clammy Sun-Rose. Fl. May, Sept. Clt. 1790. Shrub 1 ft.

SECT. VIII. PSEUDOCÍSTUS (from *ψευδης*, *pseudes*, false, and *κιστος*, *cistos*; False Cistus.) D. C. prod. 1. p. 276. Calyx of 5 sepals, outer sepals narrow, minute, inner ones 4-veined. Petals yellow, small, scarcely twice the length of the sepals. Style twisted at the base, and bent inwards at the apex, usually shorter than the stamens, rarely longer. Stigma capitate, 3-lobed. Capsule small. Seeds few, rather rufescent. Perennial herbs, or subshrubs. Leaves stalked, feather-nerved, opposite, usually without stipulas, rarely with stipulas at the summits of branches. Flowers secund, racemose, or panicled. Pedicels bracteate at the base, recurved before flowering, when in flower erect, but afterwards reflexed. Bracteas sessile, linear-lanceolate.

70 H. MÓLLE (Pers. ench. 2. p. 76.) suffruticose; branches almost simple, pilose; leaves roundish-ovate, obtuse, stalked, hairy-tomentose on both surfaces, soft; racemes simple, and are, as well as calyxes, hairy-tomentose, cinereous. ♄. F. Native of Spain. Cístus móllis, Cav. icon. 3. p. 31. t. 262. f. 2. Bracteas awl-shaped, minute, pilosely-tomentose, cinereous.

Soft-leaved Sun-Rose. Fl. June, August. Clt. 1817. Shrub 1 foot.

71 H. ORIGANIFÒLIUM (Pers. ench. 2. p. 76.) stem suffruticose, di-trichotomous; leaves stalked, ovate, pilose on both surfaces; racemes short, terminal; petals scarcely longer than the calyx. ♄. F. Native of Spain. Cístus origanifòlius, Lam. dict. 2. p. 20. Cav. icon. 3. p. 31. t. 262. f. 1. Calyx oblong. Petals one-half smaller than those of *H. mólle*.

Marjoram-leaved Sun-Rose. Fl. June, July. Clt. 1795. Shrub ½ foot.

72 H. DICHÓTOMUM (Dunal, ined. and D. C. prod. 1. p. 276.) suffruticose; branches dichotomous, smoothish; leaves minute, ovate, acute, glabrous, with revolute margins, on short foot-stalks; racemes slender, few-flowered. ♄. F. Native of Spain. Cístus dichótomus, Cav. icon. 3. p. 32. t. 263. f. 1. Flowers small, deep yellow, hardly the size of those of *Spérgula nodòsa*. Leaves small, having the appearance of those of *Thymus piperélla*.

Dichotomous-branched Sun-Rose. Fl. June, August. Clt. 1826. Shrub 1 foot, prostrate.

73 H. ŒLANDICUM (D. C. fl. fr. 4. p. 817.) stem suffruticose, procumbent, branched; leaves lanceolate-elliptical, bluntish, green on both surfaces, usually glabrous, sometimes ciliated, stalked, upper leaves sessile; racemes simple, few-flowered; calyx somewhat globose-ovate. ♄. H. Native of the Alps of Europe, especially the north of France, Œland, Switzerland, and Austria. Sweet, cist. t. 85. Cístus Œlándicus, Lin. spec. 741. Chamæcístus, 2. Clus. hist. p. 73. icon. Bracteas minute, sessile, linear-oblong. Flowers few, approximate. Petals distinct.

Œland Sun-Rose. Fl. June, August. Clt. 1816. Shrub trailing.

74 H. PULCHELLUM (Sweet, cist. t. 74.) stem suffruticose, procumbent, branched; branches clothed with hoary tomentum; leaves roundish or ovate, obtuse, upper surface green, beset with hispid hairs, under surface clothed with hoary tomentum, with the margins a little revolute; racemes simple; calyxes pilose, hoary; petals imbricate. ♄. H. Native of Germany? H. alpéstre, Spreng. syst. 2. p. 590. but not of others. Flowers yellow.

Neat Sun-Rose. Fl. June, August. Clt. 1820. Shrub procumbent.

75 H. ALPESTRE (Dunal, ined. and D. C. prod. 1. p. 276.) stem suffruticose, procumbent, branched; branches pilosely-hairy; leaves greenish on both surfaces, oblong-elliptical, rather glabrous, or with hairs in fascicles, stalked, upper leaves almost sessile; pedicels and calyxes pilosely-hairy; hairs cinereous. ♄. H. Native of Germany, Switzerland, Italy, France, on rocks. Cístus alpéstris, Crantz. austr. p. 103. t. 6. f. 1. Wahl.

helv. p. 103. Cístus Œlándicus, Jacq. austr. t. 399. Petals twice the length of calyx, imbricate.

Var. α, *glabràtum* (D. C. prod. 1. p. 277.) leaves smoothish, oblong-elliptical, bluntish, with pilose footstalks.

Var. β, *elongàtum* (D. C. prod. l. c.) branches elongated; leaves acute, pilose on both surfaces. Cístus Seguièri, Pourr. ined.

Var. γ, *canéscens* (D. C. prod. l. c.) younger leaves, peduncles, and calyxes pilose, cinereously-canescent. Cístus Œlándicus, Gouan. fl. monsp. p. 263?

Alp Sun-Rose. Fl. Ju. Aug. Clt. 1818. Shrub procumbent.

76 H. PENICILLA'TUM (Thib. ined. and D. C. prod. 1. p. 277.) suffruticose; branches procumbent, long, hispid; leaves green, with the nerves on both surfaces hispid, as well as the margins, lower leaves stalked, ovate, smaller, upper ones linear-oblong, almost sessile; racemes simple, and are as well as the calyxes hispid; flowers minute. ♄. H. Native of Spain, as well as the south of France. Cístus echioìdes, Lam. dict. 2. p. 21? Cístus A'nglicus, Lin. mant. 245? Plant with the habit of *Myosòtis Láppula*.

Pencilled-leaved Sun-Rose. Fl. June, Aug. Clt. 1826. Shrub trailing.

77 H. OBOVA'TUM (Dunal, ined. and D. C. prod. 1. p. 277.) suffruticose; branches spreading, somewhat dichotomous, clothed with cinereous tomentum towards the apex; leaves obovate or oblong, obtuse, green on both surfaces, ciliated, pilosely-strigose, lower leaves minute; racemes simple, 3-flowered; bracteas green; calyxes pilose, cinereous. ♄. F. Native of Spain near Aranjuez. Cístus Itálicus, Lin. spec. 740. exclusive of the synonyms. Leaves ending in the short footstalks.

Obovate-leaved Sun-Rose. Fl. June, July. Clt. 1826. Shrub ½ to 1 foot.

78 H. ITA'LICUM (Pers. ench. 2. p. 76.) suffruticose; branches simple, erect, long, pilosely-tomentose; leaves pilosely-hispid; hairs strigose, appressed, lower leaves ovate, smaller, upper ones lanceolate, oblong or oblong-linear; racemes simple, and are as well as calyxes pilosely-hispid, canescent. ♄. H. Native of the Mediterranean in dry regions. Cístus Itálicus, Lin. spec. 740. Cístus marifòlius, Bieb. fl. taur. cauc. 2. p. 8.—Barrel. icon. rar. 510. t. 366.

Var. α, *strigòsum* (D. C. prod. 1. p. 277.) leaves greenish on both surfaces, strigosely-pilose; peduncles and calyxes pilosely-tomentose, hoary. H. strigòsum, Fisch. in litt.

Var. β, *candidíssimum* (D. C. prod. l. c.) leaves, peduncles, and calyxes clothed with white tomentum.

Var. γ, *álbidum* (D. C. prod. l. c.) leaves whitish-tomentose on the under surface.

Italian Sun-Rose. Fl. Jul. Sept. Clt. 1799. Shrub ½ to 1 ft.

79 H. VINEA'LE (Pers. ench. 2. p. 77.) suffruticose, procumbent; branches ascendant, pilosely-tomentose, canescent; leaves ovate-oblong, upper surface green, strigosely-pilose, under surface tomentose, hoary; racemes simple, few-flowered, and are as well as the calyxes pilosely-tomentose, canescent. ♄. H. Native of the south of Germany, Switzerland, France, and Spain. Sweet, cist. t. 77. Cístus vineàlis, Willd. spec. 2. p. 1195. Perhaps a variety of *H. cànum*. Petals distinct.

Vineyard Sun-Rose. Fl. Ju. July. Clt. 1817. Trailing shrub.

80 H. CA'NUM (Dunal, ined. D. C. prod. 1. p. 277.) stem suffruticose, procumbent, branched, ascendant, pilosely-tomentose, hoary; leaves obovate, ovate, ovate-oblong or elliptical, pilose, upper surface green, under surface somewhat tomentose, hoary; racemes simple; pedicels and calyxes pilose, canescent; petals distinct. ♄. F. Native of the south of France and Germany. Sweet, cist. 56. Cístus cànus, Lin. spec. 740. Jacq. aus. t. 277. All. pedm. no. 1664. t. 45. Chamæcístus 3, Clus. hist. p. 74. Leaves variable, on the margin and middle nerve, on the under surface, as well as every where over the upper surface, covered with strigose pili. Ovary triquetrous, with marginate pilose angles. Perhaps Cistus marifòlius, Smith, eng. bot. 396.

Hoary Sun-Rose. Fl. June, July. Clt. 1772. Shrub procumbent.

81 H. MARIFÒLIUM (D. C. fl. fr. 4. p. 817.) suffruticose, procumbent; leaves without stipulas, stalked, ovate-cordate or ovate, acutish, upper surface green, pilose, under surface hoary; racemes solitary, simple, few-flowered, terminal. ♄. H. Native of Italy, Spain, and south of France. Cístus marifòlius, Lin. spec. 741. but not of Bieb. fl. taur. cauc.—Barrel. icon. rar. 521. t. 441. Calyxes ovate-oblong.

Marum-leaved Sun-Rose. Fl. June, July. Clt. 1817. Shrub trailing ½ foot.

82 H. SE'RRÆ (Cambess. in mem. mus. 14. p. 216. t. 11.) stem humble, erect, suffruticose, branched; leaves opposite, without stipulas, on short footstalks, somewhat cordate-ovate, fleshy, glaucous; flowers in racemose-corymbs; ovary 3-celled; style jointed at the base; stigma thickened. ♄. F. Native of the larger islands between Palma and a place called Prat in the sand by the sea-side. Leaves glabrous, rather hairy on the margins. Flowers yellow.

Serra's Sun-Rose. Fl. March, April. Shrub ½ foot.

83 H. RUBE'LLUM (Presl. ex Spreng. syst. 2. p. 591.) leaves ovate-roundish or oblong, acute, upper surface dark-red and smooth, under surface hoary, tomentose; flowers racemose, pendulous; calyx hairy. ♄. F. Native of Sicily.

Red-leaved Sun-Rose. Shrub ½ foot.

84 H. ROTUNDIFÒLIUM (Dunal, ined. and D. C. prod. 1. p. 277.) stem suffruticose, branched at the base; branches simple, tomentose, hoary, for the most part decumbent at the base; leaves on short footstalks, upper surface greenish-glaucous, under surface clothed with white tomentum, lower leaves almost round, the rest ovate, uppermost ones stipulate; stipulas small, oblong, deciduous; racemes solitary in twos or threes, somewhat panicled, crowded, terminal; calyxes hairy. ♄. F. Native of Spain and Barbary. Cístus nummulàrius, Cav. icon. 2. p. 34. t. 142. Desf. atl. 1. p. 423. exclusive of the synonyms of Linnæus and Magnol.

Round-leaved Sun-Rose. Fl. Ju. July. Shrub decumbent.

85 H. CRASSIFÒLIUM (Pers. ench. 2. p. 77.) stem suffruticose, erect, rather glabrous; leaves somewhat fleshy, on short footstalks; lower leaves ovate, acute, without stipulas, upper ones oblong-linear, stipulate; racemes short, rather umbellate; calyxes pilose at the base. ♄. F. Native of Barbary and Spain. Cístus glaúcus, Desf. atl. 1. p. 418. but not of Cav. H. Sétxe, Lag. in litt. on account of the plant being called *Setxe* in the kingdom of Valentia in Spain. Leaves rather pilose on the upper surface at the margins, as well as on the under surface on the middle nerve. Footstalks with a few long white hairs.

Thick-leaved Sun-Rose. Fl. May, Jul. Clt. 1818. Shrub 1 ft.

86 H. PANICULA'TUM (Dunal, ined. and D.C. prod. 1. p. 278.) suffruticose, procumbent; branches ascendant and erect, floriferous branches long, upper part stipulate; leaves stalked, ovate, bluntish, rarely roundish, upper surface green, under surface hoary; racemes opposite and tern, panicled. ♄. F. Native of Spain and Sicily on mountains. Cístus marifòlius herb. Thib. Cístus nummulàrius var. Lag. in litt. H. sp. nova Schouw. in litt. Stipulas minute, linear, acute. Flowers small.

Panicled-flowered Sun-Rose. Fl. June, Aug. Clt. 1826. Shrub procumbent.

87 H. POLYA'NTHOS (Pers. ench. 2. p. 78.) stem suffruticose, erect, hairy; leaves stalked, lower ones ovate, obtuse, smaller, under surface hoary, tomentose, stem ones ovate-oblong or lanceolate, greenish on both surfaces, with ciliated margins, stipulate; stipulas longer than the footstalks; racemes hairy, pani-

cled; pedicels filiform, and are as well as calyxes hairy. ♄. F. Native of the North of Africa. Cístus polyánthos, Desf. fl. atl. 1. p. 420. t. 108.

Many-flowered Sun-Rose. Fl. June, July. Shrub 1 foot.

88 H. CINE'REUM (Pers. ench. 2. p. 76.) stem suffruticose, erect, branched; branches opposite, hoary; leaves ovate, acute, tapering into the footstalk, densely-tomentose, and cinereously-hoary, without stipulas; upper leaves stipulate; racemes panicled, axillary opposite, or terminal in threes; calyxes hispid. ♄. F. Native of Spain. Cístus cinèreus, Cav. icon. 2. p. 33. t. 141. Flowers small. Petals entire.

Var. β, Lagascànum (D. C. prod. 1. p. 278.) stems slender; calyxes less hairy than in var. *α*. Lag. in litt.

Grey-leaved Sun-Rose. Fl. June, July. Clt.? Sh. 1 foot.

89 H. PILOSELLOI'DES (D. C. prod. 1. p. 284.) suffruticose, without stipulas; leaves elongately-elliptic, obtuse on long footstalks, upper surface green, under surface hoary-tomentose, both sides hairy; flowers in panicles. ♄. H. Native of the Pyrenees on rocks exposed to the sun. Cístus piloselloìdes, Lapeyr. abr. 301. Flowers yellow.

Pilosella-like Sun-Rose. Shrub.

90 H. SQUAMMA'TUM (Pers. ench. 2. p. 78.) stem suffruticose; branches long, erect, rather woody, silvery, leprous; leaves stalked, oblong, obtuse, leprously-silvery, stipulate; stipulas small, sessile, acute, marcescent; racemes axillary, solitary, and in threes terminal; pedicels approximate, secund, bracteate at the base; bracteas marcescent; calyxes leprous. ♄. F. Native of Spain and Barbary. Cístus squammàtus, Lin. spec. 743. Cav. icon. 2. t. 139. Desf. fl. atl. 1. p. 416.—Barrel. icon. rar. t. 328. bad. Branches 4-angled at the base. Plant covered with leprous round scales, which are depressed in the centre. Style twisted at the base, bent, longer than the stamens. Leafy branches axillary.

Scaly Sun-Rose. Fl. June, July. Clt. 1815. Shrub ¾ foot.

SECT. IX. EUHELIA'NTHEMUM (from *ευς*, *eus*, genuine, *ηλιος*, *helios*, the sun, and *ανθος*, *anthos*, a flower; that is to say, genuine species of Sun-Rose.) D. C. prod. 1. p. 278. Calyx of 5 sepals, rather twisted at the top, before expansion; outer sepals usually spreading, much smaller than the inner ones, which are usually 2 or 4 ribbed, furrowed, with scarious margins, with the inner surface shining,, and with the angles generally pilose. Petals 2, 3, or 4 times longer than the calyx. Stamens numerous. Style bent at the base, but somewhat club-shaped at the apex. Stigma simple. Capsule covered by the calyx, 3-valved, 1-celled, opening at the apex. Seeds few, convex on the outside, and angular on the inside. Subshrubs, with the stems branched from the base; branches numerous, erect or procumbent, but generally ascendant. Leaves opposite, on short footstalks, lower ones smallest, usually with revolute margins, stipulate; stipulas linear-lanceolate. Racemes terminal, secund, simple, curved backwards before flowering, after flowering erect, elongated. Pedicels laterally bracteate at the base, drooping before flowering, when in flower erect, after flowering recurved or reflexed.

* *Petals yellow.*

91 H. LAVANDULÆFÒLIUM (D. C. fl. fr. 4. p. 820.) stem suffruticose, erect, branched; branches long, terete, canescent; leaves oblong-linear, with revolute margins, under surface tomentose, hoary, younger leaves canescent on both surfaces; stipulas and bracteas linear, acute, ciliated; racemes 1-3 terminal; flowers crowded; calyxes glaucous; sepals ciliated, outer ones minute, these become reflexed after flowering, inner sepals 2-nerved, oblique, acute. ♄. H. Native of the south of France, Barbary, Spain, and Syria, in dry places. Cístus lavandulæfòlius, Lam. dict. 2. p. 25.—Barrel. icon. t. 288. Furnished with axillary leafy branches.

Var. β, Syrìacum (D. C. prod. 1. p. 279.) leaves rather flat, upper surface greenish-grey. Cístus Syrìacus, Jacq. icon. rar. t. 96.

Var. γ, Thibaùdi (Pers. ench. 2. p. 79.) racemes long, erect. Cístus racemòsus. Cav. icon. 2. p. 33. t. 140. Perhaps the same plant after flowering.

Lavender-leaved Sun-Rose. Fl. June, July. Clt. 1739. Shrub 1 foot.

92 H. BROUSSONE'TII (Dunal, ined. et D. C. prod. 1. p. 279.) stem shrubby, branched; branches opposite; leaves flat, on short footstalks, oblong-lanceolate, bluntish, tomentose on both surfaces, under surface hoary, upper surface greenish-grey; stipulas and bracteas caducous, linear, rather tomentose; racemes short, branched; flowers secund; calyxes oblong, acute; inner sepals 4-nerved, rather tomentose, yellowish. ♄. F. Native of the island of Teneriffe. Style twice the length of stamens, almost erect. Stipulas somewhat falcate.

Broussonet's Sun-Rose. Fl. June, July. Shrub 1 foot.

93 H. STŒCHADIFÒLIUM (Pers. ench. 2. p. 79.) stem erect; branches hoary, tomentose; leaves oblong-linear, bluntish, somewhat tomentose on both surfaces, under surface hoary, upper surface greenish-grey, with revolute margins; stipulas rather villous, linear-lanceolate; racemes revolute before flowering; flowers crowded; calyxes villous; outer sepals ciliated, green, inner ones acuminated, hoary. ♄. H. Native of Spain and Corsica. Sweet, cist. icon. ind. Cístus stœchadifòlius, Brot. fl. lus. 2. p. 270.

French-Lavender-leaved Sun-Rose. Fl. Ju. Jul. Clt. 1816 Sh. 1 ft.

94 H. CRÒCEUM (Pers. ench. 2. p. 79.) stem shrubby, somewhat procumbent, branched; branches simple, erect, hoary, tomentose; leaves rather tomentose, under surface canescent, upper surface glaucous, with revolute margins; lower leaves almost round, middle ones elliptic, obtuse, upper ones lanceolate, acutish; stipulas and bracteas erect, linear-oblong, villous, rather greenish; calyxes yellowish-glaucous, minutely pubescent. ♄. H. Native of Spain and Barbary. Sweet, cist. t. 53. Cístus cròceus, Desf. fl. atl. 1. p. 422. t. 110. Lower stipulas minute. Petals yellow, very much imbricated.

Var. α, stipulas longer than the footstalks of the leaves.

Var. β, stipulas setaceous, shorter than the footstalks of the leaves.

Var. γ, branches procumbent; leaves smaller; racemes few-flowered.

Saffron-coloured-flowered Sun-Rose. Fl. June, July. Clt.? Shrub procumbent.

95 H. ANDERSÒNI (Sweet, cist. t. 89.) stem suffruticose, procumbent, branched; branches ascending, canescently tomentose; leaves oblong-lanceolate, acutish, rather tomentose, grey above, and canescent beneath, with the margins a little revolute; stipulas linear, awl-shaped, ciliated, a little longer than the petioles; calyx tomentose; petals imbricate. ♄. H. Flowers yellow. This is a hybrid from *H. cròceum*, fertilized by the pollen of *H. pulveruléntum*.

Anderson's Sun-Rose. Fl. May, Aug. Clt. 1827. Sh. ascendant.

96 H. NUDICAU'LE (Dunal, ined. and D. C. prod. 1. p. 279.) stem shrubby, branched; branches smooth at bottom, but hoary-villous at the top; leaves oblong-lanceolate, with revolute margins, tomentose on both surfaces, under surface hoary, upper surface yellowish-green; stipulas linear, longer than the petioles; calyxes profoundly sulcate, hardly pubescent, with elevated pilose nerves. ♄. H. Native of Spain, on mountains in the kingdom of Valentia. Petals yellow. Perhaps a variety of *H. cròceum*?

Naked-stemmed Sun-Rose. Fl. June, July. Clt. 1826. Shrub procumbent.

97 H. GLAU'CUM (Pers. ench. 2. p. 78.) stem suffruticose, branched; branches ascendant, hoary-tomentose, hispid at the top; leaves ciliated on their margins, scarcely revolute, tomentose on both surfaces, under surface hoary, upper surface greenish-glaucous; lower leaves round, the rest elliptic, or lanceolate-oblong; stipulas and bracteas pubescent, green; pedicels and calyxes beset with white hairs. ♄. H. Native of Spain and Italy. Sweet, cist. t. 111. Cístus glaúcus, Cav. icon. 3. p. 31. t. 261. but not of Desf. Petals sulphur-coloured.

Var. α, *acutiúsculum* (D. C. prod. 1. p. 279.) upper leaves oblong, rather acuminated, upper surface glaucescent; calyxes clothed with soft hairs.

Var. β, *obtusiúsculum*, upper leaves oblong-elliptical, bluntish, upper surface roughish, green; calyxes somewhat hispid.

Glaucous Sun-Rose. Fl. June, August. Clt. 1815. Shrub 1 foot.

98 H. TOMENTO'SUM (Dunal, ined. and D. C. prod. 1. p. 279.) stem suffruticose, branched; branches elongated, ascendant, somewhat canescent; leaves lanceolate-oblong, usually with revolute margins, under surface hoary-tomentose, upper surface smoothish, green; calyxes furrowed, with elevated pilose nerves. ♄. H. Native of Spain and France: in Britain, on the mountains of Scotland. Smith, eng. bot. 2208.—Scop. carn. t. 24? Pedicels hoary, pilosely-tomentose. Bracteas smooth. Calyx violaceous. Petals yellow, imbricate. Stipulas a little fringed.

Tomentose Sun-Rose. Fl. July. Scotland. Shrub trailing.

99 H. BARBA'TUM (Pers. ench. 2. p. 79. Sweet, cist. t. 73.) stem suffruticose, erect, much branched; branches clothed with fascicled hairs; leaves hairy, green on both surfaces; lower ones roundish-ovate, upper ones elliptical; stipulas oblong, ciliated, hairy, longer than the footstalks of the leaves; racemes long, hairy, bearded, many-flowered; calyxes warted, hairy; petals crenulated, imbricate at the base. ♄. H. Native of the south of Europe. Cístus barbàtus, Lam. dict. 2. p. 24. Petals yellow.

Bearded-racemed Sun-Rose. Fl. June, July. Clt. 1820. Shrub 1 foot.

100 H. LEPTOPHY'LLUM (Dunal, ined. and D. C. prod. 1. p. 279.) stem suffruticose, woody, rather procumbent, branched; branches ascendant, rather tomentose, greyish; leaves narrow, oblong-linear, tapering into the short footstalks, with revolute margins, under surface covered with short cinereous tomentum, upper surface smoothish, green; stipulas awl-shaped, pilose, scarcely longer than the footstalks; racemes long; calyxes covered with long hairs. ♄. H. Native of Spain. Sweet, cist. t. 20. Cístus angustifòlius, Lag. in litt. but not of Jacq. Cístus stœchadifòlius, Hortul. Calyxes furrowed. Petals yellow, imbricate. Bracteas minute. Racemes loose.

Slender-leaved Sun-Rose. Fl. June, July. Clt. 1818. Shrub procumbent.

101 H. ACUMINA'TUM (Pers. ench. 2. p. 79.) branches erect, pilose at the base and the apex, middle naked; leaves on long footstalks, oblong, with revolute margins, green on both surfaces, pilose, under surface rather tomentose; stipulas smoothish, linear, longer than the footstalks of the leaves; racemes rather hairy, few-flowered, loose; calyxes smooth, shining, transparent. ♄. H. Native of the fields about Nice. Cístus serpyllifòlius, Balb. ined. Cístus acuminàtus, Viv. fragm. 13. t. 14. f. 1. is truly distinct from this plant, and is evidently a variety of *H. guttàtum*, or an allied species.

Acuminate Sun-Rose. Fl. June, July. Clt. 1820. Shrub 1 foot.

102 H. SERPYLLIFO'LIUM (Mill. dict. no. 8.) stem suffruticose; branches ascendant, glabrous at the base and pilose at the apex; leaves oblong-elliptical, with rather revolute margins, under-surface hoary-tomentose, upper surface intensely green, shining, at first rather pilose, afterwards almost smooth; stipulas and bracteas green, ciliated; calyxes canescent, with inconspicuous down, and with the nerves sparingly pilose. ♄. H. Native of the alps of Styria and Austria, as well as on the mountains of Spain. Sweet, cist. t. 60. Cístus serpyllifòlius, Lin. spec. 743. As in the preceding and following plants, the lower leaves are smaller, orbicular, and ovate. Petals distinct.

Wild-thyme-leaved Sun-Rose. Fl. May, Sept. Clt. 1731. Shrub procumbent.

103 H. VULGA'RE (Gært. fruct. 1. p. 371. t. 76.) stem suffruticose, procumbent, branched; branches elongated; leaves scarcely revolute at the margins, under surface cinereously-hoary, upper surface green, pilose, somewhat ciliated; lower leaves somewhat orbicular, middle ones ovate-elliptical, upper ones oblong; stipulas oblong-linear, ciliated, longer than the footstalks of the leaves; racemes loose; pedicels and calyxes pilose. ♄. H. Native of dry and hilly pastures throughout Europe; common in Britain. Cístus Heliánthemum, Lin. spec. 1. p. 744. Fl. dan. t. 101. Smith, engl. bot. 1321. Curt. fl. lond. fasc. 5. t. 36. Petals yellow, entire, with a fulvous base, imbricate.

Var. α; branches rather tomentose, pubescent; stipulas hardly longer than the footstalks of the leaves.

Var. β; branches glabrous at the base, pubescent at the top; stipulas 2 or 3 times longer than the footstalks of the leaves.

Var. γ, *flore-pleno*; flowers double. Sweet, cist. t. 64.

Common Sun-Rose. Fl. May, September. Britain. Shrub trailing.

104 H. SURREJA'NUM (Mill. dict. no. 15.) stem suffruticose, procumbent; leaves ovate-oblong, rather pilose; racemes many-flowered, terminal; petals narrow lanceolate, jagged. ♄. H. Native of England in the county of Surrey, near Croydon. Sweet, cist. t. 28. Cístus Surrejànus, Lin. spec. 743. Smith, engl. bot. 2207.—Dill. elth. 177. t. 145. f. 174. Stipulas linear-lanceolate, length of petioles. Calyxes pilose. Petals distinct.

Surrey Sun-Rose. Fl. July, Oct. England. Shrub ¾ foot.

105 H. OVA'TUM (Dunal. ined. and D. C. prod. 1. p. 280.) stem suffruticose, procumbent, much branched; branches villous, leaves elliptic-lanceolate, tapering into the footstalks, bluntish, silky-villous on both surfaces, ciliated; stipulas somewhat longer than the footstalks of the leaves villously-ciliated; peduncles 1-3-flowered, terminal; calyxes rather villous. ♄. H. Native on the mountains between Viterbo and Ronciglione, and in the Alps about Genoa. Cístus ovàtus, Viv. frag. 1. p. 6. t. 8. f. 2. Hairs white, silky.

Ovate-leaved Sun-Rose. Fl. June, Aug. Clt. 1818. Shrub procumbent.

106 H. GRANDIFLÒRUM (D. C. fl. fr. 4. p. 821.) stem suffruticose, ascendant; branches hairy; upper leaves flattish, oblong, rather pilose, upper surface green, under surface sometimes pale-cinereous; stipulas ciliated, rather longer than the footstalks of the leaves; flowers large; calyxes rather hairy. ♄. H. Native of the Pyrenees. Sweet, cist. t. 69. Cístus grandiflòrus, Scop. carn. ed. 2. no. 648. t. 25. Differing from *H. vulgàre*, in being larger in all its parts. Peduncles and calyxes covered with spreading hairs. Flowers cream-coloured Petals imbricate.

Large-flowered Sun-Rose. Fl. June, Aug. Clt. 1800. Sh. ¾ ft.

107 H. OBSCU'RUM (Pers. ench. 2. p. 79.) stem suffruticose, ascendant, much branched; branches hairy; leaves elliptical, hairy on both surfaces, greenish, upper ones elliptic; stipulas ciliated, longer than the footstalks; racemes long; calyxes hairy. ♄. H. Native of Europe in woods. H. obscùrum α, D. C. fl. fr. 6. p. 624. The lower leaves are roundish and ovate, as well as in the preceding and following species.

Obscure Sun-Rose. Fl. May, Aug. Clt. 1816. Shrub ascendant ½ to 1 foot.

108 H. TAU'RICUM (Fisch. mss. Sweet, cist. t. 105.) stem suffruticose, much branched, procumbent, branches procumbent, beset with long hairs; leaves oblong-lanceolate, with rather revolute margins, pilose on both surfaces, green above and paler beneath; stipulas lanceolate-linear, ciliated, longer than the petiole; flowers large; calyx shining, rather hairy; petals imbricate. ♄. H. Native of Tauria. Petals pale-yellow.

Taurian Sun-Rose. Fl. May, Oct. Clt. 1820. Shrub procumbent.

109 H. LU'CIDUM (Horn. cat. hort. hafn. 498.) stem suffruticose, procumbent; leaves stipulate, ovate, green, glossy, with revolute margins. ♄. H. Native of? Flowers yellow.

Shining-leaved Sun-Rose. Fl. May, June. Clt. 1826. Shrub procumbent.

110 H. NUMMULA'RIUM (Mill. dict. no. 11.) stem suffruticose; branches procumbent, hairy; lower leaves orbicular, upper ones oblong-linear, hairy, under surface greenish-cinereous; stipulas linear-oblong, twice the length of the footstalks of the leaves; racemes and calyxes hairy. ♄. H. Native of the south of France and in Italy. Sweet, cist. t. 80. Cistus nummulàrius α, Lin. spec. 743. not of Desf. and Cav. H. obscùrum β, nummulàrium, D. C. fl. fr. 6. p. 624. H. angustifòlium of many botanic gardens. Petals slightly imbricate.

Money-wort-leaved Sun-Rose. Fl. June, Aug. Clt. 1752. Shrub procumbent.

111 H. ANGUSTIFÒLIUM (Pers. ench. 2. p. 79.) stem suffruticose, diffuse; branches rather tomentose, cinereous; leaves on short footstalks, upper ones linear-oblong, with revolute margins, acutish, under surface clothed with canescent tomentum, upper surface rather hispid; stipulas pilose, longer than the footstalks; racemes loose; calyxes pubescent, rather hairy; hairs deciduous. ♄. H. Native of —? Probably the same as the preceding species. Cistus angustifòlius, Jacq. vind. 3. t. 53. Petals narrow at the base, rather unguiculate, distinct from each other.

Narrow-leaved Sun-Rose. Fl. Ju. Aug. Clt. 1800. Shrub 1 ft.

112 H. OBTUSIFÒLIUM (Dunal. ined. and D. C. prod. 1. p. 281.) stem suffruticose, branched; branches tomentose, hoary; leaves small, stalked, linear-oblong, obtuse, with revolute margins, under surface hoary-tomentose, upper surface green and beset with long scattered white hairs; stipulas green, oblong-linear, flat, obtuse, scarcely ciliated, length of footstalks; calyxes hispid. ♄. H. Native of the island of Cyprus. Cistus ciliàtus, Cas. Rostung in litt. not of Desf. Petals yellow.

Blunt-leaved Sun-Rose. Fl. June, Aug. Shrub 1 foot.

113 H. HI'RTUM (Pers. ench. 2. p. 79.) stem suffruticose, branched; branches ascendant, numerous, tomentosely-hairy, cinereous; leaves ovate or oblong, with revolute margins, under surface canescent, upper surface greenish-cinereous; stipulas narrow, rather longer than the footstalks of the leaves; calyxes densely covered with white hairs; petals obcordate, imbricate. ♄. F. Native of Spain and south of France. Sweet, cist. t. 109. Cistus hírtus, Lin. spec. 744. Smith, fl græc. t. 501. exclusive of synonym of Barrelleir, Cav. icon. 2. p. 37. t. 146. Calyxes small. Flowers large, deep yellow.

Var. α, Bæ'ticum (D. C. prod. 1. p. 281.) leaves ovate-oblong, upper surface green. H. Bæ'ticum, Hort. madr.

Var. β, aúreum (D. C. prod. l. c.) leaves linear-oblong, with revolute margins, canescent on both surfaces. H. aùreum, Thib. ined. Pers. ench. 2. p. 78.

Var. γ, teretifòlium (D. C. prod. l. c.) branches hoary-tomentose; leaves revolute on the under surface, almost terete, thickish, obtuse, hoary. Cistus aúreum β teretifòlium, Pers. ench. 2. p. 78.

Hairy Sun-Rose. Fl. Ju. July. Clt. 1759. Shrub 1 foot.

114 H. LAGA'SCÆ (Dunal, ined. and D. C. prod. 1. p. 281.) branches ascendant, tomentosely-hairy, hoary; leaves linear, obtuse, with very revolute margins, almost terete, rather hairy, greenish; stipulas flat, scarcely pilose, twice the length of the footstalks of the leaves; pedicels hispid, whitish; calyxes shining, furrowed; nerves ciliated with white hairs. ♄. F. Native of Spain. H. hírtum var.? Lag. in litt. Calyxes small. Leaves short.

Lagasca's Sun-Rose. Fl. Ju. Aug. Clt. 1826. Sh. ½ to 1 ft.

* * *Petals white, rose-coloured, red, pale-sulphur coloured, or variegated with these colours.*

115 H. VIOLA'CEUM (Pers. ench. 2. p. 78.) stem erect or ascendant, much branched; branches opposite; branchlets slender, tomentosely-hairy, hoary; leaves small, almost linear, obtuse, with revolute margins, somewhat tomentose on both surfaces, under surface canescent; stipulas minute, pilose, racemes few-flowered, loose; calyxes smooth, violaceous, nervedly furrowed. ♄. F. Native of Spain. Cistus violàceus, Cav. icon. 2. p. 38. t. 147. Petals white.

Violaceous-calyxed Sun-Rose. Fl. Ju. July. Clt. 1826. Shrub ½ to 1 foot.

116 H. RACEMÒSUM (Dunal, ined. and D. C. prod. 1. p. 281.) stem shrubby, branched; branches erect, terete, hoary-tomentose; leaves on short footstalks, narrow-linear or linear-lanceolate, with revolute margins, under surface hoary, upper surface greenish, shining; stipulas awl-shaped, longer than the footstalks of the leaves; pedicels hoary; calyxes nervosely-furrowed, brownish-violet. ♄. F. Native of Spain, Barbary, Teneriffe. Sweet, cist. t. 82. Cistus racemòsus, Lin. mant. 76? Lam. dict. 2. p. 25. Vahl. symb. 1. p. 39. Willd. spec. 2. p. 1208. exclusive of synonyms of Cav. and Barrel. Petals white, yellow at the base, imbricate.

Racemose-flowered Sun-Rose. Fl. June, July. Shrub 1 foot.

117 H. FARINÒSUM (Sweet, cist. p. 18.) stem shrubby, erect, branched, tomentosely-hoary; leaves on short footstalks, linear or lanceolate-linear, with revolute margins, hoary, and powdered on both surfaces; stipulas awl-shaped, longer than the footstalks of the leaves; calyx powdery, as well as beset with very short hairs. ♄. F. Native of Spain. H. racemòsum β, farinòsum, D. C. prod. 1. p. 281. Flowers white.

Mealy Sun-Rose. Fl. June, July. Clt.? Shrub 1 foot.

118 H. STRI'CTUM (Pers. ench. 2. p. 79.) stem suffruticose, erect, branched; branches straight, hoary-tomentose; leaves almost sessile, very narrow, linear-awl-shaped, with revolute margins, canescent; stipulas linear, setaceous; calyxes pilose, nervously-striated, yellowish, smoothish. ♄. F. Native of Spain. Cistus stríctus, Cav. icon. 3. p. 32. t. 263. f. 2. Petals white.

Straight-branched Sun-Rose. Fl. June, July. Clt. 1820. Shrub ½ to 1 foot.

119 H. PILÒSUM (Pers. ench. 2. p. 79.) stem suffruticose, branched; branches erectish; leaves linear or linear-oblong, hoary on both surfaces, and bristly at the apex; stipulas awl-shaped; calyxes rather pilose, nervously-striated. ♄. F. Native of Spain and the south of France. Sweet, cist. t. 49. Cistus pilòsus, Lin. spec. 744. α.? Chamæcistus 4. Clus. hist. 1. p. 74. Petals white.

Var. α; leaves linear, hoary; calyxes pilose, somewhat glaucous.

Var. β; leaves linear-oblong; calyxes shining, smoothish, acutish, with hairy nerves.

Pilose Sun-Rose. Fl. May, July. Clt. 1731. Shrub 1½ foot.

120 H. LINEA'RE (Pers. ench. 2. p. 78.) stem suffruticose; branches elongated, ascendant, rather hoary, tomentose; leaves linear, greenish-hoary, with revolute margins; stipulas linear-awl-shaped; racemes loose, twiggy, few-flowered; calyxes striated, glabrous, with the nerves somewhat violaceous; sepals acute. ♄. F. Native of Spain and the south of France. Sweet, cist. 48. Cistus lineàris, Cav. icon. 3. p. 8. t. 216.

Cístus pilòsus, D. C. fl. fr. 5. p. 823? Calyx larger than in the preceding species. Petals white.

Var. β; angles or nerves of calyx pilose.

Linear-leaved Sun-Rose. Fl. Ju. Aug. Clt. 1818. Sh. 1 ft.

121 H. VIRGA'TUM (Pers. ench. p. 79.) stem suffruticose, with twiggy, hoary, ascending or erect branches; leaves linear, hoary on the under surface, with revolute margins; stipulas linear-awl-shaped; calyxes hoary, powdery, pubescent. ♄. H.

Var. α, *albiflòrum* (D. C. prod. 1. p. 282.) leaves green on the upper surface; petals white. ♄. H. Native of Barbary. Cístus virgàtus, Desf. atl. 1. p. 432.

Var. β, *ròseum* (D. C. prod. 1. c.) leaves canescent on both surfaces; petals rose-coloured, imbricate. ♄. H. Native of? Sweet, cist. t. 79.

Twiggy Sun-Rose. Fl. May, Jul. Clt. 1818. Sh. ¾ foot.

122 H. APENNI'NUM (D. C. fl. fr. 4. p. 824.) stem suffruticose, branched; branches spreading, hoary-tomentose; leaves stalked, oblong-linear, with the margins scarcely revolute, under surface tomentose, upper surface glaucescent, but at length becoming smooth; stipulas awl-shaped, longer than the footstalks of the leaves; calyxes covered with very short villi, striated, cinereously-glaucous, bluntish. ♄. H. Native of Spain, France, Italy, and Germany on dry hills in places exposed to the sun. Sweet, cist. t. 62. Cístus Apennìnus, Lin. spec. 744.? Dill. elth. 170. Cístus híspidus β, Lam. dict. 2. p. 26. Petals white, distinct.

Var. α, leaves flattish.

Var. β; leaves linear, narrow. Cístus pilòsus. Thib. herb. Gouan. fl. monsp. p. 265?

Apennine Sun-Rose. Fl. May, Jul. Clt. 1731. Sh. ½ foot.

123 H. HI'SPIDUM (Dunal, ined. and D. C. prod. 1. p. 282.) stem suffruticose, branched; branches ascending, hoary-tomentose; leaves stalked, oblong, bluntish, somewhat mucronate, with revolute margins, under surface hoary, upper surface roughish, greenish-glaucous; calyxes covered with long hairs. ♄. H. Native of the south of France. Cístus híspidus, Lam. 2. p. 26. Brot. fl. lus. 2. p. 271. Cístus pilòsus β, Gouan. fl. monsp. p. 265. H. marjoranæfòlium β. D. C. fl. fr. suppl. p. 625. Petals white, imbricate.

Hispid Sun-Rose. Fl. May, July. Clt. 1816. Sh. ½ to 1 ft.

124 H. PULVERULE'NTUM (D. C. fl. fr. 4. p. 823.) stem suffruticose, much branched, prostrate; branches hoary-tomentose; leaves oblong-linear, with revolute margins, obtuse, under surface hoary, upper surface glaucous; stipulas subulate, ciliated, longer than the footstalks of the leaves; calyxes hoary, minutely tomentose-pubescent. ♄. H. Native of France on sterile hills. Sweet, cist. t. 29. Cístus pulveruléntus, Pour. act. toul. 3. p. 311. Cístus polifòlius, Lam. dict. 2. p. 26. but not of Lin. Petals white.

Powdered-leaved Sun-Rose. Fl. May, June. Clt.? Shrub prostrate.

125 H. MACRA'NTHUM (Sweet, cist. t. 103.) stem suffruticose; branches procumbent, rather tomentose; leaves flat, ovate-oblong, acutish, smooth above and densely tomentose beneath, pale, cinereous; stipulas rather pilose, about equal or longer than the petioles; calyx striated, pilose; petals distinct. ♄. H. Native of? Flowers whitish, but yellow at the base.

Var. β, *múltiplex* (Sweet, cist. t. 104.) lower leaves roundish; flowers double, whitish, but yellow towards the base of the petals.

Large-flowered Sun-Rose. Fl. May, Sept. Clt.? Shrub procumbent.

126 H. RHODA'NTHUM (Dunal, ined. and D. C. prod. 1. p. 282.) stem suffruticose, procumbent; branches rather tomentose, and hoary; leaves oblong, with revolute margins, under surface hoary-tomentose, upper surface greenish-glaucous; stipulas awl-shaped, pilose and bristly at the top; calyxes covered with short, white tomentum. ♄. H. Native of Spain. Sweet, cist. t. 7. Cístus ròseus, Jacq. hort. vind. 3. p. 65? Cístus angustifòlius, formerly in hort. reg. paris. Cístus pilulíferus. Thib. ined. Very like *H. pulveruléntum*, but the flowers are rose-coloured. Petals imbricate.

Var. α, *oblongifòlium* (D. C. prod. 1. p. 283.) branches clothed with canescent tomentum; leaves oblong; flowers rose or red-coloured.

Var. β, *subhirsùtum* (D. C. prod. l. c.) branches clothed with canescent tomentum; leaves and calyxes rather hairy; flowers rose-coloured or red.

Var. γ, *cárneum* (Lag. in litt. D. C. prod. l. c.) branches almost glabrous; leaves almost linear; pedicels hoary-tomentose; flowers flesh-coloured. Probably a distinct species.

Red-flowered Sun-Rose. Fl. May, July. Clt. 1800. Shrub procumbent.

127 H. CANE'SCENS (Sweet, cist. t. 51.) stem suffruticose, branched, diffuse; branches ascending, rather tomentose, canescent; leaves flat or hardly revolute at the margins, under surface tomentosely-hoary, upper surface greenish-glaucous; lower leaves ovate-oblong, obtuse, upper ones lanceolate, acute; stipulas linear, ciliated, somewhat longer than the footstalks; calyxes smoothish, but with the nerves pubescent; petals imbricated. ♄. H. Native? Petals reddish-crimson, with a small orange spot at the base of each.

Canescent-leaved Sun-Rose. Fl. May, Aug. Clt.? Shrub procumbent.

128 H. CONFU'SUM (Sweet, cist. t. 91.) stem suffruticose; branches procumbent, smoothish, rather tomentose at the apex; leaves oblong, ovate, bluntish, rather flat, under surface tomentose, hoary, upper surface glabrous, green; stipulas and bracteas linear, green, ciliated; calyxes striated, smoothish, rather shining; petals slightly imbricate. ♄. H. Native of France and Spain. H. polifòlium, D. C. prod. 1. p. 283. Petals white, yellow at the base.

Confused Sun-Rose. Fl. May, July. Clt.? Shrub procumbent.

129 H. LANCEOLA'TUM (Sweet, cist. t. 100.) stem suffruticose, much branched, procumbent; branches ascending, smoothish, hoary-tomentose at the apex; leaves lanceolate, acute, with somewhat revolute margins, green and smoothish above, but hoary-tomentose beneath: stipulas awl-shaped, linear, longer than the footstalks of the leaves; sepals smoothish or rather pilose; petals imbricate. ♄. H. Native of? Petals white, marked with yellow at the base. Stamens yellow.

Lanceolate-leaved Sun-Rose. Fl. May, August. Clt. 1818. Shrub procumbent.

130 H. POLIFÒLIUM (Pers. ench. 2. p. 80.) stem suffruticose, branched; branches procumbent, densely tomentose, leaves oblong-linear, with revolute margins, hoary-tomentose on both surfaces; stipulas narrow, linear, obtuse, longer than the petioles, and are as well as bracteas tomentose and ciliated; petals distinct, crenulated. ♄. H. Native of England on stony hills near the sea-side, particularly on Brent Downs, Somersetshire, also at Babbicome near Newton Abbot, and Tor Hill, near Torquay, Devonshire. Cístus polifòlius. Lin. spec. 745. Smith, engl. bot. 1322.—Dill. elth. 175. t. 145. f. 172. Flowers white, marked with yellow at the base.

Polium-leaved Sun-Rose. Fl. May, Aug. England. Shrub procumbent.

131 H. MUTA'BILE (Pers. ench. 2. p. 79.) stem suffruticose; branches procumbent, rather tomentose; leaves flat, ovate-oblong; acutish, upper surface glabrous, under surface tomentose, pale-cinereous; stipulas rather pilose, generally equal in length with the footstalks of the leaves or longer; calyxes striated, smoothish; petals imbricate. ♄. H. Native of Spain. Sweet, cist. 106. Cístus mutábilis, Jacq. icon. rar. 1. t. 99. Misc. 2. p. 340. Very nearly allied to *H. polifòlium*.

Var. α; flowers white.

Var. β; flowers smaller, rose-red. Sweet, cist. t. 106.

Var. γ; flowers double, rose or red-coloured.

Changeable-flowered Sun-Rose. Fl. June, Aug. Clt. ? Shrub procumbent.

132 H. VARIEGA'TUM (Sweet, cist. t. 38.) stem suffruticose, procumbent; branches tomentose, rather hoary, diffusely-procumbent; leaves lanceolate, acute, flattish, under surface hoary-tomentose, upper surface green, rather scabrous; stipulas linear, ciliated, longer than the petioles; calyxes covered with short violaceous tomentum; petals imbricate, undulated. ♄. H. Native? Perhaps a hybrid. Petals variegated with white and red.

Variegated-flowered Sun-Rose. Fl. May, Oct. Clt. ? Shrub procumbent.

133 H. VERSI'COLOR (Sweet, cist. t. 26.) stem shrubby, erect; branches ascending, rather hoary from stellate down; leaves oblong, flat, or concave above, under surface hoary-tomentose, upper surface green, glabrous; stipulas oblong-linear, ciliated, bristly at the top, somewhat longer than the leaves; calyxes covered with short tomentum; petals imbricate. ♄. F. Native of the south of Europe.—Barrel. icon. 440. Petals changing from a copper to a flesh-colour.

Party-coloured flowered Sun-Rose. Fl. June, Aug. Clt.? Shrub 1 to 1½ foot.

134 H. SULPHU'REUM (Willd. enum. suppl. 39.) stems branched, procumbent; leaves lanceolate, flat, upper surface green, under surface paler, but beset with stellate pubescence on both surfaces: racemes terminal, few-flowered. ♄. H. Native of Spain. Sweet, cist. t. 37. Petals distinct, sulphur-coloured.

Sulphur-coloured-flowered Sun-Rose. Fl. June, July. Clt. 1795. Shrub procumbent.

135 H. STRAMÍNEUM (Sweet, cist. t. 93.) stems branched, elongated, procumbent, tomentosely-pubescent at the apex; leaves flat, or with the margins scarcely revolute, green above and pilose, hoary-tomentose beneath, lower ones roundish-ovate, obtuse, upper ones oblong-lanceolate, acutish; stipulas lanceolate, acute, ciliated, twice the length of the petioles; racemes many-flowered; calyx striated, smoothish; petals obovate, spreading, distinct. ♄. H. Native? Petals straw-coloured, with orange filaments.

Var. β, múltiplex (Sweet, cist. t. 94.) stems ascending at the top; leaves smaller; flowers double, straw-coloured, orange-coloured at the base of the petals.

Straw-coloured-flowered Sun-Rose. Fl. May, Aug. Shrub procumbent.

136 H. DIVERSIFÒLIUM (Sweet, cist. t. 95.) stem suffruticose, ascending, branched; branches rather tomentose, erectly ascending; leaves stalked, green and hairy above, hoary-tomentose beneath, lower ones oval or oblong, obtuse, flat, upper ones linear-lanceolate, ciliated, 3-4-times longer than the petiole; sepals pilose; petals crenulated, distinct. ♄. H. Native of? Petals dark flesh-coloured, with a copper-coloured mark near the base.

Var. β, múltiplex (Sweet, cist. t. 98.) flowers larger, double, and of a deeper purplish-red, intermixed with lighter coloured ones.

Diverse-leaved Sun-Rose. Fl. May, Aug, Clt. ? Shrub.

137 H. ERIOSE'PALON (Sweet, cist. t. 76.) stems branched, procumbent, rather tomentose, hoary at the apex; leaves lanceolate, acute, with somewhat revolute margins, green on both surfaces and beset with starry hairs; stipulas linear, acute, ciliated, twice as long as the footstalks of the leaves; racemes terminal, many-flowered; calyxes clothed with woolly hairs; petals obovate, crenulated, distinct at the base. ♄. H. Native? Petals of a pale sulphur-colour, with a yellow mark at the base of each.

Woolly-sepalled Sun-Rose. Fl. Ju. Aug. Clt.? Shrub procumbent.

138 H. RO'SEUM (D. C. fl. fr. 4. p. 822.) stem suffruticose, rather procumbent, somewhat tomentose; leaves ovate-lanceolate, tomentose on the under surface, green above, hairy; stipulas lanceolate-linear, ciliated; pedicels and calyxes pilosely-hairy. ♄. H. Native of the south of Europe. Sweet, cist. t. 55. Cístus ròseus, All. ped. 2. p. 105. t. 45. f. 4, but not of Jacq. Very near to *H. vulgàre*. Petals imbricate at the base.

Var. β, múltiplex (Sweet, cist. t. 86.) flower semi-double, pale rose-coloured. Leaves broader and blunter.

Rose-coloured-flowered Sun-Rose. Fl. Jun. July. Clt. 1815. Shrub trailing, ½ foot.

139 H. FŒ'TIDUM (Pers. ench. 2. p. 79.) stem suffruticose, procumbent, pilosely-hairy; leaves oblong, green on both surfaces, hairy, roughish; stipulas hairy, linear, longer than the footstalks of the leaves; pedicels and calyxes rather hairy. ♄. H. Native of —? Cístus fœ'tidus, Jacq. icon. rar. 1. p. 98. misc. 2. p. 341. Plant with the smell of *Bryònia*. Petals like those of *H. vulgàre*, but white.

Fetid Sun-Rose. Fl. May, Jul. Clt. 1800. Shrub procumbent.

140 H. CILIA'TUM (Pers. ench. 2. p. 79.) stem suffruticose, decumbent; branches hoary-tomentose; leaves ovate-lanceolate or lanceolate-oblong, with the margins scarcely revolute, under surface hoary-tomentose, upper surface hairy; stipulas greenish, longer than the footstalks of the leaves; calyxes membranous; inner sepals nervosely-furrowed: nerves elevated, covered with glandular hairs. ♄. F. Native of Spain, North of Africa, as well as Italy. Cístus ciliàtus, Desf. atl. 1. p. 421. t. 109. Petals rose-coloured.

Ciliated-leaved Sun-Rose. Fl. May, July. Shrub decumbent, ½ foot.

141 H. HYSSOPIFÒLIUM (Tenor. syn. fl. neap. p. 48.) stem suffruticose, ascending; branches hairy-tomentose; lower leaves oval, upper ones oblong-lanceolate, green on both surfaces, flat, hairy; calyxes hairy; petals imbricate. ♄. H. Native of Naples in Abruzzo.

Var. α, crocàtum (Sweet, cist. t. 92.) flowers saffron-coloured, more or less with a ferruginous tint.

Var. β, cùpreum (Sweet, cist. t. 58.) flowers of a reddish copper-colour.

Var. γ, múltiplex (Sweet, cist. t. 72.) flowers double, of a reddish copper-colour.

Hyssop-leaved Sun-Rose. Fl. May, Aug. Shrub ¾ foot, procumbent at the base.

142 H. CU'PREUM (Sweet, cist. t. 66.) stem suffruticose, procumbent; branches ascending, rather tomentose, adult ones glabrous; leaves oblong-lanceolate, channelled, upper surface green, hairy; under surface hoary-tomentose; stipulas lanceolate, acute, ciliated, bristly at the apex, twice as long as the footstalks at the leaves; calyxes tomentosely-pilose; petals imbricated. ♄. H. Native of —? Petals dark copper-coloured, with a darker mark at the base of each.

Copper-coloured-flowered Sun-Rose. Fl. May, Aug. Clt.? Shrub procumbent.

143 H. VENU'STUM (Sweet, cist. t. 10.) stem suffruticose, ascending, branched; branches glabrous, warted, somewhat tomentose at the apex; leaves oblong-lanceolate, acute, flat, or hardly revolute on the margins, but denticulately-scabrous, under surface hoary-tomentose, upper surface green, shining; stipulas lanceolate, hairy, ciliated, twice as long as the footstalks of the leaves; inner sepals membranous, with hairy warted nerves; petals imbricated. ♄. H. Native of —? Petals crimson, inclining to orange.

Charming Sun-Rose. Fl. May, Aug. Clt.? Shrub 1 foot.

144 H. A'SPERUM (Lag. ined. and D. C. prod. 1. p. 283.) stem suffruticose, branched; branches long, ascending and erect,

somewhat tomentose, roughish, cinereous; leaves stalked, oblong, acuminated, with revolute margins, under surface hoary-tomentose, upper surface green and somewhat tomentose, roughish; stipulas awl-shaped, bristly at the apex; angles of calyx beset with long hairs. ♄. F. Native of Spain. Cístus hírtus, Thib. herb. Petals white.

Var. β, *Roussæ'i* (D. C. prod. 1. p. 283.) stem, leaves, and calyxes densely clothed with white hairs. ♄. F. Native of the Levant. Rousseau.

Rough Sun-Rose. Fl. Ju. Aug. Shrub 1 foot.

145 H. MILLE'RI (Sweet, cist. t. 101.) stem suffruticose, procumbent; branches hairy-tomentose; leaves oblong, bluntish, flat, green on both surfaces, hairy; stipulas falcate, longer than the petioles; calyxes hairy; petals imbricate. ♄. H. Native of — ? Flowers saffron-coloured, with a dark mark at the base of each petal.

Miller's Sun-Rose. Fl. May, Jul. Clt.? Shrub procumbent.

146 H. MARJORANÆFÒLIUM (D. C. fl. fr. 6. p. 625. var. *a*.) suffruticose, erect, much branched; branches hairy-tomentose; leaves stalked, ovate-oblong, acutish, with revolute margins, under surface hoary-tomentose, upper surface greenish-glaucous, tomentosely-hairy; stipulas awl-shaped, bristly; calyxes densely clothed with white hairs. ♄. H. Native of the south of France. Cístus marjoranæfòlius, Gouan. herb. p. 26.?

Marjoram-leaved Sun-Rose. Fl. May, Ju. Clt. 1818. Sh. ½ ft.

147 H. HIRSU'TUM (D. C. prod. 1. p. 284.) suffruticose, stipulate, hairy; leaves stalked, under surface hoary; lower leaves rounded, upper ones lanceolate, acute; flowers secund in terminal racemes. ♄. H. Native on rocks on the Eastern Pyrenees. Cístus hirsùtus, Lapeyr. abr. 303, but not of Lam. Flowers large, white.

Hairy Sun-Rose. Fl.? Shrub ¾ foot.

† *Species not sufficiently known.*

148 H. FU'GAX (D. C. prod. 1. p. 284.) stem herbaceous; leaves rather ovate, pilose; flowers fugacious. ♂. H. Native on Mount Baldo. H. fugàcium, Mill. dict. no. 19. Perhaps the same as *H. guttàtum*?

Fugacious-flowered Sun-Rose. Fl. Ju. Jul. Clt.? Pl. ½ foot.

149 H. CISTIFÒLIUM (Mill. dict. no. 9.) stems procumbent, suffruticose, glabrous; leaves ovate-lanceolate, opposite, longer than the peduncles. ♄. H. Native of Germany. Flowers yellow.

Cistus-leaved Sun-Rose. Fl. Ju. Aug. Clt.? Shrub procumbent.

150 H. OLIGOPHY'LLUM (Clark, in Spreng. new entd. 3. p. 163, under the name of *Cistus*,) shrubby, stipulate; leaves stalked, ovate-lanceolate, without nerves, very entire, scabrous, with revolute margins; peduncles 1-flowered. ♄. F. Native near Jaffa. Petals yellow.

Few-leaved Sun-Rose. Shrub.

151 H.? FASCICULA'TUM (Mill. dict. no. 22.) leaves narrow, in facicles; pedicels elongated, lateral and terminal. ♂. G. Native of the Cape of Good Hope. Flowers very fugacious, pale straw-coloured.

Fascicular-leaved Sun-Rose. Plant.

Cult. The hardy shrubby kinds of this genus are amongst the most beautiful little shrubs for ornamenting rock-work. The frame and green-house kinds should be planted in pots in a mixture of sand, loam, and peat, so that they may be protected during winter by a frame; the smaller kinds of these may be planted out on rock-work during the summer months. Ripened cuttings will strike root freely, if planted under a common hand-glass in a sheltered situation, in August or September; or they may be raised by seeds, which ripen in abundance. The perennial and biennial herbaceous kinds should be grown in pots, (so that they may be protected by a frame during winter), in a mixture of sand, loam, and peat; they are easily increased by seeds. The annual kinds are all beautiful plants, and the seed requires to be sown in the open border: they prefer a light rich soil. All the species of *Heliánthemum* deserve to be cultivated in every collection on account of the elegance and various hues of their blossoms.

III. HUDSO'NIA (in honour of William Hudson, a London apothecary, and author of Flóra Anglica, 1762 and 1778, 8vo.) Lin. mant. 11. Nutt. gen. amer. 2. p. 4. D. C. prod. 1. p. 284.

LIN. SYST. *Polyándria, Monogýnia.* Petals 5 (f. 61. *a. b.*). Stamens 15-30; filaments filiform; anthers small, longitudinally dehiscent. Style straight, simple (f. 61. *e.*), equalling the stamens in length. Stigma simple. Capsule 1-celled, 3-valved, 1-3-seeded, oblong or obovate, coriaceous, smooth or pubescent. Seeds granulated. Embryo immersed in a horny albumen. Small tufted heath-like sub-shrubs. Leaves alternate, small, awl-shaped or needle-shaped, imbricated, without stipulas. Flowers yellow, almost sessile or on short peduncles; peduncles 1-flowered, terminal, or lateral, solitary, or aggregate.

1 H. ERICOI'DES (Lin. mant. 74.) pubescent; stems suffruticose, erect; branches elongated; leaves filiform, awl-shaped, rather imbricated; peduncles solitary, rising laterally from the leafy bud; calyx cylindrical, obtuse; capsules pubescent, always 1-seeded; valves oblong. ♄. F. Native of New Jersey and Virginia in pine woods. Willd. hort. berl. t. 15. Sweet, cist. t. 36. Leaves permanent. Stamens about 15. Peduncles 5 or 8 lines long. According to Nuttal, this plant, which is a native of New Jersey, has aggregate instead of solitary peduncles; therefore his plant may be a distinct species. Flowers yellow (f. 61.).

FIG. 61.

Heath-like Hudsonia. Fl. May, July. Clt. 1805. Shrub 1 ft.

2 H. NUTTA'LLII (Sweet, cist. p. 19.) equally pubescent; stem erect, much branched; leaves about 2-lines long, filiform, rather imbricate, but distinct from the stem; pedicels lateral, crowded, when in fruit from 5 to 8 lines long; calyx cylindrical, obtuse, pubescent, with the segments oblique and convolute, the 2 smaller ones hardly visible when in fruit, but sufficiently distinct in the unexpanded flowers; capsules cylindrical-oblong, externally pubescent, always 1-seeded; valves oblong, the central suture obsolete. ♄. F. Abundant over the barren sandy woods of New Jersey, Delaware, Maryland, and Virginia (Nutt.) H. ericoìdes, Nutt. gen. amer. 2. p. 4. Whether this plant is identical with the *H. ericoìdes* of Lin. it is impossible to say.

Nuttall's Hudsonia. Fl. May, June. Shrub 1 foot.

3 H. MONTA'NA (Nutt. gen. 2. p. 5.) almost smooth; stems tufted, decumbent; leaves long, awl-shaped, filiform, rather imbricated; peduncles terminal, solitary; calyxes campanulate, woolly; segments taper-pointed, subulate; capsules villous, usually 3-seeded; valves ovate. ♄. F. Native of North Carolina on the summits of mountains. Stamens 25-30. Seeds rather angular. Flowers yellow. Leaves longer, and capsules larger than in the rest of the species.

Mountain Hudsonia. Fl. May, July. Shrub decumbent.

4 H. tomentòsa (Nutt. gen. 2. p. 5.) tufted and hoary-tomentose; stems intricate, dense; leaves minute, densely imbricated, ovate, acute; flowers aggregate, almost sessile; calyxes rather cylindrical, with obtuse partitions; capsules 1-seeded; valves ovate, smooth. ♄. F. Native of New Jersey, Delaware, and Maryland, &c. in the sea-sand. Sweet, cist. t. 57. Stamens 14-18. Flowers yellow.

Tomentose Hudsonia. Fl. May, July. Clt. 1826. Shrub 1 foot.

5 H. austra'lis (Spreng. syst. 2. p. 452.) smoothish, erect; leaves linear-lanceolate, clothed beneath with scattered spreading hairs; flowers terminal, solitary, stalked; calyx taper-pointed, rather hairy. ♄. G. Native of Monte Video.

Southern Hudsonia. Shrub 1 foot.

Cult. Hudsònia is a genus of pretty little shrubs, with the appearance of heath, which are rather difficult to cultivate: they thrive best in peat soil, in a shady situation, and should be protected under glass during winter, for this purpose they had better be grown in pots. They may be either increased by layers, or ripened cuttings planted in sand under a hand-glass.

IV. LE'CHEA (in honour of G. Leche, a Swede, professor of natural history at Abo, and author of observations on rare plants; died 1764.) Lin. gen. no. 142. Gært. fruct. 2. t. 129. D. C. prod. 1. p. 285.

Lin. syst. *Tri-Dodecándria, Monogýnia.* Calyx 3-sepalled, guarded by bracteas or the 2-outer sepals. Petals 3, lanceolate. Stamens 3-12, usually disposed in a ternary number. Ovary 1, somewhat 3-sided. Stigmas 3, scarcely distinct. Capsules 3-valved; valves bearing a dissepiment or nerve in the middle of each. Seeds very few, usually 8, fixed to the dissepiment or nerve. Albumen fleshy. Embryo straightish, dorsal with an inferior radicle. Cotyledons ovate-oblong. Inconspicuous North American herbs, with numerous small white or yellow flowers; lower branches usually differing from the floriferous ones, they are like those of *Thymus serpýllum.*

1 L. villòsa (Ell. sketch. 184.) hairy; leaves oblong-lanceolate, mucronate; panicle leafy, pyramidal; branches bearing flowers at the top; flowers disposed in fascicled-racemes, secund, on very short pedicels. ♃. H. Native from Canada to Florida in gravelly woods. L. màjor, Pursh, fl. amer. sept. 1. p. 90. but not of Lin. L. mìnor, Lin. from Smith.—Lam. ill. t. 52. f. 2. from Pursh. Flowers white or yellow.

Var. β, mucronàta (Raf. prec. 37.) pilose; stem straight, simple; racemes compound; flowers bracteolate. ♃. H. Native of New Jersey in woods.

Villous Lechea. Fl. July, Aug. Clt. 1780. Plant 2 feet.

2 L. mi'nor (Pursh, fl. amer. sept. 1. p. 91.) smoothish; leaves linear-lanceolate, acute; panicle leafy; branches elongated, bearing flowers on all sides; flowers on very short pedicels; stems assurgent. ♃. H. Native from Canada to Pennsylvania on dry gravelly hills.—Lam. ill. t. 52. f. 1. from Pursh. Flowers white or yellow. This plant is lower in growth and larger in fruit than the preceding.

Smaller Lechea. Fl. July, Aug. Clt. 1802. Plant ½ foot.

3 L. racemulòsa (Mich. fl. bor. amer. 1. p. 77.) covered with appressed pubescence; leaves linear, acute, ciliated; panicle slender, much branched, pyramidal; racemes nakedish; flowers small, alternate, pedicellate; stem erect. ♃. H. Native of sandy fields from New Jersey to Carolina. Pursh. fl. amer. sept. 1. p. 91. suppl. 3. p. 340.—Guara, Lam. ill. t. 281. f. 3. Flowers white or yellow.

Racemulose Lechea. Fl. July, Aug. Clt.? Pl. ¾ foot.

4 H. thymifòlia (Mich. fl. bor. amer. 1. p. 77.) covered with appressed white villi; leaves linear, acute; panicle leafy, elongated, with short branches; flowers disposed in lateral and terminal fascicles; pedicels very short; flowers small, hoary-tomentose; stem erect. ♃. H. Native of dry barren woods on slate hills, from Virginia to Carolina. Lower branches creeping, very like those of *Thymus serpýllum,* which is the case with most of the species of this genus. Pursh. fl. amer. sept. 1. p. 91. L. mìnor, Walt. car. 83. from Ell. sketch. p. 185. Flowers white or yellow.

Thyme-leaved Lechea. Fl. July, Aug. Clt. 1823. Pl. ½ ft.

5 L. tenuifòlia (Mich. fl. bor. amer. 1. p. 77.) sparingly pilose; leaves very narrow; panicle divaricate, nakedish; branchlets alternate; pedicels elongated, spreading; stem erect. ♃. H. Native of dry gravelly hills from Virginia to Georgia. L. juncifòlia, Walt. car. 83? from Ell. sketch. 185. Lower branches furnished with linear leaves, by which it is easily distinguished from the rest. Pursh. fl. amer. sept. 1. p. 91. Flowers white or yellow.

Fine-leaved Lechea. Fl. May, July. Clt. 1823. Pl. ¾ foot.

6 L.? verticilla'ta (Willd. spec. 1. p. 495.) stem hispid; leaves oblong-ovate, serrulated; flowers in whorles. ♃. S. Native of the East Indies. Habit of *Spermacócce,* and most likely a species of the latter genus. Flowers white?

Whorled-flowered Lechea. Pl. ½ foot.

N. B. *Lèchea Chinénsis* of Lour. is a species of *Commelìna.*

Cult. Lèchea is a genus of small herbaceous perennial plants, which succeed best when grown in small pots planted in a mixture of light turfy loam and peat. They may be either increased by seeds or by cuttings planted in sand under a hand-glass.

Order XXI. VIOLARIE'Æ (plants agreeing with *Vìola* in many important characters.) D. C. fl. fran. 4. p. 801. Juss. ann. du mus. 18. p. 4. p. 476.

Calyx of 5 permanent sepals, equal (f. 65. *a.* f. 66. *c.*) or unequal, (f. 64. *c.* f. 62. *a.*) usually with membranous margins, free or connected at the base, imbricate in the bud; and therefore they are disposed in a double series, as in Tribe *Viòleæ,* 3 in the outer series, and 2 in the inner. Petals 5, alternating with the sepals (f. 65. *b.*) hypogynous, inserted in the thalamus, usually marcescent, and obliquely convolute in the bud, sometimes equal (f. 66. *b.* f. 65. *b.*) sometimes unequal (f. 62. *c.* f. 63. *c.*), but when they are unequal the lower one is in the form of a labellum (f. 64. *c.*), furnished with a spur or hollow at its base (f. 64. *b.* f. 63. *c.*). Sometimes there is a staminiferous urceolus and sometimes filiform appendages between the petals and the stamens. Stamens 5, inserted in the thalamus or calyx, alternating with the petals; anthers 2-celled (f. 65. *e.*) opening inwards by 2 longitudinal chinks; these are appressed to the ovary, usually free, but sometimes they are more or less connate at the base into a monadelphous disk; filaments usually dilated, sometimes from the base in this case, bearing the anthers at the very base (f. 64. *d.*), sometimes they are unguiculated at the base, but they are dilated at the top, and therefore bearing the anthers a little higher up at the tops of the claws (f. 66. *a.*), in either case the filaments are drawn out beyond the anthers into an arid membrane, more or less imbricately girding the style, rarely awl-shaped but never terminated by the anthers; two of which in the irregular flowers are usually drawn out downwards into a filiform ap-

pendage (f. 64. *e.*) or nectarial glands, which are drawn in within the spur or hollow (f. 63. *d.*). Ovary 1-celled, many-seeded (f. 62. *g.* f. 66. *d.*) or rarely 1-seeded from abortion. Placentas 3, parietal, one in the middle of each valve, opposite the 3 exterior petals. Style 1, permanent, usually declinate, perforated, and recurved at the top, and therefore the stigma is somewhat lateral (f. 64. *f.*). Capsule 3-valved (f. 62. *g.*), the valves generally opening from the apex to the base, usually with elasticity. The seeds have 3 coverings, the outer one is membranous, more or less thickened at the hilum into a caruncle; umbilical vessel united with the epidermis from the hilum to the vertex of the seed, forming a line which is hardly prominent, expanded into a wrinkled areola at the top. Testa crustaceous, brittle, usually smooth, but sometimes striated, rarely scrobiculate; inner membrane very thin, adhering, usually dotted with brown in the vertex. Albumen fleshy. Embryo straight in the axis of the albumen, with the radicle towards the base of the seed, not towards the hilum, with an inconspicuous plumule, and usually flat cotyledons. Herbs, sub-shrubs, or middle-sized shrubs, with alternate, rarely opposite leaves, simple, usually involute before expansion, all furnished with stipulas. Flowers erect or drooping, pedunculate, axillary; peduncles sometimes solitary or numerous, 1-flowered, and bibracteolate; sometimes branched, with the pedicels 1-flowered, and bibracteolate, rising singly from the axillæ of the bracteas.

This order comes very near *Polygàleæ*, *Droseràceæ* and *Passiflòreæ*, but differs from *Polygàleæ* in the fruit being 1-celled, not 2-celled, in the leaves being furnished with stipulas, not exstipulate, as well as in the anthers being 2-celled, not 1-celled. It differs from *Droseràceæ* in the style being solitary, not 3-6, and in the embryo being elongated, as well as in the leaves being involute before expansion, not circinal, and furnished with stipulas, not exstipulate. It differs from *Passiflòreæ* in the fruit being capsular, not baccate, and in the stamens being hypogynous, not perigynous, as well as in the anthers being adnate to the middle of the filaments, not fixed by the middle; stigmas 1, not 3. The genus *Hymenanthèra* agrees with *Polygàleæ* in the pericarp being 1-seeded; seed pendulous, or the pericarp, according to Mr. Brown, is 2-celled, and the cells 1-seeded. The genus *Calýptrion*, and some species of *Noiséttia*, agree with *Passiflòreæ* in having twining stems.

This is a very favourite order with gardeners, consisting, as it chiefly does, of violets; a great part of which are hardy, herbaceous plants. The tribe *Alsodíneæ* consists of tropical trees and shrubs of little beauty, with regular flowers. The roots of all the herbaceous and annual kinds act as emetics like the *Ipecacuanha*.

Synopsis of the Genera.

Tribe I.

Vio'leæ (*D. C. prod.* 1. *p.* 288.). *Petals 5, unequal* (f. 64. *c.*). *Sepals* 5 (f. 64. *a.*), *in two series, 3 in the outer and 2 in the inner, the last are narrower than the outer series. Pericarp 3-valved* (f. 64. *k.*), *dehiscent, with a placenta in the middle of each valve* (f. 62. *g.*). *Stamens alternating with the petals; filaments dilated, free, or rarely joined, drawn out beyond the anthers; therefore the anthers appear as if fixed to the middle of the filaments on the inner side; cells of anthers opening slowly into 2-valves.*

1 Caly'ptrion. Sepals nearly equal (f. 62. *a.*). Lower petal large, drawn out into a pouch at the base. Stamens free; appendages of 4? anterior anthers, long and filiform, bearded. Capsule trigonal, 1-3 or many-seeded (f. 62. *g.*). Climbing shrubs.

2 Noise'ttia Sepals unequal (f. 63. *e.*). Lower petal large (f. 63. *b.*), drawn out at the base into a long cylindrical tube (f. 63. *c.*). Stamens free; appendages of the 2 anterior anthers awl-shaped. Capsule obsoletely trigonal, many-seeded. Erect or climbing shrubs.

3 Schweigge'ria. Sepals unequal (f. 64. *a.*) 3 exterior ones hastately biauriculate at the base. Lower petal large, cordate (f. 64. *b.*), drawn out at the base into an unequal-sided spur (f. 64. *e.*). Stamens free, pressed to the ovary; appendages of 2 anterior anthers, awl-shaped] (f. 64. *e.*). Little trees.

4 Vìola. Calyx with unequal sepals, all drawn out at the base more or less into ear-like appendages. Lower petal drawn out at the base into a hollow spur. Stamens approximate, the 2 anterior anthers furnished with long awl-shaped appendages. Capsule trigonal; valves opening with elasticity. Usually herbs, rarely small shrubs.

5 Erpe'tion. In every respect the same as *Vìola*, but the sepals are hardly drawn out at the base, and the lower petal is not drawn out into a spur at the base; but furnished with a small gibbosity. Anthers without appendages. Creeping herbs.

6 So'lea. Calyx hardly equal. Lower petal large, with a gibbous base. Stamens approximate, with a nectarial gland on the outside of two of the filaments. A pilose, erect herb.

7 Pomba'lia. Sepals of calyx large, with prickly margins. Lower petal long, somewhat gibbous at the base. Stamens free; two of the filaments are furnished each with a nectarial gland at the base. Capsule as in *Vìola*. Erect, villous herbs.

8 Pígea. Sepals unequal. Lower petal very large, gibbous at the base. Stamens free, lobes of anthers ending in a bristle. Capsules trigonal. Herbs or sub-shrubs.

9 Ionídium. Sepals unequal. Lower petal large, rather gibbous or concave at the base. Stamens approximate, the 2 anterior filaments usually furnished each with a nectarial gland at the base. Capsule, as in *Vìola*, elastic. Herbs or sub-shrubs.

10 Hyba'nthus. Sepals unequal. Lower petal long, saccate at the base. Stamens connate at the base, the 2 inferior filaments bearing each a large shell-formed gland at the base. Capsule obovate, few-seeded. Inelegant shrubs, usually spinose.

11 Anchie'tia. Calyx deeply 5-parted, unequal. Lower petal large, unguiculate, with a spur at the base. Anthers almost sessile; 2 lower ones on very short filaments, each drawn out into a filiform appendage on the back. Capsule large, inflated, many-seeded. Erect or climbing shrubs.

TRIBE II.

ALSODÍNEÆ (*R. Br. congo. p.* 21.) *Petals equal* (f. 65. *b.*). *Stamens usually connected at the base, or adnate, to an elevated urceolus which is situated between the petals and the stamens.*

12 GONOHO'RIA. Sepals imbricate. Stamens free, approximate. Lobes of the anthers ending in a bristle. Ovary villous. Capsule 3-valved, few-seeded. Shrubs.

13 RINO'REA. In every respect the same as the last genus, but the filaments are dilated from the base into an acuminated ligula, not unguiculate, rather connate at the base.

14 ALSO'DEA. Sepals acute, imbricate. Filaments connate at the base into an urceolus which girds the ovary. Lobes of anthers usually drawn out at the apex into a bristle. Capsule bluntly trigonal, few-seeded. Large shrubs.

15 CERANTHE'RA. Sepals acute. Urceolus toothed, connected with the petals at the base, situated between the petals and the stamens. Filaments unguiculate at the base. Lobes of anthers ending in a bristle. Ovary ovate. Large shrubs.

16 PENTA'LOBA. Sepals erect. Petals approximate at the base, reflexed at the top. Urceolus 5-toothed, bearing the filaments between these teeth. Ovary pilose. Capsule 5-lobed, 1-celled, 5-seeded. A large shrub.

17 SPATULA'RIA. Calyx 5-parted (f. 66. *c.*), unequal, deciduous. Petals rather unequal (f. 66. *b.*,) inserted in the base of the calyx, with long spatulate claws, which are connivent. Anthers drawn out at the apex into a membranous point (f. 66. *a.*). Capsule many-seeded (f. 66. *d.*). An erect shrub.

18 HYMENANTHE'RA. Sepals imbricate. Petals at length reflexed. Structure of stamens as in *Viola*, but they are joined at the base into a monadelphous disk, with a scale at the back of each. Capsule rather baccate, 2-celled; cells 1-seeded. Large, branched, erect shrubs.

19 PIPA'REA. Sepals 5, equal, permanent, at length reflexed. Filaments 10-15, awl-shaped, all joined together at the base, closely girding the ovary. Capsule ovate, triquetrous, 1-3-celled, opening laterally from the top, densely clothed on the inside with brown velvetty down, bearing the seeds in the middle of the valves, one in each. Large shrubs.

Tribe I.

VIO'LEÆ (plants agreeing with *Viola* in having irregular flowers.) D. C. prod. 1. p. 288. Petals unequal (f. 64. *d.*). The three outer sepals usually broader than the two inner ones (f. 64. *a.*). Pericarps 3-valved, dehiscent, with a placenta in the middle of each valve (f. 62. *g.*). Stamens alternating with the petals; filaments dilated, drawn out beyond the anthers, free, (approximate or coarctate) or rarely joined. Cells of anthers at length 2-valved.

I. CALY'PTRION (καλυπτρα, *calyptra*, a hood or cover, and ιον, *ion*, a violet; in allusion to the hood-like spur at the base of the lower petal.) Ging. mss. D. C. prod. 1. p. 288. Corynóstylis, Mart. fl. bras. 1. p. 25.

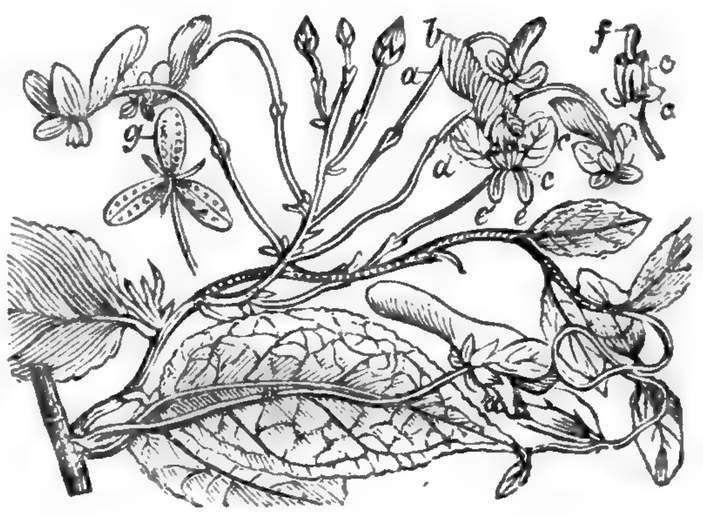
LIN. SYST. *Pentándria, Monogýnia.* Calyx small, running into the pedicel at the base. Sepals 5, almost equal (f. 62. *a.*), the 2 lower ones somewhat unequal-sided. Petals 5, the lower one large, drawn out behind into a large hollow pouch, which is compressed on the sides, and constricted in the middle, twisted, many-nerved; limb involute in æstivation, but spreading in the more advanced state, usually waved, erose or lobed. The 2 lateral petals hardly shorter than the lowest one (f. 62. *d.*), spreading; the rest small, and very short (f. 62. *e, e.*), and bent upwards, all generally villous. Stamens 5, 4 of which are connate; filaments dilated from the base, oblong; bearing the anthers low down; anthers twice the length of the ovary (f. 62. *c.*), with parallel lobes; the 4 ? anterior ones are drawn out on the outside into short bearded recurved appendages; these appendages are drawn in within the pouch. Capsule ligneous, 1-celled, 3-valved (f. 62. *g.*). Seeds numerous, large, rather square, compressed, wrinkled, fixed to the valves. Climbing shrubs, with alternate leaves and deciduous stipulas. Flowers large, white, disposed in axillary racemes. Pedicels with a bractea at the base of each, and bibracteolate in the middle.

Obs. Under *Viola Hybánthus*, Willd, there are four specimens very different from each other, joined, and probably belonging to three distinct genera. Compare Mayer, esseq. p. 123.

* 1. *Flowers large in racemes, or axillary and solitary on the branchlets.*

1 C. AUBLE'TII (Ging. mss. and D. C. prod. 1. p. 289.) stem striated, covered with white spots; leaves oblong-ovate, acuminated, serrated; flowers in fascicled racemes; sepals ovate, obtuse; spur of flower hardly inflated at the throat. ♄. ◡. S. Native of Guiana, Cayenne, island of Trinidad, and Brasil. Viola Hybánthus, Aubl. guian. 2. p. 811. t. 319. May fl. prim. esseq. p. 123. not of Willd. nor Pers. Ionídium Aublétii, Röm. and Schult. syst. 5. p. 397. Viola laurifòlia, Smith in Rees' cyclop. Corynóstylis Hybánthus, Mart. fl. bras. 1. p. 26. t. 17 and 18. Seeds large, roundish, chesnut-coloured. Flowers large, white (f. 62.).

FIG. 62.



Aublet's Hooded-violet. Clt. 1823. Sh. climbing.

2 C. BERTE'RII (Ging. mss. and D. C. prod. 1. p. 289.) stem striated, covered with white spots; leaves ovate, acuminated, entire; sepals ovate, acute; throat of spur inflated. ♄. ◡. S. Native of South America.

Var. a, Magdalenénse (D. C. prod. 1. c.) racemes axillary. Native of Baranquilla on the banks of the river Magdalena in inundated places. Viola scándens, Bert. ined. Flowers large, white.

Var. β, Mexicànum (D. C. prod. 1. c.) racemes terminal on the top of the branchlets; flowers larger. Native of Mexico. Moc. et Sesse. Viola cucullàta, Moc. et Sesse, fl. mex. ined. icon. Perhaps a distinct species. Flowers very large, white.

Bertero's Hooded-violet. Shrub climbing.

3 C.? CITRIFÒLIUM (Ging. mss. and D. C. prod. 1. p. 289.) stem ? leaves oblong, obtuse, quite entire; sepals ovate, acute; flowers solitary; capsules obsoletely 3-sided; seeds oblong, compressed. ♄. ◡. S. Native of Cumana. Viola arborescens, Lœfl. itin. p. 282. C. Loeflíngii, Spreng.

Citron-leaved Hooded-violet. Shrub climbing.

4 C.? ORINOCE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 384.) stem angular, puberulous; leaves serrulated, ovate-oblong, acute, obtuse at the base, upper surface glabrous, under surface pubescent; flowers solitary? ♄. ◡. S. Native of humid places near St. Fernando de Atabapo, Mission. del. Orinoco. Very

like *C. Aublétii*, according to Kunth, Vìola excélsa, Willd. herb. ex Rœm. and Schult. syst. 5. p. 391. Flowers large, white.

Orinoco Hooded-violet. Shrub climbing.

§ 2. *Flowers small, disposed in axillary crowded fascicles.*

5 C.? FRANGULÆEÒLIUM (Ging. mss. and D. C. prod. 1. p. 289.) stem twining to the right; leaves oblong-elliptical, acute, rounded at the base, obsoletely serrulated, puberulous on both surfaces; flowers disposed in crowded fascicles, exceeding the footstalks of the leaves; sepals narrow, acuminated; lower petal emarginate at the top; spur (hood) obtuse, flattened on the sides; stamens furnished with very long smooth appendages. ♄. ⌒. S. Native in the Andes about Popayan at the height of 6016 feet. Noiséttia frangulæfòlia, H. B. et Kunth. nov. gen. amer. 5. p. 384. t. 499. *a* and *b* f. 1. Flowers like those of *Noiséttia* but the habit of the plant agrees with *Calýptrion*.

Frangula-leaved Hooded-violet. Shrub twining.

† *Doubtful Species.*

6 C.? DIA'NDRUM (Ging. mss. and D. C. prod. 1. p. 289.) stem herbaceous, creeping; leaves oblong; peduncles solitary; lower petal trifid. ♃. S. Vìola diándra, Allemand in Lin. syst. 669. Ionídium diándrum, Rœm. et Schult. syst. 5. p. 399. Flowers white?

Diandrous Hooded-violet. Pl. creeping or twining.

Cult. Elegant climbing shrubs, well adapted for covering rafters in stoves. A rich light soil will suit them best, and young cuttings will root freely if planted in a pot of sand, placed under a hand-glass, in heat.

II. NOISE'TTIA (in honour of Louis Noisette, an eminent French cultivator and writer on fruit-trees, author of Le Jardin Frutier, 2. fasc. in 4to. 1813). H. B. et Kunth, nov. gen. amer. 5. p. 382. exclusive of the synonym of Aublet, Bigelòwia, D. C. mss. but not of Sprengel.

LIN. SYST. *Pentándria*, *Monogýnia*. Calyx middle-sized, running into the pedicel at base; sepals 5 (f. 63. *e.*), unequal, 2 lower ones usually with unequal sides. Lower petal large (f. 63. *b.*), with the limb involute in æstivation, drawn out behind into a long straight cylindrical tube (f. 63. *c.*); 2 lateral petals short, ascending, the rest smaller, all smooth? Stamens free; filaments dilated at the base and furnished with a membrane at the top, bearing the anthers low down; anthers hardly longer than the ovary, with sub-sagittate lobes, the two anterior anthers drawn out on the back into nectariferous awl-shaped appendages (f. 63. *g.*), which are drawn in, within the tube. Ovary superior; ovulæ usually 12-30? rather pear-shaped (H. B. et Kunth. l. c.). Capsule 1-celled, 3-valved, membranous, ovate, obsoletely 3-sided, veiny, with linear placentas; valves few-seeded. Erect or scandent shrubs, with twiggy branches. Leaves alternate, simple, stalked, feather-nerved. Stipulas in pairs, usually running down the stem. Flowers on pedicels; pedicels many, or from abortion solitary, bibracteolate towards the middle, but not jointed, disposed in axillary crowded fascicles. Flowers of a pale colour.

1 N. LONGIFO'LIA (H. B. et Kunth. nov. gen. amer. 5. p. 382. t. 499. b & f. ii.) stem shrubby, striated, simple or branched; leaves lanceolate, serrated, acute, tapering into the short footstalks at the base; flowers in bundles; peduncles bractless; spur awl-shaped, length of pedicel; sepals lanceolate, acuminated, 2 lower ones unequal-sided, eared on the outside at the base; lower petal obcordate, lateral ones oblong, obtuse, the rest ovate; ovary many-seeded; stigma hooked. ♄. S. Native of Cayenne. Vìola longifòlia, Poir. dict. 8. p. 649. Ionídium longifòlium, Rœm. et Schultz. syst. 5. p. 398. Flowers cream-coloured or white.

Long-leaved Noisettia. Clt. 1824. Shrub 1 to 1½ foot.

FIG. 63.

2 N. ORCHIDIFLO'RA (Ging. mss. et D. C. prod. 1. p. 290.) stem slender, smooth; leaves lanceolate, serrulated, on long footstalks; flowers 4-6 in a fascicle; spur obtuse, a little shorter than the pedicel. ♄? S. Native of Guiana. Vìola orchidiflòra, Rudge, pl. guian. rar. 1. p. 11. t. 10. Ionídium orchidiflòrum, Rœm. et Schult. syst. 5. p. 400. Flowers cream-coloured or white (f. 63.).

Var. β; leaves lanceolate, acuminated, serrated, tapering at the base into the long footstalk, glabrous; flowers 3-4 lines long, 3-4 in each fascicle; capsules 3-sided, straw-coloured, 2-3-seeded, with ovate, veiny, glabrous valves. ♄. S. Native of Guiana.

Orchis-flowered Noisettia. Shrub 1½ foot.

3 N. GALEOPSIFO'LIA (St. Hil. in mem. mus. 11. p. 461.) stems somewhat herbaceous, simple, triangular, a little winged; leaves lanceolate, rather acuminated, acute, serrated; flowers in racemose bundles; peduncles bractless; ovary usually containing 15 seeds. ♃. S. Native of Brasil in old woods on the eastern part of the province of Minas-Geraes, near the village called Rio-Vermelho. N. longifòlia, Nees et Mart. in nov. act. Bonn. 12. p. 48. but not of Kunth. Root yellow. Petals pale yellow, but pale scarlet at the apex.

Hemp-Nettle-leaved Noisettia. Fl. April. Pl. 1 to 1½ foot.

4 N.? ROQUEFEUILLA'NA (St. Hil. in mem. mus. 11. p. 462. t. 22. f. c.) plant glabrous, stems shrubby, round, climbing, branched; leaves ovate or oblong, or elliptical-lanceolate, acuminated, rather acute at the base, crenate-serrated; peduncles bracteate; flowers usually disposed in racemes. ♄. ⌣. S. Native of Brasil in old woods on Mount Tejuca near Rio Janeiro. A climbing shrub. Perhaps a species of *Anchìtia*.

Roquefeuille's Noisettia. Fl. Aug. Shrub climbing.

5 N. ACUMINA'TA (D. C. mss. and prod. 1. p. 290.) leaves lanceolate, on short footstalks, ciliated, toothed, drawn out at the apex into a long, entire acumen; pedicels solitary, a little shorter than the leaves; capsules ovate. ♄? F. Native of North America. Violæoìdes, Mich. ined. Perhaps a variety of *N. orchidiflòra*.

Acuminated-leaved Noisettia. Shrub 2 feet.

Cult. These curious plants will grow freely in light rich soil, and young cuttings will strike root freely if planted in a pot of sand, placed under a hand-glass, in heat. The climbing species is well fitted for covering rafters in stoves.

III. SCHWEIGGE'RIA (in honour of Aug. Frid. Schweigger, Professor at Regiomonti in Sicily). Spreng. ex St. Hil. mem. mus. 11. p. 454. Glóssarrhen, Mart. fl. bras. 1. p. 22. D. C. prod. 1. p. 290.

LIN. SYST. *Pentándria*, *Monogýnia*. Sepals of calyx very unequal, running into the peduncle at the base, 3 exterior sepals large (f. 64. *a.*), longer than the petals, usually cordate, acuminated, hastately 2-eared at the base, lower ones unequal-sided, with the spur between, with the auricles of the exterior ones stretched out, and usually rounded; 2 inner sepals very small and very narrow. Petals 5, unequal, with 3-nerved claws; 2 upper ones shortest, 2 lateral ones longer than the upper ones (f. 64. *c c.*), lowest one large (f. 64. *b.*), with the limb involute in æstivation, bicallose at the base, and drawn out behind into a hollow spur (f. 64. *e.*). Filaments of stamens separated and dilated at the base, oblong, pressed to the ovary, each furnished with a membrane at the apex, bearing the

anthers low down; lobes of anthers drawn out at the top? diverging, but approximate at the base; 2 anterior filaments bearing on their back nectariferous awl-shaped appendages, which are drawn in within the spur (f. 64. *e.*). Stigma ascending, usually drawn out downwards into a somewhat spatulate appendage, somewhat inflexed at the top (f. 64. *f.*). Capsule 1-celled, 3-valved, many-seeded (f. 64. *k.*); seeds fixed to the middle of the valves. Branched shrubs with reddish bark, about 6 feet high. Leaves simple, alternate, serrated, deciduous, feather-nerved; stipulas small. Peduncles solitary, 1-flowered, axillary, bracteate. This is an intermediate genus between *Noiséttia* and *Viola*, differing from both in the form of the calyx.

1 S. floribu'nda (St. Hil. mem. mus. 11. p. 456. t. 22. b.) leaves ovate-oblong, tapering to both ends, acute, and acutely serrate-toothed; peduncles axillary. ♄. S. Native of Brasil on mountains near Rio Janeiro. Flowers white; lower petal cuneated, streaked with yellow and red at the base. Glóssarrhen floribúndus, Mart. fl. bras. 1. p. 22. t. 15.

Bundle-flowered Tongue-violet. Fl. Sept. Oct. Sh. 4-5 feet.

2 S. pauciflòra (Mart. fl. bras. 1. p. 23. act. bonn. 12. p. 48. under Glóssarhen) leaves tapering much to the base, obovately-spatulate, obtuse, crenately serrulated; peduncles axillary. ♄. S. Native of Brasil in the province of Bahia in shady stony places at the river Atahype. Flowers white (f. 64.).

Few-flowered Tongue-violet. Fl. Dec. Sh. 4 to 6 feet.

Cult. These beautiful shrubs will thrive in a mixture of loam, sand, and peat, and young cuttings will strike root readily if planted in sand under a hand-glass, in heat.

FIG. 64.

IV. VI'OLA (*ιον*, *ion*, a violet, in Greek. The ancients feigned that violets were the first food of the cow Io, one of Jupiter's mistresses). Tourn. inst. 419. t. 236. D. C. prod. 1. p. 291. Viola, spec. Lin.

Lin. syst. *Pentándria*, *Monogýnia*. Sepals unequal, all more or less drawn out downwards into ear-like appendages, (produced from the dilatation of the nerves,) erect after flowering. Petals unequal, convolute in æstivation, with 3-nerved claws, lower one drawn out downwards, more or less into a hollow spur. Stamens approximate or coarctate (not joined) inserted on the top of the teeth of a pentagonal, 5-toothed torus. Filaments dilated at the base, oblong, or triangular, bearing the anthers low down; lobes of anthers spreading at the base; the 2 anterior stamens bearing on their back 2 nectariferous, filiform appendages of various shapes, which are drawn in within the spur. Ovary sometimes superior, sometimes girded round at the base by a concave torus, and therefore in this case appears half inferior. Valves of capsule elastic, contracting at maturity and ejecting the seeds. Seeds horizontal, manifestly carunculate, more or less egg-shaped and shining. Embryo oblong; radicle rather terete; cotyledons usually oblong-orbicular, flattish, scarcely longer than the radicle. Elegant, low herbs, for the most part perennial, rarely annual, sometimes with a very short or subterraneous stem, these are called stemless, sometimes caulescent, rarely shrubby. Leaves alternate, marcescent. Peduncles solitary, axillary 1-flowered, furnished with 2 little bracteas, not jointed, reflexed at the top. Flowers drooping. Seminal leaves oblong or ovate, stalked; primordial leaves opposite, rarely meeting together. The roots of all the species act as emetics, some are used as a substitute for ipecacuanha, and it has been ascertained by analysis that they contain the same principle. In medicine the flowers of violets act as a laxative, and the syrup is used by chemists to detect an acid or an alkali; for this purpose the *V. odoràta* is cultivated to some extent at Stratford upon Avon.

We have here followed M. Gingins in the arrangement of the species according to the form of the stigmas, but whether this character has been sufficiently ascertained in all the species we are not at present able to say.

Sect. I. Nomi'nium (a name applied by old authors to some kinds of violets). Ging. mss. D. C. prod. 1. p. 291. Stigma beaked, with a little chink or hole situated on the apex of the beak, which is more or less recurved, sometimes marginated below, hence flattish and oblique, sometimes without the margin, and thence rather convex below. Style tapering from the top to the base. Stamens oblong, approximate. Torus flattish. Capsules usually 3-sided. Seeds 15-27. Seminal leaves usually obovate or oblong.

§ 1. *Stigmas depressed at the top, or marginated in the orb below. Stemless herbs.*

* *Roots (Rhizomas?) toothed, more or less fleshy, usually oblique.*

† *Leaves pedate, or lobed.*

1 V. peda'ta (Lin. spec. 1323.) stigma large, compressed at the sides, obliquely truncate at the top, and perforated, with a very short beak; leaves full of pellucid dots, pedately many-parted; segments linear-lanceolate, variously lobed; stipulas pectinately jagged, adhering a considerable way; petals all smooth, superior one truncate; sepals lanceolate, acute, ciliated, emarginate behind. ♃. H. Native from New England to Carolina, on dry sandy hills and in fields. Curt. bot. mag. 89. Andr. bot. rep. t. 153. Flowers large, beautiful blue, with a white base.

Var. a, *linearíloba* (D. C. prod. 1. p. 291.) leaves pedately 5-7 parted; partitions multifid; lobes linear-lanceolate, entire, ciliated. Curt. bot. mag. t. 89. Sweet, fl. gard. t. 69. Flowers pale blue. Native of Virginia.

Var. β, *ranunculifòlia* (Ging. mss. and D. C. prod. l. c.) leaves deeply lobed. V. ranunculifòlia, Poir. dict. 8. p. 626? Flowers whitish? Perhaps the same as the following.

Pedate-leaved Violet. Fl. May, June. Clt. 1759. Pl. ½ ft.

2 V. septenlòba (Le Conte in ann. lyc. new york, 2. p. 141.) quite smooth, shining; leaves rather succulent, ovate, cordate, toothed, lower ones entire, the rest pedately 7-lobed; middle lobe large; peduncles somewhat tetragonal, longer than the leaves; sepals lanceolate, entire behind; petals all entire, upper one large, villous at the base, 2 lateral ones densely bearded. ♃. H. Native of North America in Carolina and Georgia, in pine-woods. Flowers large, 2 inches in diameter, blue, but white at the base, and marked with darker lines. This plant comes very near in habit to *V. pedàta*, but is much stronger, and is more worthy of that name than the plant that bears it.

Var. β, *albiflòra* (Le Conte, l. c.) flowers white.

Seven-lobed-leaved Violet. Fl. April, June. Clt. Pl. ½ foot.

3 V. pedati'fida; leaves pedately 3-parted, middle partition trifid, lateral ones bifid, all lobed. Very like *V. pedàta*, but differs in the two lateral petals being bearded. ♃. H. Native of North America. Flowers beautiful blue.

Pedatifid-leaved Violet. Fl. May, June. Clt. 1826. Pl. ¼ ft.

4 V. digita'ta (Pursh. fl. amer. sept. 1. p. 171.) leaves palmately 5-7-lobed, tapering into the petiole behind; lobes entire. ♃. H. Native of Virginia. Flowers pale blue.

Digitate-leaved Violet. Fl. May. Clt.? Pl. ¼ foot.

5 V. FLABELLIFO'LIA (Lodd. bot. cab. 777.) stigma as in *V. pedàta;* style pubescent; leaves pedately 5-7-parted; partitions cuneated, cut; stipulas jagged, adhering a considerable way; petals smooth. 4. H. Native of North America. V. pedàta, var. bícolor, Pursh, fl. amer. sept. 1. p. 171. V. atropurpùrea, Raf. in litt. Flowers large, pale blue, ornamented with dark purple at the edge, and velvety at the bottom.

Fan-leaved Violet. Fl. May, June. Clt. Pl. $\frac{1}{4}$ foot.

6 V. PALMA'TA (Lin. spec. 1323.) nearly smooth, or sometimes a little pubescent; stigma capitate, recurved, beaked, depressed, marginate; rhizoma fleshy, thick; leaves hastately-cordate, palmately-lobed; lobes polymorphous (rarely undivided); sepals ciliated, ovate-lanceolate, entire behind; lateral petals bearded, with the claws of all keeled. 4. H. Native of North America. Flowers blue.

Var. α, vulgàris (Elliot, sket. 1. p. 300.) outer lobes of leaves with small acute segments at the base.

Var. β, fràgrans (Elliot, l. c.) leaves more dissected; flowers fragrant. Native near Savannah.

Var. γ, dilatàta (Elliot, l. c.) pubescent; leaves profoundly dissected. Common in Carolina and Upper Georgia. This is the type of the species, according to Schwein.

Var, δ, variegàta; leaves of 2 formes, later ones 3-lobed; lateral lobes deeply lobed, middle lobe large and not so deeply lobed as the lateral ones; flowers variegated with blue and white. 4. H. Native of North America. Sepals not ciliated.

Palmate-leaved Violet. Fl. May, June. Clt. 1752. Pl. $\frac{1}{2}$ foot.

7 V. HETEROPHY'LLA (Muhl. cat. ex Le Conte in ann. lyc. new york, 2. p. 139.) smooth; leaves cordate, elongated-ovate, rather acute, crenate-toothed, entire, and somewhat palmately 5-lobed, with the intermediate lobe much larger and broader than the rest; peduncles somewhat tetragonal, longer than the leaves; sepals awl-shaped, emarginate behind; petals all entire, veined, white at the base, superior petal villous at the base, lateral ones bearded, and with the inferior one marked with a few blue lines. 4. H. Native of North America in Georgia and Carolina, in humid places and in rice grounds. V. palmàta var. heterophýlla, Elliot, D. C. Leaves esculent and mucilaginous.

Var. β, albiflòra (Le Conte, l. c.) flowers white; leaves entire, but when in flower a little lobed. Leaves esculent and mucilaginous, which is the case with most of the violets of this section.

Various-leaved Violet. Fl. April, May. Clt.? Pl. $\frac{1}{2}$ foot.

8 V. CONGE'NER (Le Conte in ann. lyc. new york, 2. p. 140.) always villous; leaves broad-ovate, cordate, rather kidney-shaped, deeply crenate-toothed, so as to appear lobed; petioles very villous; peduncles somewhat tetragonal, shorter than the leaves; sepals ciliated, ovate, obtuse, entire behind; petals all entire, veined, white at the base, upper petal narrowest, sometimes rather villous at the base; lateral ones densely bearded, and with the inferior one marked with a few blue lines. 4. H. Native of North America along with *V. palmàta*, but is easily distinguished at first sight by the yellowish-green colour of its leaves. Flowers blue, white at base, or of a deep-violet. Perhaps the same as the following.

Congener Violet. Fl. March, July. Clt. Pl. $\frac{1}{2}$ foot.

9 V. TRI'LOBA (Schwein. amer. journ. 5. no. 1.) stigma capitate, recurved, beaked, depressed; rhizoma fleshy, thick; leaves smooth, of two forms, some of them nearly kidney-shaped, others 3-lobed; lateral lobes small, sub-divided. 4. H. Native of Carolina, in fertile woods and meadows. Flowers deep blue. V. palmàta, var. tríloba, Ging. mss. in D. C. prod. 1. p. 292.

Three-lobed-leaved Violet. Fl. April, June. Pl. $\frac{1}{2}$ foot.

†† *Leaves cordate, entire.*

10 V. ASARIFÒLIA (Pursh. fl. amer. sept. 2. p. 732. not of Muhl.) stigma globose, not marginate; rhizoma very thick, coral-formed; leaves large, cordately kidney-shaped, undivided, crenately-toothed, pubescent; lateral petals bearded; pedicels shorter than the leaves. 4. H. Native from Virginia to North Carolina, in low, rich woods and meadows. Flowers blue.

Asarabacca-leaved Violet. Fl. May, Ju. Clt. 1820. Pl. $\frac{1}{4}$ ft.

11 V. PAPILIONA'CEA (Pursh. fl. amer. sept. 1. p. 173.) stigma triangular, marginate; rhizoma fleshy, thickish; leaves triangularly-cordate, acute, crenated, rather cucullate, smoothish; 3 lower petals connivent, bearded beneath the middle, 2 upper ones reflexed. 4. H. Native of North Carolina, and near Philadelphia, in humid places. Rœm. et Schult. syst. 5. p. 356. V. barbàta, Willd. MSS.? Flowers blue, striated, and bearded with yellow down.

Var. α, sepals acuminated; leaves triangularly-cordate, acuminated.

Var. β? sepals ovate; leaves cordate, acutish.

Butterfly Violet. Fl. May, June. Clt. 1800. Pl. $\frac{1}{4}$ foot.

12 V. AFFI'NIS (Le Conte in ann. lyc. new york, 2. p. 138.) plant smooth; leaves ovate, cordate, rather acuminated, crenate-toothed; peduncles somewhat tetragonal, shorter than the leaves; sepals ovate-lanceolate, either entire or emarginate behind, rather blunt; petals entire, veiny, 2 lateral ones bearded, 4. H. Native of North America. V. cucullàta, Schweinitz and Torrey. V. soròria, Pursh. fl. amer. sept. 1. p. 173. V. papilionàcea var. β, D. C. prod. 1. p. 292. Flowers blue, white at the bottom, upper petal villous as well as the rest, lateral ones bearded, lower one marked with a few blue lines.

Neighbouring Violet. Fl. April, June. Clt. 1802. Pl. $\frac{1}{2}$ ft.

13 V. CUCULLA'TA (Ait. hort. kew. 3. p. 288.) stigma triangular, marginated; rhizoma fleshy, thick; leaves smooth, cordate, acute, serrated, cucullate at the base; peduncles longer than the petioles; limb of lower petal narrow, beardless, with the 2 lateral ones bearded, all obliquely twisted; claws of all keeled. 4. H. Native of North America, in wet places, common. Flowers blue, white at the base. Sims, bot. mag. 1795. V. oblíqua, Pio. diss. p. 12. t. 3. f. 1. V. cucullàta, β, glabérrima, D. C. prod. 1. p. 292. Sepals subulate, emarginate behind.

Var. β, hispídula (D. C. prod. l. c.) leaves with a short acumen, rather hispid on the upper surface. Flowers blue?

Var. γ, cordifórmis (D. C. prod. l. c.) leaves cordate, hardly acuminate, rather hispid on the upper surface; rhizoma perpendicular, blackish. Perhaps a species.

Hooded-leaved Violet. Fl. April, Ju. Clt. 1762. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

14 V. IMBE'RBIS (Ledeb. fl. alt. 1. p. 257. icon. fl. pl. ross. alt. ill. t. 236.) stemless; leaves cordate, acute, serrated, rather pilose; peduncles length of leaves, furnished with bracteas in the middle; sepals lanceolate, acuminated, ciliated at the base; petals oblong, obtuse, beardless; spur elongated, blunt, a little incurved. 4. H. Native of Siberia Altaica. Flowers violaceous. Like *V. macróceras*, but the petals are not bearded.

Beardless-petalled Violet. Fl. April, May. Pl. $\frac{1}{2}$ foot.

15 V. OBLI'QUA (Ait. hort. kew. 3. p. 288.) stigma triangular, marginated; rhizoma fleshy, thick; leaves smooth, cordate, acute, crenately-serrated, flattish; flowers erect; peduncles length of leaves; petals obliquely twisted; lateral ones very narrow, and longer than the rest, bearded beneath the middle. 4. H. Native from Pennsylvania to Virginia, in wet shady places. Flowers white, with purple and yellow veins. Víola cordàta, Walt. car. 219.?

Oblique-petalled Violet. Fl. April, June. Clt. 1762. Pl. $\frac{1}{2}$ ft.

•• *Roots wrinkled, more or less ligneous, and branched.*

† *Leaves pinnate, or lobed.*

16 V. PINNA'TA Lin. spec. 1323.) stigma triangular, emar-

ginated; root divided, rather woody; leaves pinnately many-parted; partitions many-lobed; sepals ovate; 2 lateral petals bearded; seeds turbinate, foveolate at the base, reddish. ♃. H. Flowers pale blue, with darker veins. This species is smaller than *V. pedàta;* leaves generally as deeply divided into about 5 segments, which are either 3-cleft or pinnatifid, as well as jagged, and very narrow.

Var. α, *Sibírica,* (D. C. prod. 1. p. 293.) leaves pinnate-parted; partitions pinnatifid, densely ciliated; capsules more acute, and the seeds are smaller than in Var. β. Native of Siberia. Gmel. sib. 4. p. 101. t. 48. f. 4.

Var. β, *Europæ'a* (D. C. prod. l. c.) leaves pinnatifid; fissures many-lobed, remotely ciliated; capsules obtuse; seeds large. Native of the mountains of Switzerland and Savoy. All. miscell. taur. 3. p. 181. t. 5. f. 2. Hall, hist. no. 561.

Pinnate-leaved Violet. Fl. May, June. Clt. 1752. Pl. ½ ft.

17 V. disse'cta (Led. fl. alt. 1. p. 255. icon. pl. fl. ross. alt. ill. t. 232.) stemless; leaves 3-parted; segments multifid, toothed, smooth; sepals ovate-lanceolate, acute, rather shorter than the spur; 2 lateral petals bearded. ♃. H. Native on the Altaian mountains, about Barnaoul, and elsewhere. V. multifída, Willd. herb.—Gmel. sib. 4. p. 101. no. 66. Flowers largeish, violet. Root (rhizoma?) horizontal, branched.

Dissected-leaved Violet. Fl. May. Pl. ¼ foot.

18 V. dactyloi'des (Rœm. et Schult. syst. 5. p. 351.) stigma marginated; root divided, hard; leaves palmately 5-7-cleft; leaflets oblong-lanceolate, grossly serrated, under surface villous; sepals ovate; 2 lateral petals bearded. ♃. H. Native of birch forests about Irkoutck and Nertschinsk-Sawod. V. palmàta, Patrin. herb. Gmel. sib. 4. p. 100. t. 49. f. 3. Flowers pale blue, with darker veins.

Finger-grass-leaved Violet. Fl. April, June. Clt. 1820. Pl. ¼ to ½ foot.

†† *Leaves ovate-cordate, or lanceolate.*

19 V. variega'ta (Fisch. in litt. et D. C. prod. 1. p. 293.) style marginated; root sub-divided, hardish; leaves ovate-cordate, or roundish; capsules obtuse; seeds ovoid, reddish. ♃. H. Native of Dahuria. V. maculàta, Patrin. herb. but not of Cav. Stipulas lanceolate, ¾-adhering, denticulated. Leaves violaceous on the under surface, obscurely green on the upper surface, white at the veins, and rather hispid. Spur cylindrical, straight, length of sepals. In fruit-bearing plants the leaves are large, roundish, almost glabrous. Flowers pale violet, very like those of *V. pinnàta.* Capsules obovate-trigonal.

Variegated-leaved Violet. Fl. May, June. Clt. 1817. Pl. ¼ foot.

20 V. calthæfo'lia (Poir. dict. 8. p. 627.) leaves ovate-cordate, obtuse, somewhat crenated, rather hairy; peduncles shorter than the leaves. ♃. H. Native? Perhaps the same as *V. asarifòlia?* Capsules ovate-triquetrous. Seeds globose. Flowers blue. Lateral petals bearded?

Caltha-leaved Violet. Pl. ½ foot.

21 V. phyteumæfo'lia (D. C. in herb. Lamb.) pubescent; stigma? leaves oblong-ligulate, obliquely cordate at the base, obtuse at the apex; peduncles twice the length of the leaves; sepals lanceolate, acute; spur blunt, shorter than the sepals; petals obovate-oblong, lower one retuse, lateral ones bearded; stipulas linear, entire, acute. ♃. F. Native of New Holland. Peduncles 6-9 inches high. Flowers about the size of those of *V. calcaràta.* Like *V. ovàta.*

Phyteuma-leaved Violet. Pl. ½ foot.

22 V. primulæfo'lia (Lin. spec. 1324. exclusive of the synonym of Gmel.) stigma marginate; root fibrous, rather branched; leaves smoothish, ovate, rather cordate at the base, running down into bordered footstalks, obscurely crenate; stipulas free; sepals smooth, lanceolate, rather obtuse; 2 lateral petals bearded at the base, lower one acuminated. ♃. H. Native of Pennsylvania, Virginia, Carolina, and New Jersey, in humid places. Flowers small, white, veined, the lower petal with dark purple.

Var. α, *cordàta* (D. C. prod. 1. p. 293.) smoothish. footstalks shorter than the leaves; scapes twice the length of the leaves. ♃. H. Native of North Carolina. V. primulæfòlia, Ait. hort. kew. ed. 2. vol. 2. p. 45? Schwein. amer. journ. 5. no. 1. p. 48. V. cordàta, Watl.? ex Bosc. Flower blueish, sweet-scented.

Var. β, *Bóscii* (D. C. prod. l. c.) smoothish; footstalks almost none; scapes hardly exceeding the leaves. ♃. H. Native of Carolina. Pl. 6 inches high.

Cowslip-leaved Violet. Fl. April, June. Clt. 1783. Pl. ¼ to ½ foot.

23 V. lanceola'ta (Lin. spec. 1323.) stoloniferous; stigma marginate, beaked; leaves lanceolate, tapering to both ends; stipulas free; sepals lanceolate; 2 lateral petals bearded. ♃. H. Native of North America in humid places. V. lanceolàta, Lin. spec. exclusive of the Siberian variety. Lodd. bot. cab. t. 211. Sweet, fl. gard. 174. Flowers white, the lower and lateral petals painted with purple veins. Leaves serrated.

Var. β, leaves ovate, truncate at base. ♃. H. Native of Georgia and Carolina. Perhaps a variety of *V. primulæfòlia.*

Spear-leaved Violet. Fl. June, July. Clt. 1759. Pl. ¼ foot.

24 V. attenua'ta (Sweet, hort. brit. p. 37.) smooth; leaves lanceolate, acute, and somewhat serrated, gradually tapering down the petiole; peduncles scarcely longer than the leaves; segments of the calyx acute; petals beardless, 2 upper ones roundish; stigma recurved, distinctly beaked, capitate, not marginate. ♃. H. Native of North America, from Canada to Pennsylvania, in overflowed meadows. Flowers white, scentless; the upper petal painted with purple veins. V. lanceolàta, Pursh, fl. amer. sept. 1. p. 172. Nutt. gen. amer. 1. p. 150. but not of Lin.

Attenuate-leaved Violet. Fl. Ju. July. Clt. 1759. Pl. ¼ ft.

25 V. Patrínii (D. C. mss. and prod. 1. p. 293.) stigma triangular, marginated; trunk of root hardish; leaves ovate-lanceolate, truncate at the base; sepals lanceolate; 2 lateral petals bearded; stipulas one-half adhering. ♃. H. Native of Siberia. V. prunellæfòlia, Fisch, in litt. Flowers pale blue. Petioles 3 or 4 times longer than the leaves.

Patrin's Violet. Fl. June, July. Clt. 1822. Pl. ¼ foot.

26 V. longisca'pa (D. C. in herb. Lamb.) smooth; stigma? leaves oblong, rounded at both ends, somewhat attenuated at the base, almost entire, or with 1-3 teeth on each side at the base; peduncles twice the length of the leaves; sepals ovate-lanceolate, obtuse, entire; petals all smooth; spur a hollow pouch, not half the length of the sepals. ♃. F. Native of New Holland. Peduncles 8 inches high. Flowers about the size of those of *V. blánda.*

Long-scaped Violet. Pl. ¾ foot.

27 V. cæspito'sa (D. Don, prod. fl. nep. p. 205.) smooth; leaves oblong, obtuse, crenulate, rounded at the base; petioles winged, 3-times shorter than the leaf; scapes exceeding the leaves in length; segments of the calyx lanceolate, acute; petals obovate, entire, 2 lateral ones bearded. ♃. F. Native of Nepaul, at Chitlong. V. primulæfòlia, Hamilt. mss. V. Patrínii, γ, Nepaulénsis, D. C. prod. 293. Flowers violaceous.

Tufted Violet. Fl. April. Clt. 1824. Pl. ½ foot.

28 V. Chine'nsis; root annual; leaves oblong-ovate, rather cordate, smooth, crenated, running into the petiole at the base; peduncles long; petals all beardless. ⊙. H. Native of China, near Canton, in uncultivated places. Flowers purple, sweet-scented. V. primulæfòlia, Lour.

Chinese Violet. Fl. June, July. Pl. ½ foot.

29 V. acu'ta (Bigel ex Spreng. syst. append. p. 96.) leaves

ovate-lanceolate, bluntish, obsoletely crenated, running down the petiole at the base; stipulas linear-lanceolate; petals acute, beardless; spur very short. 4. H. Native of North America, in Massachusetts. Flowers blue? Stigma unknown.

Acute-leaved Violet. Pl. ¼ foot.

30 V. ova'ta (Nutt. gen. 1. p. 148.) villous; stigma marginate; trunk of root thick, somewhat fleshy; leaves ovate, subcordate, rather acute, crenate, usually lacerately toothed at the base, tapering abruptly into the footstalk, which is therefore winged, conspicuously pubescent on either side; scape shorter than the leaves; sepals lanceolate; stipulas lanceolate, long; petals obovate, the two lateral ones bearded. 4. H. Native on dry hills from Canada to Virginia; abundant near Philadelphia, on the shelving rocks which border the Schuylkill; also in sandy fields of New Jersey. V. primulæfòlia, Pursh. fl. amer. sept. 1. p. 173. Bigel. fl. bost. 59. V. ciliàta, Muhl. V. fimbriátula, Smith in Rees' cycl. Flowers bright blue, large.

Var. β, Belvisiàna, (D. C. prod. 1. p. 294.) very hairy; footstalks hardly any; peduncles shorter than the leaves; flowers smaller than in var. α. Native of the higher mountains of Virginia.

Ovate-leaved Violet. Fl. April, May. Clt. 1783. Pl. ¼ ft.

31 V. spatula'ta (Willd. herb. ex Spreng. syst. 1. p. 798.) leaves spatulate, almost sessile, nearly entire, and are, as well as the scapes, hoary-villous; spur short, bluntish; stigma unknown. 4. H. Native of Persia.

Spatulate-leaved Violet. Pl. ¼ foot.

32 V. sagitta'ta (Ait. hort. kew. 3. p. 287.) stigma marginate; trunk of root fibrous; leaves ciliated, oblong, sagittately-cordate at the base, subserrated, and cut at the base, sometimes slightly pubescent; stipulas free; sepals smooth, lanceolate, acute; petals obovate, the 2 lateral ones bearded at the base. 4. H. Native on dry hills from New England to Virginia. Flowers blue; lower petal white towards the bottom, with purple veins; the rest longer, narrower, and white towards the base. There is a variety of this plant, with the base of the leaves truncate, and tapering more or less abruptly at the base, pubescent. V. sagittæfòlia, Sal. prod. 130. Sepals emarginate behind.

Var. β, emarginàta (Nutt. gen. 1. p. 147.) leaves triangularly-cordate, or hastate, lacerately toothed near the base, and running into a narrow margin on the petiole, under surface glabrous, upper surface usually pubescent; scapes longer than the leaves; petals obovate, all emarginate and bidentate, lowest cucullate, the 3 lower, and sometimes the 2 upper, pubescent; stigma beaked, depressed horizontally, marginate around. 4. H. Native of New Jersey, in sandy fields, near Philadelphia, and also on the banks of the Schuylkill. Flowers of a fine deep blue.

Arrow-leaved Violet. Fl. Apr. July. Clt. 1775. Pl. ½ ft.

33 V. emargina'ta (Le Conte in ann. lyc. new york, 2. p. 142.) smooth; leaves rather succulent, oblong-ovate, cordate, toothed, sometimes ciliated, superior ones unequally and deeply-toothed at the base, and usually running into the petiole at the base, with the mid-rib very prominent; petioles sometimes rather villous; peduncles tetragonal, longer than the leaves; sepals lanceolate, acute, emarginate behind; petals all emarginate, villous, lower as well as lateral petals bearded. 4. H. Native of North America in dry woods, from New Jersey to Carolina. V. dentàta, Pursh. fl. amer. sept. 1. p. 172. V. sagittàta, var. γ, dentàta, Schwein. amer. journ. no. 2. D. C. prod. 1. p. 294. Flowers blue, white at the base, upper petal with a few purple veins.

Emarginate-petalled Violet. Fl. April, June. Clt. Pl. ½ foot.

34 V. betonicæfo'lia (Smith, in Rees' cycl. no. 7.) plant rather downy; stigma triangular, marginated; trunk of root ligneous, almost simple, blackish; leaves smoothish, or slightly downy, linear oblong, obtuse, regularly crenate, cordate, slightly dilated at the bottom, abruptly tapering into the base; stipulas free; sepals lanceolate; capsule oblong, trigonal, with somewhat obtuse valves; seeds turbinate, brownish-red when ripe. 4. G. Native of New Holland, at Botany Bay and Port Jackson. V. longifòlia, R. Br. ined. Flowers apparently light purple, not much veined. Scapes always densely downy, longer than the leaves.

Betony-leaved Violet. Fl. Apr. July. Clt. 1820. Pl. ¼ ft.

* * * *Roots somewhat fusiform.*

35 Phili'ppica (Cav. icon. rar. 6. p. 19. t. 529. f. 2.) stigma marginate; roots fusiform, almost simple; leaves ovate-oblong, obtuse, crenate, rather villous on the under surface, tapering abruptly at the base into a shorter footstalk; stipulas adnate; sepals ovate-lanceolate; petals ovate, obtuse; seeds almost globose, brownish-red. 4. F. Native of the islands of Manila and Luzon, amongst stones. Scapes double the length of the leaves, with 2 linear opposite bracteas in the middle of each. Differing from *V. betonicæfòlia* in the form of the roots, and from *V. Gmeliniàna* in the form of the leaves, and straight, not recurved spur. Flowers of a violaceous-red colour.

Philippin Violet. Fl. May, June. Clt.? Pl. ¼ foot.

36 V. gmelinia'na (Rœm. and Schult. syst. 5. p. 354.) stigma marginate; roots fusiform, almost simple; leaves obovate-oblong, hairy, tapering into the footstalk at the base; stipulas adnate, ciliated? sepals ovate-oblong, rather obtuse. 4. H. Native in dry places in Dahuria and Siberia. V. fusifórmis, Smith, in Rees' cycl.—Gmel. sib. 4. p. 99. t. 49. f. 2. Flowers pale blue or purple, larger than those of *V. lanceolàta.*

Var. β, scorpiurifòlia (D. C. prod. 1. p. 294.) rather hispid; sepals acuminate, longer than in var. α; leaves obovate-oblong; capsules ovate-trigonal, rather obtuse; seeds dark reddish, with a white caruncle at the base. 4. H. Native of Siberia, at Nerschinsky-sawod, Fisch.

Var. γ, elongàta (Ging. mss.) leaves cordately elliptical. 4. H. Native of humid places near Irkoutck. Gmel. fl. sib. 4. p. 99.

Var. δ, cordifòlia (Ging. mss.) leaves cordate; sepals acuminate. 4. H. Native on the Ural mountains. V. suàvis, Fisch, in litt. Roots subdivided. Stigma depressed. Perhaps a species?

Gmelin's Violet. Fl. June, July. Clt. 1820. Pl. ¼ foot.

* * * * *Roots (or rhizomas) jointed.*

37 V. palu'stris (Lin. spec. 1324.) stigma marginate; roots articulated, scaly; leaves cordately kidney-shaped, smooth; stipulas broad-ovate, acuminated; sepals ovate-obtuse; 2 lateral petals with a hairy central line; capsules oblong, trigonal; seeds ovoid dark-greenish. 4. H. Native throughout Europe, in mossy bogs and humid meadows; plentiful in Britain, chiefly, though not exclusively, in the northern and mountainous counties.

Var. α, vulgàris (D. C. prod. 1. p. 294.) flowers pale blue; petals obovate. V. palústris, Smith, eng. bot. t. 444. Curt. lond. fasc. 3. t. 58.

Var. β, Pennsylvánica (D. C. prod. l. c.) flowers purplish; petals almost orbicular. 4. H. Native of North America. V. cucullàta, Bigel. in litt. Perhaps a distinct species.

Marsh Violet. Fl. May, June. Britain. Pl. ¼ foot.

38 V. bla'nda (Nutt. gen. 1. p. 150.) stigma capitate, marginate; roots jointed; leaves cordately-kidney-shaped, slightly pubescent on the under surface, pressed to the ground; stipulas ovate-lanceolate, acute; sepals linear-oblong, obtuse; petals smooth. 4. H. Native of North America, in wet places and bog-meadows, from New York to Carolina. V. blánda, Willd. hort. berl. 1. t. 24.? Flowers white, with a few blue lines, sweet-scented.

Pretty Violet. Fl. May, July. Clt. 1802. Pl. ¼ foot.

39 V. ROTUNDIFO'LIA (Michx. fl. bor. amer. 2. p. 150.) stigma capitate, round, recurved at the apex, but without a beak; roots jointed, scaly; leaves large and round, constantly pressed to the ground, with pubescent petioles, with the recess becoming at length closed, under surface glabrous; stipulas subulate-lanceolate; sepals oblong, narrow, obtuse; 2 lateral petals bearded and striated; spur almost obliterated. ♃. H. Native near Philadelphia, on the shady banks of Wishahikon-creek, always under the shade of *A'bies Canadénsis*; it has been found in similar situations in North Carolina. The flowers are of a pale yellow, and appear before the complete expansion of the leaves upon short peduncles; the 2 lateral petals are a little bearded, and striated with 3 stripes upon each, the uppermost one interrupted by a line of pubescence, the lowest petal very small, and also striated; the stripes are bifid, and crossed by two callous converging lines near the base.

Var. β, pàllens (Banks, herb. et D. C. prod. 1. p. 295.) glabrous; sepals acuminated. ♃. H. Native of Labrador and Kamtschatka. Perhaps the same as var. *α*? or perhaps a distinct species.

Round-leaved Violet. Fl. May, Sept. Clt. 1800. Pl. $\frac{1}{4}$ foot.

40 V. CLANDESTI'NA (Pursh. fl. amer. sept. 1. p. 173.) stigma marginate? roots jointed, scaly; leaves almost orbicular, bluntish, crenate-serrated, these serratures are glandular; peduncles branched, 2-8-flowered; petals linear, scarcely longer than the calyx. ♃. H. Native on the high mountains of Pennsylvania, in shady beech-woods, among rotten wood, and rich vegetable mould. This singular species differs from all the rest, in producing its flowers as it were under-ground, as they always are covered with rotten wood or leaves; they are of a chocolate brown, very small; the seed-vessel buries itself still deeper in the ground, and is large in proportion to the plant. The inhabitants know it by the name of *Heal-all*, being used by them in curing all kinds of wounds or sores. Pursh. According to Bigelow, the flowers are at first large yellow, but when the leaves become stately, or at a later period of growth, it produces small inconspicuous greenish flowers, and creeping stolons.

Clandestine Violet. Fl. June, Sept. Clt. 1800. Pl. $\frac{1}{4}$ foot.

41 V. VILLO'SA (Walt. fl. carol. p. 212.) pubescent; stigma not margined all round, beaked; trunk of root oblique, wrinkled; leaves roundish-cordate, crenate-serrated, pubescent on both surfaces; sepals oblong; stipulas lanceolate, toothed; lower petal beardless, 2 lateral ones bearded; capsules smoothish. ♃. H. Native of North America, on shady hills. Schwein. amer. journ. 5. no. 1. spec. 9. Flowers blue, elegantly striped and bearded with yellow down. Leaves purplish beneath, lying on the ground.

Villous Violet. Fl. June, July? Pl. $\frac{1}{4}$ foot.

42 V. LECONTEA'NA; smooth; leaves ovate, acuminated, crenated, sometimes rather villous above; petioles long, spotted with red; peduncles somewhat tetragonal, equal with or higher than the leaves, spotted; flowers sweet-scented; sepals lanceolate; petals all entire, green at the base, lateral ones sometimes rather pubescent at the base. ♃. H. Native of North America in humid woods, in the state of New York and New Jersey, and from Pennsylvania to Virginia. V. oblìqua, Pursh. fl. amer. sept. 1. p. 172? V. amœ'na, Le Conte, ann. lyc. new york, 2. p. 144. Flowers white, with purple and yellow veins.

Le Conte's Violet. Fl. April, May. Clt. Pl. $\frac{1}{2}$ foot.

43 V. SORO'RIA (Willd. hort. berl. 1. t. 72.) stigma depressed, not margined all round, beaked; leaves orbicularly-cordate, crenate-serrate, under surface glabrous, usually violaceous, upper surface villous; stipulas minute, awl-shaped; petals oblong, lower and 2 lateral ones bearded. ♃. H. Native of Pennsylvania, &c. in overflowed meadows. V. cordifòlia, Schwein and Torrey. V. villòsa, Nutt. gen. 1. p. 148. Flower reddish-blue, white at the base. Petioles and scapes hairy.

Var. β, Nuttállii; petals obovate; leaves thickish, cordate, acutish, lying on the ground; sepals short and narrow, smooth. ♃. H. Native in woods on the banks of Schuylkill, near Philadelphia. Peduncles longer than the leaves. V. villòsa *β*, cordifòlia, Nutt. gen. 1. p. 148.

Sister Violet. Fl. May, June. Clt. 1802. Pl. $\frac{1}{4}$ foot.

44 V. CORDA'TA (Walt. car. p. 219.) stigma? Leaves broad-cordate, acute, crenated, smooth; peduncles very long; sepals acute; lateral petals bearded. ♃. H. Native of North America. Flowers blue?

Cordate-leaved Violet. Pl. $\frac{1}{4}$ foot.

45 V. A'SPERA (Ging. mss. and D. C. prod. 1. p. 295.) rather hispid; stigma recurved, with a shortish beak, somewhat depressed at the top, naked; leaves profoundly cordate, crenate, pubescent, longer than the scapes; sepals linear, obtuse, hairy; stipulas setosely jagged; petals oval, 2 lateral ones much bearded; nectaries conical, falcate. ♃. F. Native of Upper Nipaul. Very like *V. hírta*, but differing in the form of the stigma. Flowers cream-coloured or almost white. A dwarf tufted herb.

Rough Violet. Fl. April, June. Clt. 1824. Pl. $\frac{1}{4}$ foot.

46 V. SE'RPENS (Wall. fl. ind. 2. p. 449.) smoothish; stigma marginate? stems slender; leaves profoundly-cordate; sepals lanceolate, acute; stipulas lanceolate, toothed; flowers minute; 2 lateral petals bearded in the middle; spur short, very blunt. ♃. F. Native of Nipaul. Perhaps the same as *V. rèpens*. Buchan in herb. Lamb.? Flowers white, with a feeble blue tinge, scentless.

Creeping Violet. Fl. April, June? Pl. $\frac{1}{2}$ foot.

§ 2. *Stigmas convex, immarginate below.*

* *Capsules turgid-roundish. Stems almost wanting.*

47 V. JAPO'NICA (Langsdorff, ex Fisch. in litt.) glabrous; leaves cordate; stipulas linear-lanceolate, jagged; sepals lanceolate, acute; spur thick, obtuse, straight, one half shorter than the petals. ♃. H. Native of Japan near Nagasaki. V. odoràta, Thunb. fl. jap. 326? Flowers blue.

Japan Violet. Fl. Ap. Jul. Clt. 1818. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

48 V. CANE'SCENS (Wall. fl. ind. 2. p. 450.) plant stemless, clothed with glaucous pubescence; leaves cordately-reniform, obtuse, stipulas fringed with long ciliæ; peduncles erect, longer than the leaves; sepals linear, acute; petals thrice as long as the calyx, the upper two wedge-shaped and puberulous at the base, two lateral ones rather narrower and bearded at the base. ♃. F. Native in Nipaul on Mount Nag-Urjoon. Flowers small, scentless, pale violet. Style flattish.

Canescent Violet. Fl. March, April. Pl. $\frac{1}{2}$ foot.

49 V. HI'RTA (Lin. spec. 1324.) plant villous or pubescent; stigma hooked, acute, naked; leaves cordate; sepals ovate, obtuse, with ciliated margins; stipulas with glandular teeth; 2 lateral petals bearded along the middle; spur somewhat conical; nectaries glabrous; capsules turgid, hairy; seeds turgid, brown. ♃. H. Native almost throughout the whole of Europe in groves and thickets. In England in Oxfordshire, Cambridgeshire, Essex, and Kent; at Marham, Norfolk; near Bury, Suffolk; on St. Vincent's Rocks, Bristol, on a chalky or limestone soil. Smith, engl. bot. t. 894. Curt. fl. lond. fasc. 1. t. 64. Fl. dan. t. 618. Flowers light greyish-blue, streaked with black, scentless. Scapes taller than the leaves, furnished with 2 narrow opposite bracteas below the middle. Stolons short, not rooting. This plant varies much in habit as well as in the shape of the leaves according to soil and situation.

Var. β, alpìna (D. C. prod. 1. c.) leaves broad-cordate, with a

short acumen; violaceous beneath the footstalks. ♃. H. Native in the Alps of Savoy at St. Bernard. There is a variety with the sinus more or less cut, and with the footstalks more or less dilated at the apex.

Var. γ, *álba* (D. C. prod. l. c.) leaves cordate, very minute; flowers white; spur lilac. ♃. H. Native on dry meadows. Seeds turgid, brown. Later leaves largest.

Var. δ, *scàbra* (D. C. prod. l. c.) leaves acuminated; sepals acute, ex Braun. ♃. H. Native about Salzburg. V. scàbra, Braun. in flora, 1820. p. 469.

Hairy Violet. Fl. April, May. Britain. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

50 V. ambi'gua (Walds. et Kit. hung. 2. p. 190.) stoloniferous leaves smooth, oblong-cordate; lobes inflexed, cucullate; sepals obtuse; 2 lateral petals bearded. ♃. H. Native of Hungary and Germany. Flowers blueish. Petioles winged.

Ambiguous Violet. Fl. April, June. Pl. creeping.

51 V. campe'stris (Bieb. fl. cauc. 1. p. 171.) stigma hooked, naked; leaves cordate, oblong, hairy; 2 lateral petals bearded in the middle; stolons none. ♃. H. Native of Tauria and Iberia in meadows and fields. V. hírta, Pall. ined. Perhaps the same as *V. Pyrenìaca* and *V. collìna*. Besser, cat. hort. crem. anno. 1816. p. 151. Very like *V. hírta*, but the leaves are narrower, less hairy, and on shorter petioles. Flowers truly sweet-scented, pale-purple. V. hírta β, frágrans, D. C. prod. 1. p. 295. Sepals obtuse. Root perpendicular.

Field Violet. Fl. June, July. Clt. Pl. $\frac{1}{4}$ foot.

52 V. Pyreni'aca (Ramond, in D. C. fl. fr. 4. p. 803.) stigma hooked, naked; leaves broad, somewhat cordate; footstalks dilated at the apex; sepals ovate, obtuse. ♃. H. Native of the Pyrenees on rocks. Flowers blue, sweet-scented. This is not a variety of *V. palústris* nor of *V. canìna*, but probably the same as *V. hírta, var. alpìna?* Seeds unknown.

Pyrenean Violet. Fl. April, June. Clt. 1817. Pl. $\frac{1}{4}$ foot.

53 V. hu'milis (H. B. et Kunth, nov. gen. amer. 5. p. 369. t. 492. f. 1.) very smooth; leaves roundish-ovate, obtuse, rounded at the base, truly cordate; stipulas dentately ciliated at the apex; calyxes acutish; stigma hooked, acute; petals all smooth; ovary smooth; spur short, rounded, spreading, with the appendages rounded at the apex, one half shorter than the cells of anthers. ♃. F. Native of Mexico near Real del Monte, at the height of 3218 feet. Flowers white, with yellow veins.

Dwarf Violet. Fl. April, July. Clt. 1824. Pl. $\frac{1}{4}$ foot.

54 V. Hookeria'na (H. B. et Kunth, nov. gen. amer. 5. p. 369. t. 492. f. 2.) very smooth; leaves kidney-shaped, profoundly cordate; stipulas dentately-ciliated; calyxes acute; stigma hooked, truncate at the apex; petals all smooth; ovary smooth; spur short, rounded, with the appendages rounded at the apex, one half shorter than the cells of anthers. ♃. F. Gathered along with *V. hùmilis*. Flowers violaceous.

Hooker's Violet. Pl. $\frac{1}{4}$ foot.

55 V. odora'ta (Lin. spec. 1324.) stigma hooked, naked; leaves roundish-cordate, crenate, smoothish; sepals ovate, obtuse; 2 lateral petals with a hairy line; spur very blunt; capsules turgid, hairy; seeds turbinate, whitish; stolons long, creeping, and rooting. ♃. H. Native in groves and hedges almost throughout the whole of Europe, and in Siberia, China, and Japan? In Britain frequent. Smith, engl. bot. t. 894. Curt. fl. lond. fasc. 1. t. 63. Fl. dan. t. 309. Sturn. deutch. fl. icon. good. Flowers sweet-scented, resembling that of *orise-root* or *Mignonette*.

M. Boullay has discovered *Violine*, which exists in all parts of the plant. It is an alkaline substance, and forms salts by its union with acids; it is soluble in alcohol, but hardly so in water. It is procured in the form of yellow powder. This substance is very active and poisonous according to M. Orfila.

Var. α, *vulgàris* (D. C. prod. 1. p. 296.) flowers deep-purplish-blue, pale and streaked in the mouth. The flowers of this plant impart their colour and flavour to aqueous liquors; a syrup made from the infusion has long had a place in the shops, and is said to be an agreeable and useful laxative for children, but it is chiefly valued as a delicate test of the presence of uncombined acids or alkalies, the former changing its blue to a red, and the latter to a green. There can be no doubt but this is the *ιον πορφυρεον* of Dioscorides, who speaks of the ivy-like leaves and very sweet-scented purple flowers, which he recommends for sore throats and for children in the falling sickness.

Var. β, *cærùlea* (Sweet, hort. brit. p. 37.) flowers blue.

Var. γ, *purpùreo-plèna* (Sweet, l. c.) flowers double, purple.

Var. δ, *cærùleo-plèna* (Sweet, l. c.) flowers double, blue.

Var. ε, *pállido-plèna* (Sweet, l. c.) flowers double, pale-blue. This variety is commonly called *Neapolitan Violet* in gardens.

Var. ζ, *álba* (D. C. prod. 1. p. 296.) flowers white. Plentiful about Dorking in Surrey, in hedges. V. álba, Bess. fl. gall. 1. p. 171. This is probably a distinct species.

Var. η, *álbo-plèna* (Sweet, l. c.) flowers double, white.

Var. ι, *variegàta* (D. C. prod. l. c.) flowers variegated, Tourn. inst. 419.

Var. λ, *cornùta;* all the petals horned, like that of *Linària pilòria*.

Sweet-scented Violet. Fl. Mar. May. Brit. Pl. $\frac{1}{2}$ ft. trailing.

56 V. sua'vis (Bieb. suppl. p. 162.) stigma hooked, naked; leaves reniform-cordate, crenate, pubescent; sepals obtuse; 4 upper petals narrowest, lower one emarginate, 2 lateral ones with a hairy line; stolons long, creeping, and rooting. ♃. H. Native of Tauria. Flowers pale-blue, white at the base, sweet-scented.

Sweet Violet. Fl. Mar. May. Clt. 1820. Pl. $\frac{1}{2}$ foot.

* * *Capsules oblong, trigonal. Perhaps the 2 lateral petals of all are bearded.*

† *Stems herbaceous.*

57 V. Kroke'ri (Gmel. syst. 412.) stigma hooked; stem procumbent; leaves cordately kidney-shaped, bluntish; sepals lanceolate, acute; capsule trigonal, pubescent. ♃. H. Native of Bohemia. V. purpuráscens, Schm. fl. boh. 1. cent. 3. p. 49. t. 311. Flowers purplish.

Kroker's Violet. Fl. May, June. Clt. 1820. Pl. procumbent.

58 V. uligino'sa (Bess. prim. fl. gall. 169.) stigma somewhat reflexed, naked; stems stoloniferous, and are as well as the footstalks glabrous; leaves ovate, obtuse, somewhat cordate at the base; spur short, conical; sepals obtuse. ♃. H. Native of Parma, also of Carniolia, Carinthia, Lusatia in bogs. V. uliginòsa, Schrad. in Rœm. et Schult. syst. p. 357.; but this plant is said by Link to be without runners. Perhaps *V. scaturiginòsa*, Wallr. sched. 1. p. 97.? Flower purplish. Petals naked.

Swamp Violet. Fl. April, May. Clt. 1823. Pl. $\frac{1}{4}$ foot.

59 V. Langsdo'rffii (Fisch. ined. D. C. prod. 1. p. 296.) stigma marginate? somewhat reflexed, obtuse; stems at length elongated, with the base oblique; leaves roundish-cordate, smoothish; stipulas ovate, setaceously acuminated, and with bristly teeth at the base; sepals ovate, rather acute; limb of lower petal somewhat rhomboidal; spur broadly saccate, very blunt. ♃. H. Native of the island of Unalaschka. Flowers blue.

Var. α, almost stemless; capsules oblong-trigonal, obtuse; seeds large, somewhat pear-shaped, brown. V. odoràta, var. in herb. Banks.

Var. β; caulescent? V. pedunculàris, Langsdorff ex Fisch. in litt.

Langsdorff's Violet. Fl. June, July. Clt. 1823. Pl. $\frac{1}{2}$ foot

60 V. mira'bilis (Lin. spec. 1326.) stigma somewhat reflexed, naked; stems rigid and are as well as footstalks villous;

leaves smooth, cordately kidney-shaped, acuminated, crenate; stipulas awl-shaped, entire; 3 large sepals, oblong-acuminate; spur cylindrical, obtuse, long; valves of capsule very much pointed; seeds pear-shaped, brown. ♃. H. Native of woods and bushy places of mountains nearly throughout the whole of the temperate and colder parts of Europe, particularly Germany and Sweden, also of Siberia. Flowers pale blue; the lower petal streaked with violaceous veins. The specific name alludes to the fruit being produced by apparently imperfect flowers, but this occurs in several other species of *Violet*.

Var. α, cauléscens (D. C. prod. 1. p. 297.) radical flowers corollate, usually abortive, cauline ones petalless, bearing seeds. Jacq. fl. aust. 1. p. 19. Dill. elth. 408. t. 303. f. 390.

Var. β, acaúlis (D. C. prod. l. c.) peduncles all radical, Gmel. fl. bad. 3. p. 519. in obs.

Wonderful Violet. Fl. July, August. Clt. 1732. Pl. 1 to 1¼ foot.

61 V. Magella'nica (Forst. in comm. Goett. 9. p. 41. t. 8.) stigma? stem very short; leaves kidney-shaped, hairy; stipulas lanceolate, acute, entire; sepals ovate-lanceolate, acuminated; spur saccate. ♃. F. Native of the Straits of Magellan. Flowers large, yellow, streaked with brown veins. Petals smooth on the inside, or the 2 lateral ones are bearded. Spur short, blunt.

Magellan Violet. Pl. ¼ foot.

62 V. macula'ta (Cav. icon. 6. p. 20. t. 539.) stigma rather flat at the apex; stem short; leaves ovate, crenate, smooth, spotted beneath; stipulas ovate, fringed; sepals lanceolate, acuminated; stamens emarginate at the apex; spur short, obtuse. ♃. F. Native of Chili as well as of the Straits of Magellan. Petals much bearded on the inside with clubbed pili, the large petal obcordate, streaked with red lines. Flowers yellow. In the specimens we have seen the leaves are cordate and the 2 lateral petals bearded.

Var. β, megaphýlla (D. C. mss. and prod. 1. p. 297.) trunk of root long, terete; leaves elliptical or roundish-ovate. ♃. F. Native in woods at Duclos Bay, in the Straits of Magellan. V. pyrolæfòlia, var. α, Poir. dict. 8. p. 636, exclusive of the country. V. glandulòsa, Dombey. herb. V. lùtea megaphýllos, Commers.

Spotted-leaved Violet. Pl. ½ foot.

63 V. microphy'lla (Poir. dict. 8. p. 636.) stigma rather flat at the apex; stem none; trunk of root very short; leaves ovate-lanceolate, crenulated, thickish, pubescent; petioles stipulate at the base; scape filiform, exceeding the leaves; sepals acute; lateral petals bearded; spur obtuse. ♃. F. Native of Patagonia on hills about Boucault Bay. V. pyrolæfòlia, Poir. dict. l. c. V. lùtea microphýllos, Commers. herb. Flowers yellow.

Small-leaved Violet. Pl. ¼ foot.

64 V. Commerso'nii (D. C. mss. and prod. 1. p. 297.) stigma —? stem very short; stipulas broad-ovate, entire? sepals oblong-lanceolate, bluntish. ♃. F. Native on the higher mountains in the Straits of Magellan, above Fort Gallant. Flowers white. Lateral petals bearded?

Commerson's Violet. Pl. ¼ foot.

65 V. ra'dicans (D. C. mss. and prod. 1. p. 297.) trunk of root horizontal, fibry; stigma marginate, short-beaked; leaves ovate-lanceolate, tapering abruptly at the base or somewhat cordate, serrated; stipulas linear, awl-shaped, with bristly serratures; sepals linear, acute; flowers minute; petals beardless? lower one smaller; spur almost none. ♃. H. Native of South Carolina. Flowers yellowish? or blue.

Rooting Violet. Fl. Ju. July. Clt. 1823. Pl. ¼ foot.

66 V. glandulífera (Wall. fl. ind. 2. p. 452.) stigma —? stems erect, very slender; leaves broad, kidney-shaped, toothed, hairy, dotted with glands underneath, the lower ones shorter than the petioles, the uppermost much longer; peduncles axillary, as long or longer than the footstalks; stipulas ovate, entire, glandular; spur very short. ♃. H. Native of the frigid regions of Gosaingsthan. Perhaps belonging to this section.

Gland-bearing Violet. Fl. July. Pl. ½ foot.

67 V. Hamiltonia'na (D. Don. fl. nep. p. 206.) plant smooth; stems creeping; leaves kidney-shaped, crenulated; stipulas lanceolate, acute, toothed; peduncles hardly longer than the leaves; sepals lanceolate, acute; spur short; throat bearded. ♃. F. Native in Nipaul. Perhaps belonging to this section.

Hamilton's Violet. Pl. ¼ foot.

68 V. arcua'ta (Blum. bijdr. ex. Schlecht. Linnæa. 1. p. 645.) stems decumbent, smooth; leaves kidney-shaped-orbicular, acutish, serrated, with the veins pubescent; stipulas ovate-oblong, ciliated, 3-nerved, somewhat serrated at the base. ♃. S. Native of Java. Flowers blue? Stigma unknown.

Arched Violet. Pl. decumbent.

69 V. inconspi'cua (Blum. l. c.) style incurved; capsules elliptically-trigonal; radical leaves hastately-cordate, crenulated, tapering a little into the petiole. ♃. S. Native of Java. Perhaps this and the preceding belong to section *Leptídium*.

Inconspicuous Violet. Pl. ¼ foot.

70 V. stria'ta (Ait. hort. kew. ed. 1. vol. 3. p. 290.) stigma papillose, rather reflexed, with a bluntish beak; stems branched, flexuous; leaves ovate-cordate, acuminated, smoothish; stipulas ovate-lanceolate, dentately-jagged; sepals ovate-lanceolate, ciliated, emarginate behind; capsules shortish, with rather obtuse valves, 3-7-seeded. Seeds roundish, rufous. ♃. H. Native in woods from Pennsylvania to Carolina. V. débilis, Mich. not of Pursh, many species are confused under V. striàta. See Schwein. amer. journ. Flowers whitish streaked with purple veins. Two lateral petals bearded.

Streaked-flowered Violet. Fl. June, July. Clt. 1772. Pl. ¾ ft.

71 V. dicho'toma (Moc. et Sesse, mex. ined. and D. C. prod. 1. p. 297.) stigma? stem dichotomous; branches spreading; leaves cordate; stipulas oblong, setosely-jagged at the top; sepals lanceolate, acute. ♃. G. Native of Mexico. Very nearly allied to *V. striàta*. Flower violaceous. V. pedunculàta, Lamb. herb.

Dichotomous-branched Violet. Pl. 1 foot.

72 V. ochroleu'ca (Schwein. amer. journ. l. c.) stigma tubular, curved a little, pubescent on the summit, stems assurgent; leaves cordate, acuminated, serrated, with the nerves rather pubescent on the under side; stipulas oblong, large, remotely toothed; sepals very narrow-lanceolate, acuminated; flowers large; lateral petals densely bearded; spur long. ♃. H. Native of North America, along the river called Dam-river, and in the Saura mountains, but according to Pursh, from Pennsylvania to Virginia in shady woods. Flowers cream-coloured, with purple veins. V. striàta, Pursh. fl. bor. amer. 1. p. 174. Nutt. gen. 1. p. 150. Perhaps only a variety of *V. striàta*.

Cream-coloured-flowered Violet. Fl. May, July. Clt. 1772. Pl. ½ foot.

73 V. Muhlenbergia'na (Ging. mss. and D. C. prod. 1. p. 297.) stems flexuous, assurgent, simple; leaves cordate-orbicular, acuminated, crenated, smooth; spur very short, obtuse, stipulas oblong, toothed; sepals subulate; lateral petals bearded; root fascicular. ♃. H. Native of Pennsylvania and New Jersey. V. uliginòsa ex Muhl. cat. no. 18, not of Schrad. nor Bess. See Schwein. l. c. Perhaps a variety of *V. dichótoma*. V. conspérsa, Reichb. Flowers blueish. Spur long, obtuse. Stigma beaked, ciliated below.

Muhlenberg's Violet. Fl. May, Jul. Clt.? Plt. ½ foot.

74 V. Lewisia'na (Ging. mss. and D. C. prod. 1. p. 298.) stems decumbent, stoloniferous; leaves kidney-shaped and cordate; stipulas large, ovate, very long and densely ciliated; flowers small, lower petal very minute, equal with the lateral

ones, which are furnished each with a white beard; spur shortish. ♃. H. Native of North America, on rocks in the Saura mountains. V. rèpens, Schwein. l. c. Flowers cream-coloured.

Lewis's Violet. Pl. decumbent.

75 V. RIVINIA'NA (Rchb. icon. t. 75. 94, 95.) stem erect, branched; leaves profoundly cordate, ovate, crenated, pubescent above; stipulas linear, fringed; peduncles elongated; superior appendages of calyx angular, permanent; capsule acute. ♃. H. Native of Europe in groves. This species differs from *V. canìna* in the stipulas being finely fringed and the leaves being profoundly cordate, as well as in the capsule being acute. Perhaps *V. sylvéstris* of Kit. and *V. cordàta* of Willd. are identical with this species. Spur curved?

Rivinus's Violet. Fl. April, Aug. Pl. $\frac{1}{4}$ foot.

76 V. CANÌNA (Lin. spec. 1324.) stigma papillose, somewhat reflexed; adult stems ascending, branched, glabrous; leaves oblong, heart-shaped; stipulas acuminated, serrated, or finely jagged; bracteas awl-shaped, entire; sepals awl-shaped; peduncles glabrous; capsules elongated, with acuminated valves; seeds pear-shaped, brown. ♃. H. Native in woods, hedges, thickets, and heathy grounds nearly throughout the whole of Europe, Japan, Persia, and the North-west coast of North America; also in the Canary Islands; common in Britain. Smith, eng. bot. t. 620. Curt. lond. fasc. 2. t. 61. fl. dan. t. 1453. V. sylvéstris, Lam. fl. fr. 2. p. 680. V. neglécta, Schm. fl. boh. no. 1. p. 51. t. 313. but not of Bieb. There are many varieties of this plant differing in height and form of leaves. Flowers blue, with purple lines in the mouth, and a greenish, white, abrupt spur.

Var. β, *mìnor* (D. C. fl. fr. suppl. p. 617.) stem very short; leaves kidney-heart-shaped, smoothish. ♃. H. Native of the Pyrenees and Swiss Alps.

Var. γ, *álba* (D. C. prod. 1. p. 298.) flowers white. ♃. H. Native of Britain. V. canìna flore albo, Dill. in Ray's synops. 364?

Var. δ, *macrántha* (D. C. prod. 1. p. 298.) flowers twice or thrice larger than in the other varieties.

Var. ε? *Japónica* (D. C. prod. 1. c.) leaves scarcely cordate at the base. ♃. H. Native of Japan near Nagasaki.

Dog Violet. Fl. Apr. Aug. Britain. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

77 V. FLAVICÓRNIS (Smith, engl. fl. 1. p. 304.) stigma —? stems ascending, woody, somewhat angular, much branched; leaves cordate, coriaceous, smooth and even; stipulas and bracteas fringed; sepals lanceolate; peduncles erect; capsules shorter and rounder than in *V. canìna*. ♃. H. Native of England in pastures, and on banks in a gravelly soil, about Mitcham, Surrey, and Norwich. Dill. in Ray's synops. 364. t. 24. f. 1. Flowers half the size of *V. canìna*, of a rather deeper blue, with a short, blunt, yellowish spur.

Yellow-spurred Violet. Fl. May, Jun. England. Pl. $\frac{1}{4}$ foot.

78 V. NEGLE'CTA (Bieb. fl. taur. 1. p. 172.) stigma —? stem erect, angular; leaves cordate, smooth, with rather scabrous margins; flowers all corollate; stipulas toothed on one side only; peduncles furnished with bracteas in the middle. ♃. H. Native of Tauria on the high mountains of Tschaturdag and Agudag, in woods. Larger than *V. canìna*, and the flowers are constantly white.

Neglected Violet. Fl. May, June. Clt. 1817. Pl. $\frac{1}{4}$ foot.

79 V. EPI'PSILA (Ledeb. in Link, enum. 1. p. 241.) stigma flat, with an incurved beak; stem trailing; leaves cordate-roundish, scarcely acuminated, glabrous; segments of calyx obtuse, drawn out at the base into bearded auricles; spur short, blunt. ♃. H. Native of Siberia. Corolla pale blue, with the 2 lateral petals slightly bearded. The name is probably derived from επι, *upon*, and ψιλικος, *naked, lightly armed*, in allusion to the sepals being bearded.

Hairy-sepalled Violet. Fl. May, Jul. Clt. 1822. Pl. $\frac{1}{4}$ foot.

80 V. PALMA'RIS (Hamilt. mss. ined. and D. C. prod. 1 p. 298. D. Don, prod. p. 205.) stigma —? stems branched; branches weak, sarmentose; leaves cordate, acuminated, crenated, rather pilose, on long petioles; stipulas linear-lanceolate, somewhat serrated; sepals lanceolate, acute, glabrous, bidentate at the base; petals elliptical, puberulous above; spur saccate. ♃. F. Native of Nipaul at Narainhetty, and near Bheempedi. Flowers yellow.

Hand-high Violet. Fl. Apr. Dec. Clt. 1824. Pl. $\frac{1}{2}$ foot.

81 V. ADU'NCA (Smith, in Rees' cycl.) stigma —? stem simple, ascending; leaves somewhat heart-shaped, obtuse, crenate, downy, dotted; stipulas fringed; peduncles longer than the leaves; nectaries hooked; sepals much drawn out at the base; spur long, recurved; two lateral petals downy at the base. ♃. H. Native of North America on the west coast. Habit of *V. canìna*, and the whole herb is minutely speckled like it, but is easily distinguished by the strongly recurved spur, as well as in the whole plant being more or less downy. Flowers blue?

Hooked-spurred Violet. Pl. $\frac{1}{4}$ foot.

82 V. DIFFU'SA (Ging. mss. and D. C. prod. 1. p. 298.) stigma somewhat capitate, with a very short, blunt, naked, beak; stems simple, decumbent; leaves ovate, crenate, tapering into the footstalks, with the nerves and margins pilose; stipulas lanceolate, toothed, ciliated; sepals lanceolate, acute; nectaries broad at the base, emarginate above on the outside. ♃. F. Native of Nipaul. Very like *V. Nuttállii* of Pursh. Flowers yellow.

Diffuse Violet. Pl. $\frac{1}{4}$ foot.

83 V. PURPURA'SCENS (Schmidt, fl. boh. ex Spreng. syst. 1. p. 799.) stem procumbent; leaves reniform, cordate, bluntish; calyx acute; capsule pubescent; spur short, blunt. ♃. H. Native of Bohemia. Flowers purplish. Stigma unknown.

Purplish Violet. Pl. procumbent.

84 V. FRA'GRANS (Sieb. ex Spreng. syst. 1. p. 799.) stem simple, 1-flowered; leaves spatulate-oblong, stalked, nerveless, rather villous; sepals acute; spur short. ♃. H. Native of Crete. Flowers blue? sweet-scented. Stigma unknown.

Fragrant Violet. Pl. $\frac{1}{4}$ foot.

85 V. ROSTRA'TA (Pursh. fl. amer. sept. 1. p. 174.) stigma beaked; beak somewhat erect, acute, naked; stems simple, decumbent; leaves cordate, glabrous, serrated; stipulas lanceolate, awl-shaped, serrately-ciliated, glabrous; spur straight, obtuse, longer than the corolla. ♃. H. Native on shady rocks near Easttown, Pennsylvania, and on the Alleghany mountains. Flowers pale-blue, externally purple; petals all beardless; stigma clavate, without a beak. (Nutt.) Peduncles long.

Beaked-spurred Violet. Fl. May, June. Pl. $\frac{1}{4}$ foot.

86 V. DE'BILIS (Pursh, fl. amer. sept. 1. p. 174. not of Michx.) stigma papillose, recurved, beaked; stems almost simple, decumbent; leaves reniform-cordate, acutish, smoothish, serrulate or crenate; stipulas lanceolate, serrate-ciliated; sepals lanceolate, glabrous; petals oblong, 2 lateral ones bearded; spur long. ♃. H. Native in low grounds from Pennsylvania to Carolina. V. canìna, Walt. fl. carol. 219. Flower small, pale-blue.

Weak-stemmed Violet. Fl. May, July. Clt. 1820. Pl. $\frac{1}{4}$ foot.

87 V. ARENA'RIA (D. C. fl. fr. 4. p. 806.) glaucous, pubescent; stigma papillose, somewhat recurved; stems simple, rather erect; leaves cordate-roundish; stipulas erect, ciliately-serrated; sepals lanceolate-oblong, acute; capsules turbinately-elliptical, obtuse, pubescent; seeds ovate, chesnut-coloured. ♃. H. Native of sandy places in Vallais, Alps of Piedmont, Provence, about Moscow, and in the Caucasus. V. Allìoni, Pio. diss. p. 20. t. 1. f. 2. V. glaúca, Bieb. suppl. p. 165? V. rupéstris, Schm. fl. boh. cent. 3. t. 1. p. 50. t. 312.? V. pusílla, Schleich. in litt. V. lívida, Kit. V. nummularifòlia, Schleich. Plant glaucous. Flowers blue. Spur obtuse.

Var. β, aprìca (D. C. prod. 1. p. 298.) very small, and almost stemless. ♃. H. Native on hills at Lobenheim and Benstadt. V. hírta aprìca, Spreng. nov. prov. 43. no. 97.

Sand Violet. Fl. May, July. Clt. 1823. Pl. ¼ foot.

88 V. sarmentòsa (Bieb. fl. taur. 1. p. 172.) hairy; stigma? stem filiform, undivided, procumbent; leaves roundish, hairy, crenate; stipulas small, toothed; peduncles shorter than the leaves; sepals awl-shaped. ♃. H. Native of Caucasus. V. arenària γ sarmentòsa, D. C. prod. 1. p. 298. Flowers blue. Spur obtuse, short.

Sarmentose Violet. Fl. May, July. Clt. Pl. decumbent.

89 V. rupe'stris (Schmidt. fl. boh. ex Spreng. syst. 1. p. 799.) stem simple, pruinose, pubescent; leaves cordate-roundish, smoothish, crenulated; stipulas lanceolate, serrated. ♃. H. Native of Bohemia. Flowers blue. Stigma unknown.

Rock Violet. Fl. May, July. Pl. ¼ foot.

90 V. pu'mila (Vill. dauph. 2. p. 266. cat. strasb. p. 288. t. 5.) smoothish; stigma papillose, somewhat reflexed; stems branched, diffuse, procumbent; leaves ovate-lanceolate; footstalks marginate; stipulas ovate-lanceolate, toothed or cut; spur cylindrical, somewhat recurved at the apex, obtuse, yellowish, scarcely the length of sepals; valves of capsule rather erect, glabrous, truncate at apex; seeds ovate, of a black-chesnut colour. ♃. H. Native of Dauphiny in Vascony; on dry heaths in Germany, Switzerland, and Piedmont. Flowers pale-blue, with a hairy throat.

Var. α, lancifòlia (D. C. prod. 1. p. 299.) leaves lanceolate, gradually tapering into the footstalk at the base. V. lancifòlia, Thore, chlor. land. 357.

Var. β, ericetòrum (D. C. prod. 1. c.) leaves truncate at the base or somewhat cordate, but tapering abruptly into the footstalk. Native of turfy heaths. V. ericetòrum, Schrad. ined.

Var. γ, littoràlis (D. C. prod. 1. c.) stem elongated; leaves cordate, ovate; flowers apetalous. Native on the coast of the Baltic sea near Warnemunde. V. littoràlis, Spreng. nov. prov. p. 43.

Dwarfish Violet. Fl. May, June. Clt. 1818. Pl. ¼ foot.

91 V. Schmidtia'na (Rœm. et Schult. syst. 5. p. 363.) stigma hooked; leaves cordate, acuminate, rather crenate; bracteas approximating the flower; lower petal truncate. ♃. H. Native of Bohemia and Austria. V. nummulàrium, Schmidt. boh. no. 246. Stoloniferous. Spur short. Flowers blue.

Schmidt's Violet. Fl. May, Jul. Clt.? Pl. ¼ foot.

92 V. monta'na (Lin. spec. 1325.) smooth; stigma papillose, somewhat reflexed; stems simple, erect; lower leaves cordate, upper ones ovate, acute; footstalks marginate; stipulas oblong, toothed, or cut on one side; 2 lateral petals bearded; spur conical, truncate, erect, greenish, shorter than the acute sepals; valves of capsule arched, rather acute; seeds ovate, of a chesnut-colour. ♃. H. Native of the temperate parts of Europe and Siberia, particularly Lapland, Austria, Germany, and on mount Baldo. Sims, bot. mag. 1595.—Riv. t. 119.—Morr. hist. 2. p. 475. sect. 5. t. 7. f. 7. Flowers pale-blue.

Var. α, stricta (D. C. prod. 1. p. 299.) stems strict; lower leaves cordate, smooth. V. stricta, Horn. hafn. V. Hornemanniàna, Rœm. et Schult? V. montàna α, fl. fr. 4. p. 807. Native of mountainous meadows and thickets.

Var. β, pubéscens (D. C. prod. 1. c.) stems strict; lower leaves cordate, pubescent. V. erécta, Gerard. in litt.

Mountain Violet. Fl. May, July. Clt. 1683. Pl. 1 foot.

93 V. persicifòlia (Roth. Hoffm. fl. germ. 311.) puberulous; stigma papillose, somewhat reflexed; stem simple, erect, rather flexuous; leaves oblong-lanceolate, obtuse, serrated, smoothish, running into the petiole at the base; stipulas large, cut; sepals ovate-lanceolate; spur short, blunt; 2 lateral petals bearded. ♃. H. Native of Germany and Siberia. Flowers blue. V. montàna β, persicifòlia, D. C. prod. 1. p. 299. V. praténsis. Mer. et Koch. This species differs from *V. montàna*, in the leaves always tapering gradually into the petioles, not cordate at the base.

Peach-leaved Violet. Fl. May, July. Clt. 1683. Pl. 1 ft.

94 V. la'ctea (Smith, fl. brit. 1. p. 247.) smooth; stigma papillose, somewhat reflexed; stems ascending, simple; leaves ovate-lanceolate, bluntish, lower ones small, ovate; footstalks marginate; stipulas jagged; sepals long, linear. ♃. H. Native on mountainous boggy heaths in Switzerland, France, and Britain; on the sides of bogs on Waterdown forest, near Tunbridge, at Pendarvis, Cornwall; and in hilly pastures near Peebles, Scotland. Smith, engl. bot. t. 445. V. Lusitánica, Brot. phyt. p. 39. t. 17. V. montàna γ, láctea, D. C. prod. 1. p. 299. V. stagnìna, Kit. Flowers milk-white, or of a very pale-blue, with purplish streaks. Two lateral petals bearded.

Milk-coloured-flowered Violet. Fl. May, June. Britain. Pl. ¼ foot.

95 V. Ru'ppii (All. pedm. 2. no. 1646. t. 26.) smooth; stigma papillose, somewhat reflexed; stems procumbent; lower leaves cordate, upper ones lanceolate; footstalks marginate; stipulas jagged; sepals lanceolate, acute. ♃. H. Native of the Alps of Piedmont. Lod. bot. cab. t. 686. V. cordàta, Willd.? V. Brossonetiàna, Rœm. et Schult. Flowers pale-blue or white.

Ruppius's Violet. Fl. May, June. Clt. 1822. Pl. procumbent.

96 V. lancifòlia (Besser, gal. no. 256.) stem erectish; leaves cordate-oblong, crenulated, rather pilose, dotted; stipulas lanceolate, toothed; sepals acute; spur emarginate, 2-lobed; petals bearded. ♃. H. Native of Podolia. V. floribúnda, Fisch, mss.? Flowers blue. Stigma unknown.

Lance-leaved Violet. Pl. ¼ foot.

†† *Stems shrubby.*

97 V. decu'mbens (Lin. fil. suppl. 397.) stigma hooked, naked; stems much branched, procumbent; leaves linear, very narrow, entire, crowded; stipulas linear-awl-shaped, adhering; spur tubular, obtuse, straight, scarcely the length of sepals. ♃. G. Native of the Cape of Good Hope on Hottentot mountains. Flowers blue, with a pale-green spur.

Decumbent Violet. Fl. June, July. Clt. 1819. Shrub decumbent.

98 V. scrotifórmis (D. C. mss. and prod. 1. p. 299.) stigma? stems branched; leaves linear, bluntish, entire; lower ones remote; stipulas awl-shaped, adhering; spur saccate; auricles scarcely exceeding the sepals. ♄. G. Native of the Cape of Good Hope. Flowers pale-blue.

Scrotum-formed Violet. Fl. June, July. Shrub ½ foot.

99 V. arbore'scens (Lin. spec. 1325.) stigma hooked, naked; stems branched, erect, roundish, pubescent; leaves lanceolate, tapering to the base; stipulas oblong, adhering; spur cucullate, obtuse, scarcely exceeding the auricles of the calyx; valves of capsule boat-shaped, obtuse, few-seeded; seeds ovate, and before the opening of the capsule they are of a darkish-purple, afterwards quite black, with white caruncles. ♄. G. Native among stones and in the fissures of rocks and amongst gravel, in the south of Europe and north of Africa. Flowers pale blue.

Var. α, linearifòlia (D. C. prod. 1. p. 299.) covered with pruinose papillæ; leaves long, linear, entire. Native of Corsica.

Var. β, integrifòlia (D. C. prod. 1. c.) leaves lanceolate, entire. Native in the sand on the shores of the Mediterranean, and on rocks in Spain. V. Hispánica frúticans, Barrel. icon. t. 568.

Arborescent Violet. Fl. April, May. Clt. 1779. Shrub 1½ ft.

100 V. suberòsa (Desf. atl. 2. p. 313.) stigma hooked, naked; stems branched; branches usually decumbent, tubercled; leaves narrow-lanceolate, serrated, smooth, tapering into the petiole at the base, crowded on the tops of the branches; sti-

pulas awl-shaped, entire; spur obtuse, very short. ♄. G. Native of the north of Africa in fissures of rocks. V. arboréscens γ serratifòlia, D. C. prod. 1. p. 299. Flowers small, pale-blue, sometimes white.

Var. β, *latifòlia;* leaves rhomboidal-spatulate, remotely-toothed. ♄. G. V. arboréscens δ, D. C. prod. 1. p. 299.

Corky Violet. Fl. April, May. Shrub decumbent.

101 V. arbòrea (Forsk. fl. yem. CXX.) stigma? stem round at the base, angular at the top, erect, simple; leaves oblong, pointed at both ends, remotely toothed; stipulas awl-shaped, entire; spur very blunt, small. ♄. F. Native of Arabia in Yemen. Perhaps the same as *V. suberòsa*. Flowers probably pale-blue.

Tree Violet. Fl. April, June. Shrub 1½ foot.

Sect. II. Dischi'dium (from δις, *dis*, twice, σχιζω, *schizo*, to cut; in allusion to the 2-lobed stigma.) Ging. mss. D. C. prod. 1. p. 300. Stigmas without a beak, more or less 2-lobed at the apex, with a little hole situated between the lobes. Style tapering from the top to the bottom. Seeds oblong, approximate. Torus flattish. Capsules usually trigonal, few-seeded. Seminal leaves usually roundish. Small stemless plants, or with very short stems. Petals of all probably smooth.

102 V. pygmæ'a (Poir. dict. 8. p. 630.) stigma 2-lobed? lobes diverging; trunk of root thick, perpendicular; leaves much crowded, linear, acute, sessile, with scabrous margins; sepals linear; spur shortish; petals apiculate, smooth. ♃. H. Native on the Andes of Peru in the coldest places. V. alpìna, Ruiz, et Pavon, in herb. Deless. ined. Flowers apparently purple.

Pygmy Violet. Pl. 1 inch.

103 V. coty'ledon (Ging. mss. and D. C. prod. 1. p. 300.) stigma bifid; lobes reflexed; trunk of root thick, twisted; leaves much crowded, rhomb-spatulate, tapering at the base into the footstalk a long way, smooth, with cartilaginous entire margins; sepals linear; spur very short. ♃. G. Native on high mountains in Chili. Capsule trigonal, oblong, with the peduncles spirally twisted at the top; seeds ovate, 9-10, dark. Flowers probably purple.

Cotyledon Violet. Pl. ¼ foot.

104 V. tridenta'ta (Menzies, ined. and D. C. prod. 1. p. 300.) stigma? stems much branched, procumbent; leaves crowded, obovate-wedge-shaped, 3-toothed at the apex, coriaceous, smooth; sepals ovate, obtuse; spur very short. ♄. F. Native of Statenland on the peaks of mountains among snow. A tufted plant, more resembling *A. saxífraga* than *A. vìola*.

Three-toothed-leaved Violet. Shrub ¼ foot.

105 V. Wallichia'na (Ging. mss. and D. C. prod. 1. p. 300.) stigma bifid? lobes lamellated, divaricating; leaves reniform or cordate, hairy on the nerves; stipulas lanceolate, denticulated; sepals awl-shaped; spur awl-shaped, length of petals. ♃. H. Native of Nipaul towards the summit of Sheopore. Habit of *V. biflòra*. Flowers like those of *V. rostràta*. V. renifórmis, Wall. fl. ind. 2. p. 451. Stem beset with a few shining hairs. Spur jointed, descending; nectary elongated, capillary; lower petal obovate-wedge-shaped, apiculated. Flowers small, yellow, sweet-scented.

Wallich's Violet. Pl. 2 inches.

106 V. biflòra (Lin. spec. 1326.) stem erect, about 2-flowered; stigma bifid; lobes thick, diverging; leaves reniform, serrated, smooth; stipulas ovate; sepals linear; petals smooth; spur very short; seeds round-ovoid, brownish, obscurely dotted. ♃. H. Native on humid mountains almost throughout the whole of Europe, Siberia, and the western coast of North America. Sims, bot. mag. 2089. Fl. dan. t. 46.—Pluk. alm. t. 233. f. 7. and t. 234. f. 1. Flowers small, yellow, with the lip streaked with black. Roots creeping. There is a variety of this plant bearing only one flower on each stem. See J. Bauh. hist. 3. p. 545. f. 1.

Two-flowered Violet. Fl. April, May. Clt. 1752. Pl. 3 inches.

107 V. Caleya'na; caulescent; stems slender, spotted; leaves reniform-cordate, or cordate, mucronulate, crenated; stipulas lanceolate, acute, with one tooth on each side at the base; peduncles longer than the leaves; sepals lanceolate, entire, acute; petals smooth; spur a hollow pouch. ♃. F. Native of New Holland. Habit of *V. biflòra* and the flowers are about the same size. Stigma unknown.

Caley's Violet. Pl. ¼ to ½ foot.

Sect. III. Chamæmela'nium (from χαμαι, *chamai*, dwarf, and μελας μελανος, *melas melanos*, black, in opposition to the next section.) Ging. mss. and D. C. prod. 1. p. 300. Stigma round, capitate, ornamented on both sides below with a fascicle of hairs, and with a minute sublateral hole at the tip. Style compressed, clavate. Stamens oblong, approximate. Torus flattish. Capsules usually trigonal. Seminal leaves usually roundish. Two lateral petals bearded at the base.

108 V. tripartì'ta (Ell. sket. 1. p. 302.) leaves 3-5, lobed, pubescent; lobes lanceolate-toothed; stipulas ovate, entire or serrulated; sepals acute. ♃. H. Native of Georgia near Athens. Flowers yellow, on long slender peduncles. Perhaps V. hastàta var. β villòsa of Le Conte.

Three-parted-leaved Violet. Fl. May, July. Clt. 1823. Pl. ¼ foot.

109 V. Nutta'llii (Pursh, fl. amer. sept. 1. p. 174.) smooth; stem simple, erectish; leaves lanceolate-ovate, entire or obscurely toothed, tapering down the footstalk, with the nerves and margins pubescent; stipulas long, linear-lanceolate, entire; sepals lanceolate, acute, entire behind; lateral petals bearded. ♃. H. Native on the banks of the Missouri near the confluence of Rock River. Flowers small, yellow, but purplish on the under side. This is the only species of Violet on the plains of the Missouri from the confluence of the river Platte to Fort Mandan.

Nuttall's Violet. Fl. May, June. Clt. 1812. Pl. ½ foot.

110 V. præmo'rsa (Doug. mss. in bot. reg. 1254.) stemless; peduncles longer than the leaves; leaves ovate-oblong, hairy, entire; stipulas lanceolate, quite entire; sepals linear, pilose. ♃. H. Native of North America on the banks of the river Columbia, and the plains of the river Aguilar in California. Flowers yellow; petals beardless? the lower one streaked at the base. Root thick, fleshy, præmorse. Like *V. Nuttállii*.

Præmorse-rooted Violet. Fl. April, May. Clt. 1828. Pl. ¼ ft.

111 V. hasta'ta (Mich. fl. bor. amer. 2. p. 149.) smooth; stem simple, erect; leaves cordate-ovate, rarely halbert-shaped, serrated, smooth; stipulas small, awl-shaped, toothed; sepals lanceolate, acute, sub-dentate; spur very short. ♃. H. Native of North America in Georgia near Athens, but according to Pursh. on high mountains from Pennsylvania to Carolina. Elliot. sket. p. 151. Flowers yellow, purplish on the under side. Leaves usually marked with discoloured dots.

Var. β, *glabérrima* (D. C. prod. 1. p. 300.) leaves rhomboidal-lanceolate. ♃. H. Native of North Carolina in woods and on hills.

Halbert-leaved Violet. Fl. May, Ju. Clt. 1823. Pl. ¼ to ½ ft.

112 V. Canade'nsis (Lin. spec. 1326.) smooth; leaves ovate, cordate, crenated, acuminated, with downy nerves; stipulas lanceolate, entire, membranous; sepals lanceolate, awl-shaped, entire; petals entire; spur very short, somewhat saccate; capsules oblong, trigonal, very blunt; seeds roundish-ovate, chesnut-coloured. ♃. H. Native of North America on mountains in shady woods, in rich moist situations from Canada to Carolina. Flowers outside purplish-blue, inside white and elegantly veined, sweet-scented. Stigma a little pubescent.

Var. α; stipulas narrow-lanceolate. V. Canadénsis, Ell. sket. p. 301.

Var. β; stipulas ovate-lanceolate, ciliated; bracteas ciliated in the middle. V. albiflòra, Link. enum. 1. p. 241. Flowers pure white.

Canadian Violet. Fl. June. Clt. 1783. Pl. 1 to 2 feet.

113 V. pube'scens (Ait. hort. kew. ed. 1. v. 3. p. 290.) villous; stems simple, rather decumbent; leaves cordate, acuminated, serrated; stipulas large, ovate, serrated at the top or entire; sepals oblong-lanceolate; spur very short, somewhat saccate; ovary smooth. ♃. H. Native of North America in shady woods, among rocks, particularly limestone rocks, from New York to Virginia, abundant about Philadelphia. Flowers yellow. Stigma with two tufts of hairs. Sweet, fl. gard. t. 223.

Pubescent Violet. Fl. June, July. Clt. 1772. Pl. ¼ foot.

114 V. erioca'rpa (Schwein, amer. journ. 5. no. 1.) roughish; stems assurgent, branched; leaves cordate, acute, sometimes reniform; stipulas ovate-serrate; spur very short, somewhat saccate; fruit densely villous. ♃. H. Native of North Carolina. Sweet, fl. gard. t. 102. V. pubéscens β. Ker. bot. reg. 390. Flowers yellow. This plant differs from *V. Pennsylvánica*, in the whole plant being villous, not pubescent, as well as in the stem being branched. Stigma with 2 lateral tufts of hairs.

Woolly-fruited Violet. Fl. June, July. Clt. 1823. Pl. ¼ ft.

115 V. Pennsylva'nica (Mich. fl. bor. amer. 2. p. 149.) pubescent; stem simple, erect; leaves cordate, acuminated, serrated; stipulas oblong-ovate, serrated at the apex or entire; spur short; ovary densely villous. ♃. H. Native of North America, abundant about Philadelphia. Flowers yellow. Stigma ornamented with 2 lateral tufts of hairs.

Pennsylvanian Violet. Fl. June, July. Clt. 1772. Pl. ¼ ft.

116 V. uniflòra (Lin. spec. 1327.) radical leaves reniform, stem ones ovate, acuminated, deeply-toothed, pubescent; stipulas lanceolate-awl-shaped, furnished with glandular teeth; sepals ovate: spur broad, short, saccate. ♃. H. Native of Siberia in boggy places.—Gmel. fl. sib. 4. p. 101. t. 48. f. 5. Flowers yellow. Leaves large, two on the top of each stem.

One-flowered Violet. Fl. June, July. Clt. 1774. Pl. ½ foot.

117 V. macro'ceras (Ledeb. icon. pl. fl. ross. alt. ill. t. 219.) stemless, smooth; leaves cordate, crenate-serrated, acute; peduncles almost equal in length to the leaves; sepals bluntish, smooth, shorter than the thick, cylindrical spur; two lateral petals bearded; stigma bearded. ♃. H. Native of Siberia in humid places on the banks of rivulets near Buchtorninsk. Root thick, articulated. Flowers violet, sweet-scented. Like *V. Kamtschática* of Ging. We have placed this plant in this section on account of its having a bearded stigma.

Long-horned Violet. Fl. April, May. Pl. ¼ foot.

Sect. IV. Mela'nium (a name given to *V. tricolor* by some old botanists; it is derived from μελας μελανος, *melas melanos*, black; because of the dark colour of the flowers of some of the varieties of that plant.) D. C. mss. and prod. 1. p. 301.—Jàcea, D. C. fl. fr. Violæ tricolòres of old authors. Stigma urceolate, ornamented on both sides below, with a fascicle of hairs, and furnished with a large aperture with a lip at the bottom. Style tapering from the top to the bottom. Stamens triangular, connected. Torus concave, and therefore the ovary appears half inferior. Capsules obsoletely 6-sided. Seeds very numerous, 40-60. Seminal leaves usually ovate. The 3 lower petals have bearded claws. Stipulas all toothed or bristly-serrated.

118 V. nummulariifòlia (All. ped. no. 1640. t. 9. f. 4.) very smooth; stems branched, decumbent; leaves roundish, entire; stipulas lanceolate, 3-cleft or bristly-toothed; sepals oblong; spur shortish. ♃. H. Native on rocks in the Alps of Piedmont and Dauphiny. D. C. fl. fr. 4. p. 804. Flowers blue, with darker stripes.

Var. β, *mínima* (D. C. prod. 1. p. 301.) ♃. H. Native of the Alps of Corsica.—Bocc. mus. 2. p. 163. t. 127.

Money-wort-leaved Violet or Pansy. Fl. May, June. Clt. 1820. Pl. ¼ foot.

119 V. alpi'na (Jacq. obs. 1. p. 21. t. 11.) stem very short; leaves tufted, ovate-roundish, somewhat cordate, crenated, on long footstalks; stipulas lanceolate, scarcely toothed, adhering; sepals oblong, bluntish; spur tubular, blunt, shorter than the sepals. ♃. H. Native on the summits of the loftiest mountains of Austria, and the Carpathian mountains. Flowers dark-blue, with darker stripes.

Alpine Violet or Pansy. Fl. July, Aug. Clt. 1823. Pl. ¼ ft.

120 V. cornu'ta (Lin. spec. 1325.) root fibrous, stems ascending, diffuse; leaves cordate-ovate, crenated, ciliated; stipulas obliquely-cordate, toothed, ciliated; sepals awl-shaped; spur awl-shaped, elongated and abrupt at the base. ♃. H. Native of Switzerland and the Pyrenees, and on mount Atlas. D. C. fl. fr. 4. p. 810. Curt. bot. mag. t. 791. A tufted plant, with pale-blue flowers.

Horned Violet or Pansy. Fl. May, July. Clt. 1776. Pl. ½ ft.

121 V. Ceni'sia (All. ped. no. 1641.) trunk of root somewhat fusiform, woody; stems diffuse, procumbent, undivided; leaves spatulate-ovate, entire; stipulas obovate, stalked, undivided; calyxes pubescent; spur tubular, awl-shaped, acute, thrice as long as the hind lobes of the calyx. ♃. H. Native on rocks in the Alps of Switzerland, Piedmont, and Provence. Flowers blue.

Var. α, *ovatifòlia* (D. C. prod. 1. p. 301.) leaves all oval, hardly pubescent. V. Cenísia, All. fl. ped. t. 22. f. 6. D. C. fl. fr. 4. p. 805.

Var. β, *diversifòlia* (D. C. prod. l. c.) lower leaves ovate, upper ones oblong, tomentosely-pubescent. ♃. H. Native of the Pyrenees. V. Cenísia, Lapeyr. abr. Like *V. Cheiranthifòlia*.

Mount-Cenis Violet or Pansy. Fl. June, July. Clt. 1759. Pl. ¼ foot.

122 V. Valde'ria (All. ped. 2. p. 98. t. 24. f. 3.) trunk of root fusiform; stems diffuse, procumbent, undivided; leaves all oblong and rather hispid and sinuated; stipulas palmate; spur tubular, slender, longer than the calyx. ♃. H. Native of Piedmont. Flowers purple. Perhaps only a variety of the last.

Valderian Violet or Pansy. Fl. Ju. Jul. Clt. 1759. Pl. ¼ ft.

123 V. minu'ta (Bieb. fl. taur. 1. p. 173.) stems simple, one-flowered, flaccid; leaves roundish, crenated; stipulas ovate, entire, ciliated; spur scarcely the length of sepals. ♃. H. Native of Iberia. Perhaps a variety of *V. alpìna*. Flowers blue, about the size of those of *V. odórata*.

Minute-flowered Violet, or Pansy. Pl. 1 inch.

124 V. gra'cilis (Smith, fl. græc. t. 222.) root creeping, stem branched, angular, diffuse; leaves lanceolate, somewhat crenate, the upper ones crowded, opposite, either smooth or downy; stipulas deeply 3-cleft; spur slender, much longer than the auricles of the calyx, which are toothed. ♃. H. Native on mount Etna. V. calcaràta, var. ε. Æthnénsis, D. C. prod. 1. p. 302.—Cup. pamph. ed. bonon. t. 138. Bracteas toothed at the base in a hastate manner. Flowers about the size of *V. lùtea*, of a dull purplish blue, occasionally yellow.

Slender Violet, or Pansy. Fl. June, July. Pl. ½ foot.

125 V. cheiranthifo'lia (H. B. pl. æqu. 1. p. 111. t. 32.) velvety; root thick, woody; stems ascending; leaves lanceolate, quite entire, tapering into the footstalk; stipulas linear; spur tubular, rather acute, scarcely the length of the sepals. ♃. G. Native of the Canary Islands, at the top of the mountain called Pico-Teyde. Flowers violaceous.

Cheiranthus-leaved Violet, or Pansy. Pl. ½ foot.

126 V. CALCARA'TA (Lin. spec. 1325.) root fibrous, diffuse; stems short, simple, tufted; leaves spatulate-roundish, or elongated, crenate; stipulas palmatifid, or trifid; sepals oblong, glandularly-denticulated; spur awl-shaped, longer than the calyx; nectary scarcely twice the length of stamens; seeds ovate. 4. H. Native in pastures on the higher mountains from Austria to Provence, D. C. fl. fr. 4. p. 810. A very variable species.

Var. β, Hallèri (D. C. prod. 1. c.) stem short; stipulas cut, hardly ciliated; flowers large blue.—Hall. hist. no. 566, var. *a*. p. 243. t. 17. 4. H. Native with the last.

Var. γ, albiflòra (D. C. prod. 1. c.) stem short; stipulas cut, scarcely ciliated; flowers large, white. 4. H. Native of the Alps of Savoy.—Hall. hist. no. 566. var. *β*, III.

Var. δ, Bertolònii (D. C. prod. 1. p. 302.) stems elongated; lower leaves ovate, upper ones elongated, and are, as well as palmatifid stipulas, smoothish. 4. H. Native in the Apennines, about Genoa, on the top of mount Scaggia. V. Bertolònii, Pio. diss. 34. t. 3. f. 2.—Cup. pamph. ed. bonon. t. 99. Flowers large, purple.

Var. ζ? decipiens (D. C. prod. 1. c.) stems elongated; leaves and stipulas hispid; sepals lanceolate, rather hispid. Flowers blue? 4. H. Native in the Eastern Pyrenees. V. hìspida, Lapey. abr. 123.

Spurred Violet, or Pansy. Fl. March, July. Clt. 1752. Pl. ¼ to ½ foot.

127 V. VILLARSIA'NA (Rœm. et Schult. syst. 5. p. 388.) pubescent; stem short; leaves radical, primordial ones ovate-rounded, the rest of the lower ones lanceolate, upper ones oblong and linear-lanceolate; stipulas pinnatifid; lower petal oblique, truncate. 4. H. V. calcaràta, Vill. dauph. 2. p. 666. Flowers blue. Spur awl-shaped, longer than the sepals.

Villars's Violet. Fl. May, July. Pl. ¼ foot.

128 V. Zo'YSII (Wulf. in Jacq. coll. 4. p. 295. t. 11. f. 1.) root fibrous; stem quite simple, hardly so long as the footstalks; leaves ovate, crenate, smooth; stipulas elliptical-lanceolate, undivided, nearly entire; spur thrice as long as the auricles of the calyx. 4. H. Native of the Alps of Carinthia and Carniola. This plant is easily distinguished from *V. calcaràta*, by the stipulas never being lobed, although in some instances there will be found a slight lateral notch. The plant, moreover, is smaller, perfectly smooth, and green, never glaucous, and the spur rather thicker. Petals large, yellow, with black lines at the bottom, sometimes partly tinged with blue.

Baron de Zoys's Pansy. Fl. March, July. Clt. Pl. ¼ foot.

129 V. ORE'ADES (Bieb. fl. taur. suppl. 167.) stem short; leaves oblong; stipulas pinnatifid; segments obtuse; sepals acute, denticulated; spur tubular, obtuse, length of the calyx; 2 lateral petals bearded. 4. H. Native of Tauria, on the tops of mountains. Perhaps merely a variety of *V. amœ'na?* Flowers purple or yellow.

Oreades Violet, or Pansy. Fl. May, July. Clt. 1818. Pl. ¼ ft.

130 V. AMŒ'NA (Sym. syn. ex Smith, bot. no. 1287. in a note) stem short; leaves round; stipulas pinnatifid; lobes obtuse; sepals ovate-lanceolate, acute, entire; spur tubular, obtuse, length of the calyx. 4. H. Native on mountains in Scotland. Flowers very large, purple; petals roundish.

Pleasing Violet, or Pansy. Fl. June, July. Scotland. Pl. ¼ to ½ foot.

131 V. ALTAI'CA (Ker. bot. reg. t. 54.) stem short; leaves oval; stipulas cuneiform, with acute teeth; sepals acute, denticulated; spur very short, scarcely so long as the appendages of the sepals. 4. H. Native on the Altaian mountains. Sims, bot. mag. t. 1776. V. grandiflòra, Sievers. V. Pallásii and V. chrysántha, Fisch. cat. hort. gorenk. Root creeping, slender, hard. Flowers large, yellow. Stigma urceolate.

Var. β, purpùrea, (D. C. prod. 1. p. 302.) Flowers large, purple. V. Altaìca purpùrea. Fisch in litt.

Altaian Yellow Violet, or Pansy. Fl. March, June. Clt. 1805. Pl. ¼ foot.

132 V. GRANDIFLÒRA (Lin. mant. 120.) stems angular, unbranched, tufted; leaves ovate-oblong, crenate; stipulas pinnatifid, somewhat lyrate; bracteas minute, with a tooth on each side at the base; spur twice the length of the hind lobes of the calyx; sepals much toothed, and dilated at the base; spur cylindrical, slightly curved. 4. H. Native of Siberia? The whole plant is like *V. lùtea*, but every part is twice the size, and the stipulas are very distinct, being pinnatifid in their lower half only, not palmate. Flowers large, yellow, with the two lateral sepals bearded at the base, and marked like the lip with a few black lines. This is probably the *V. chrysántha* of Fisch. in litt.

Great-flowered Violet, or Pansy. Fl. April, July. Clt. Pl. ½ foot.

133 V. SUDE'TICA (Willd. enum. suppl. 12.) root fibrous, diffuse; stems almost simple; leaves ovate-oblong; stipulas palmatifid, with entire lobes; sepals lanceolate; petals wedge-shaped, crenated, with long distinct claws; spur awl-shaped, acutish, stretched out, longer than the ears of the sepals; seeds ovate. 4. H. Native in meadows on the Alps and mountains of Europe, particularly Germany. V. grandiflòra, D. C. fl. fr. 5. p. 620. and almost of all other authors. V. saxátilis, Schmidt, fl. boh. p. 233. Flowers large, yellow.

Var. β, calaminària (D. C. prod. 1. p. 303.) stems ascending; leaves rather remote, ovate; flowers yellow. 4. H. Native in dry pastures, and among reeds near water. V. lùtea, D. C. fl. fr. 5. p. 619. exclusive of the synonymes.

Var. γ? mèdia (D. C. prod. 1. c.) stems elongated, erectish; leaves remote; flowers purple. 4. H. Native on the mountains of Jura and Auvergne.

Var. δ, ramòsior (D. C. prod. 1. c.) stems branched; leaves rather remote, ciliated; flowers 3-coloured. 4. H. Native about Verviers, (Lejeune.) V. Rothomagénsis, var. D. C. fl. fr. 5. p. 619. Perhaps a variety of *V. tricolor*, or perhaps a known species.

German Violet, or Pansy. Fl. May, August. Clt. 1805. Pl. ¼ to ½ foot.

134 V. LU'TEA (Huds. ed. 1. p. 331.) root fibrous, slender; stems triangular, simple; leaves ovate-oblong, crenate, fringed; stipulas palmatifid; sepals lanceolate, acute; petals wedge-shaped, with long distinct claws; spur the length of calyx. 4. H. Native in moist mountainous pastures in Wales, north of England, and in Scotland. Smith, eng. bot. 721. V. grandiflòra, Huds. ed. 2. p. 380. Flowers yellow, larger than those of *V. tricolor*, with blackish, branched, radiating lines; the lateral petals are palest, the two upper ones sometimes purple. When all are purple, as sometimes happens, Hooker says this is the *V. amœ'na* of authors. All the petals are bearded at the base.

Yellow Violet, or Pansy. Fl. May, September. Britain. Pl. ¼ foot.

135 V. PROSTRA'TA (Rœm. et Schult. syst. 5. p. 582.) root simplish, stems decumbent; lower leaves roundish, upper ones oval, all of which are rather cordate, and grossly crenate, rather hairy; stipulas pinnatifid, with the middle lobe oblong, and entire; spur hardly stretched, obtuse. 4. H. Native on tops of mountains in the Island of Teneriffe, as well as in the Apennines. V. Ludovícea, Jan. in litt. Petals cream-coloured, streaked with black.

Prostrate Violet, or Pansy. Fl. June, September. Clt. 1824. Pl. ¼ foot.

136 V. ROTHOMAGE NSIS (Desf. cat. 153.) hispid, or pilose; root rather fusiform; stems zigzag, branched, diffuse; leaves

ovate, but the lower ones are somewhat cordate, crenate, fringed; stipulas pinnatifid, rather lyrate; spur tubular, obtuse, shorter than the sepals; nectaries shorter than the stamens; seeds oblong-obovate. ♃. H. Native on cretaceous rocks, and in fields from Rouen to Melda. D. C. fl. fr. 4. p. 809. Pio. diss. t. 2. Sims, bot. mag. 1498. V. híspida, Lam. fl. fr. 2. p. 679. V. pilòsa, Donn, cant. ed. 3. p. 40. Scarcely differing from *V. trícolor*. Flowers bright blue, the side petals and lip striped with black. Bracteas near the flower, large, lanceolate, with a tooth on each side.

Rouen Violet, or Pansy. Fl. April, Aug. Clt. 1781. Pl. ½ ft.

137 V. declina'ta (Walds. et Kit. hung. 3. p. 248. t. 223.) root rather fusiform; stem branched, declinate; leaves lanceolate, oblong, smooth, crenate; stipulas pinnatifid, ciliated; spur thick, blunt; sepals elongated. ♃. H. Native of Hungary, Transylvania, and Italy, among broken rocks. V. trícolor, ϑ, declinàta, Ging. mss. in D. C. prod. 1. p. 303. Flowers pale blue, larger than the calyx.

Declinate Violet, or Pansy. Fl. May, August. Clt. 1817. Pl. ½ foot.

138 V. tri'color (Lin. spec. 1326.) root somewhat fusiform; stems branched, diffuse; lower leaves ovate-cordate, deeply crenate; stipulas runcinately-pinnatifid, with the middle lobe crenated; petals incumbent, with short claws; spur thick, obtuse, not stretched out; nectaries short; seeds oblong-ovate. ⊙. H. Native in cultivated fields and gardens throughout Europe, Siberia, and North America; plentiful in Britain. Smith, eng. bot. t. 1287. Woodv. suppl. t. 252. Curt. lond. fasc. 1. t. 65. Bracteas very small, scarcely evident. Petals very variable in colour and size. This is a very variable species, or more probably a heterogeneous mass of species collected.

Heart's-ease has ever been a favourite flower with the people, and has many provincial names, all bearing some allusion to love. In days of superstition it was called *Herb Trinity*; probably from the three-coloured flowers. *Heart's-ease* is the general name by which it is now known; its more elegant name, *Pansies*, is from the French *pensée*. The meaning is alluded to by Shakspeare, in Hamlet,—"There's *pansies*, that's for thoughts."

Heart's-ease was represented by old writers on the Materia Medica, as a powerful medicine in epilepsy, ulcers, scabies and cutaneous complaints. Haase, who administered it in various and in large doses, extended its use to many chronic disorders; and from the great number of cases in which it proved successful, it seems to deserve farther trial. *Heart's-ease*, when strongly bruised, exhales a smell resembling peach-kernels. Distilled with water, whether it be fresh or dried, it gives a little volatile oil, of a very acrid taste, having the above-mentioned smell. The corolla yields to water a highly colouring principle.

Var. α, *horténsis* (D. C. prod. 1. p. 303.) petals intensely velvety, much larger than the calyx. Fl. dan. 603.

Var. β, *degèner*, (D. C. l. c.) somewhat branched; flowers 3-coloured, rather velvety; petals a little larger than the calyx; stipulas large. In cultivated fields.

Var. γ, *alpéstris* (D. C. l. c.) stem elongated; leaves remote; flowers sulphur-coloured, spotted with purple, larger than the calyx. In meadows on the Alps. V. lùtea, Tratt. tab. 43. V. lùtea and saxátilis, Schmidt, fl. boh. no. 257 and 259?

Var. δ, *crassifòlia* (D. C. l. c.) leaves large, thickish; flowers yellow, scarcely larger than the calyx. In Neustria, by the sea-side.

Var. ε, *calycìna* (D. C. l. c.) leaves large, ovate, rather crowded: calyx large. In the mountains of Teneriffe.

Var. ζ, *appendiculàta* (D. C. l. c.) leaves tapering to both ends; calyx drawn out much at the base, larger than the corolla. Between Bagdad and Kermancha. Perhaps the same as ε, *calycìna*.

Var. η, *purpùrea* (D. C. l. c.) leaves ovate; sepals shortish, broad, drawn out much at the base; flowers purple, larger than calyx. In Armoracea.

Var. ι, *ovatifòlia* (D. C. l. c.) stems diffuse, branched; leaves ovate; flowers 3-coloured, scarcely longer than the lanceolate sepals.

Var. κ, *arvénsis*, (D. C. l. c.) stems branched, assurgent; petals yellowish, blue, or purple spotted. Frequent in sandy cultivated fields. V. arvénsis, Sibth. 84.—Riv. pentap. Jorr. t. 122.—Math. valgr. 2. p. 525. f. Pet. h. brit. t. 37. f. 9. This is most likely a distinct species.

Var. λ, *sabulòsa* (D. C. l. c.) stems many, diffuse; leaves remote, ovate, elongated; sepals narrow-lanceolate, hardly shorter than the corolla. In sand by the sea-side in Belgium and France. Perhaps V. Bannática, Kit.

Var. μ, *graciléscens* (D. C. l. c.) stems almost simple, elongated, erect; sepals narrow, usually longer than the two-coloured corolla. In fields near Bern.

Var. ν, *triméstris* (D. C. l. c.) stem erect, very slender; stipulas very small; sepals linear. About Lisbon. V. trícolor triméstris flore variorum colorum elegans, Grisl. vir. lus.

Var. ξ, *hírta* (Ging. mss. et D. C. l. c.) velvety-hairy; flowering earlier than April. Stipulas pinnatifid at the base. In Vallais. Perhaps V. Kitaibeliàna, Rœm. et Schult. syst. 5. p. 383.

Var. ο, *bellioìdes* (D. C. l. c.) rather hispid; stems very short; leaves roundish, crowded; petals shorter than the calyx. In sandy places about Montpelier, and in the Nebrodes of Sicily. V. párvula, Tineo. pug. sic. 5. no. 3.

Three-coloured Violet, Heart's-ease, or Pansy, &c. Fl. April, October. Britain. Pl. ¼ to ½ foot.

139 V. tene'lla (Poir. in. Lam. dict. no. 53.) lower leaves roundish, minute, upper ones somewhat alternate, oblong, obtuse, all smooth and entire; peduncles rather longer than the leaves. ⊙. H. Native of Syria. V. trícolor, var. π. nàna, D. C. prod. 1. p. 303. This plant is rather remarkable in having the lower leaves opposite. The cotyledons remain even to the time of flowering.

Tender violet. Fl. May, July. Pl. 2 inches.

140 V. bi'color (Pursh. fl. amer. sept. 1. p. 174.) mostly smooth; stem triquetrous, erect, simple, leafy; leaves toothed, radical ones roundish, or spatulate, upper ones ovate, or lanceolate; petioles short; stipulas large, pinnatifid or palmate, middle lobe longer and broader, the rest linear-oblong, all obtuse, and ciliated; peduncles tetragonal, much longer than the leaves; sepals ovate-lanceolate, acuminated, ciliated, emarginate behind; two lateral petals bearded; stigma rather pubescent, hardly beaked. ⊙. H. Native of North America, in fields in New Jersey, New York, and of Pennsylvania and Virginia. V. ténella, Le Conte in ann. lyc. new york, 2. p. 152. V. arvénsis, Elliot. Flowers white, tinged or veined with blue or purple, yellow at the base. According to Pursh. there are specimens in Mr. Lambert's Herbarium, gathered by Pallas in Siberia, which correspond with the North American plant.

Two-coloured Violet. Fl. May, July. Pl. ½ foot.

Sect. V. Lepti'dium (from λεπτος, *leptos*, slender; form of style.) Ging. mss. D. C. prod. 1. p. 304. Stigma proboscis-like, truncate, with a minute hole at the tip. Style awl-shaped, flexuous. Stamens oblong, approximate, 2 of which are usually furnished with longer terminal appendages than the others. Torus flattish. Capsule 3-lobed or triangular, few-seeded. The petals of all are perhaps smooth.

141 V. rube'lla (Cav. icon. 6. p. 20. t. 531. f. 1.) stems erect; leaves ovate or oblong, acute, crenate-serrate, shorter than the peduncle; stipulas lanceolate, setaceously-toothed;

spur conical, short. ♄. G. Native in Chili about San Carlos. Flowers reddish. Membranes of stamens obtuse.

Var. α, latifòlia (Ging. in Schlecht. Linnæa. 1. p. 410.) leaves ovate-oblong; peduncles nearly equal in length to the leaves. ♄. G. In St. Carlos de Chili.

Var. β, angustifòlia (Ging. l. c.) leaves lanceolate, ; peduncles longer than the leaves. ♄. G. In Chili at Talcaguana.

Red-flowered Violet. Shrub 1 foot.

142 V. corchorifo'lia (Domb. herb. et D. C. prod. 1. p. 304.) pubescent; stems erect; leaves ovate, acute, crenate-serrate, unequal at the base, with the serratures exserted and apiculated; stipulas lanceolate, setaceously-jagged; spur very broad, saccate; capsules ovate, trigonal. ♄. G. Native in Peru about Huanaco. V. punìcea, Ruiz et Pav. in herb. Lamb. Flower vermilion. Leaves rather cordate at the base.

Corchorus-leaved Violet. Shrub 1-2 foot.

143 V. Chamissonia'na (Ging. mss. in Schlecht. Linnæa. 1. p. 408.) stem shrubby, oblique; leaves ovate, acuminated, tapering into the petiole at the base, serrated; serratures remote, appressed; stipulas lanceolate, lacerately-toothed; spur short, broadly saccate; membranes of stamens all obtuse. ♄. G. Native of the island of O Wahu. Plant smooth. The leaves resemble those of *Prùnus doméstica.* Flowers violet, sweet-scented. Sepals lanceolate, acuminate.

Chamisso's Violet. Shrub ½ foot.

144 V. capilla'ris (Pers. ench. 1. p. 256.) shrubby, climbing, smoothish; branches angular; leaves ovate, unequal at the base, somewhat cordate, sharply serrated, with the serratures exserted; stipulas oblong, acute, trifidly awned at the top, peduncles shorter than the leaves; sepals acute; lower petal obovate, roundish, apiculate; spur very short, saccate; terminal membranes of 2 lower stamens elongated, awl-shaped; nectariferous appendages broad, rounded at the base, truncate at the top, shorter than the cells; seeds with fuscous dots. ♄. ⏑. S. Native of New Granada. V. stipulàris, H. B. et Kunth, nov. spec. amer. 5. p. 372. but not of Swartz. Flowers pale blue.

Capillary-jagged-stipuled Violet. Sh. climbing.

145 V. seto'sa (Smith, in Rees' cycl.) shrubby, branched, smoothish; branches flexuous; leaves ovate, acute, serrated, 4 times longer than the petiole; stipulas lanceolate, with capillary serratures; peduncles equal or double the length of the leaves; sepals lanceolate, acute; spur short, saccate. V. stipulàris, Cav. icon. 6. p. 20. t. 531. ♄. G. Native of Chili at Talcaguana. Flowers pale blue.

Bristly-stipuled Violet. Shrub 1 foot.

146 V. tracheliifo'lia (Ging. ex Spreng. syst. append. p. 97.) shrubby, smooth; leaves on short footstalks, ovate-cordate, acuminated, sharply-toothed; stipulas lanceolate, quite entire. ♄. G. Native of Sandwich Islands, particularly in O Wahu. Flowers small.

Throat-wort-leaved Violet. Fl. Shrub 1 foot.

147 V. sca'ndens (H. B. et Kunth, nov. spec. amer. 5. p. 371. t. 493.) shrubby, climbing, glabrous; branches rather angular, striated; leaves cordate-ovate, crenated, glabrous; stipulas oblong, dentately-ciliated; peduncles length of leaves; sepals acuminated; lower petal obovate-oblong; spur saccate, short; 2 lower stamens with terminal, elongated membranes; nectariferous appendages, oblong, obtuse, shorter than the cells; stigma bluntish. ♄. S. Native of Peru near Loxa, at the height of 3180 feet. Petals violaceous, smooth.

Climbing Violet. Shrub climbing.

148 V. argu'ta (H. B. et Kunth, nov. spec. amer. 5. p. 373.) shrubby, twining; branches terete, hairy; leaves profoundly cordate, sharply serrated, upper surface puberulous, under surface hoary; footstalks villous; stipulas lanceolate, setaceously-jagged; peduncles shorter than the leaves; sepals acute; lower petal obovate, mucronate; spur broad, very blunt, scarcely one half shorter than the lamina; two of the stamens with longer obtuse reflexed membranes; nectariferous appendages, ovate, truncate, a little shorter than the anthers; seeds covered with glandular dots, brown. ♄. G. Native of Peru in cold woods between Gonzana and Loxa at the height of 3180 feet. Flowers flesh-coloured, smooth.

Sharp-serrated-leaved Violet. Shrub twining.

149 V. stipula'ris (Swartz, fl. ind. occid. 3. p. 1956.) glabrous; stems reptant; leaves ovate-lanceolate, tapering to both ends, with blunt, pressed, serratures; stipulas oblong, acuminated, furnished with long ciliæ; spur very short; two of the stamens with longer awl-shaped, recurved membranes. ♄. S. Native in the islands of Guadaloupe and St. Christopher. V. persicariæfòlia, Poir. dict. 8. p. 628. Flowers blue or white.

Stipular Violet. Shrub trailing.

150 V. graci'llima (St. Hil. in mem. mus. 11. p. 449. t. 22. f. a.) caulescent, very smooth; stem filiform; leaves small, broadly-cordate, obsoletely and remotely toothed; stipulas lanceolate-awl-shaped, hardly toothed; peduncles longer than the leaves; sepals acuminated; petals beardless. ♃. S. Native of Brazil in moist pastures. Flowers violaceous; spur short, saccate. Anthers ending in a membrane at the apex, anterior two appendiculate on the back, and with terminal hooked processes, the rest with erect terminal processes. Style awl-shaped.

Very-slender Violet. Fl. Nov. Pl. ½ to ¾ foot.

151 V. subdimidia'ta (St. Hil. in mem. mus. 11. p. 450.) caulescent, very smooth; leaves ovate-cordate, acute, unequal-sided, toothed; stipulas oblong-lanceolate, ciliately jagged; peduncles shorter than the leaves; sepals ovate-oblong; petals beardless, acuminated; style awl-shaped, curved. ♃. S. Native of Brazil in the province of Minas Geraes, near the town called Villa Rica, at the height of about 3700 feet above the level of the sea. Flowers pale violet. Spur short, saccate. Anthers almost as in *V. gracillima.*

Subdimidiate Violet. Fl. Jan. Pl. ½ to 1 foot.

152 V. confe'rta (St. Hil. in mem. mus. 11. p. 453.) caulescent, very smooth; leaves crowded, ovate-lanceolate, acute, finely-toothed; stipulas broadly linear, very blunt, ciliately-jagged; peduncles equal in length to the leaves; sepals lanceolate, linear, acute; style awl-shaped, in form referable to the letter S. ♃. S. Native of Brazil in the southern part of the province of St. Paul in humid pastures and shady woods near the town of Castro. Root creeping. Flowers white.

Crowded-leaved Violet. Fl. Feb. Pl. ¼ to ½ foot.

153 cerasifo'lia (St. Hil. mem. mus. 11. p. 451.) caulescent, very smooth; leaves approximate, lanceolate, acute, toothed; stipulas oblong-lanceolate, acute, auricled at the base, ciliary-jagged; peduncles usually shorter than the leaves; sepals acuminated; style awl-shaped, incurved. ♃. S. Native of Brazil in very shady places of woods on the mountains called Serra-da Caraca not far from the town called Cahetè in the province of Minas Geraes. Root creeping, slender, usually emitting runners from the base. Flowers violaceous.

Var. β, intermèdia (St. Hil. l. c. p. 453.) leaves somewhat ovate-lanceolate, rather distant, somewhat unequal-sided. ♃. S. Flowers violaceous.

Cherry-leaved Violet. Fl. Jan. Pl. ¼ to 1 foot.

154 V. Dombeya'na (D. C. mss. and prod. 1. p. 305.) glabrous; stems reptant; leaves oval, cuneately narrowed at the base, serrated, with the serratures exserted and remote; stipulas lanceolate-linear, setaceously-toothed; spur very short. ♄. S. Native of South America. V. rèpens, Domb. herb. Perhaps a variety of *V. stipulàris,* Swartz.? Flowers blue.

Dombey's Violet. Shrub creeping.

155 V. pilòsa (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 645.) stigma proboscis-like; style clavate; stamens oblong, connected; capsules ovate-globose; 4 superior petals hairy at the base; leaves cordate, tapering into the petiole a little at the base, crenulate, pilose; stipulas oblong, setaceously-toothed, ciliated, erect. Stem stoloniferous. ♃. S. Native of Java.

Pilose Violet. Pl. creeping.

156 V. tri'fida (Spreng. pug. 1. p. 22.) stem decumbent; leaves somewhat trifid, tapering to the base, with the segments lanceolate, very entire; calyxes hardly appendiculated behind; spur much larger than the calyx. ♃. F.? Native of? Flowers white.

Trifid-leaved Violet. Plant decumbent.

† *Species not sufficiently known.*

157 V. gibbo'sa (Rafin. dec. pl. nov. amer. sept. in litt. 1819.) caulescent, glabrous; leaves on long footstalks, cordate-deltoid, crenated, obtuse, under surface pale; stipulas ovate-lanceolate, obtuse, entire; petals glabrous; spur gibbous, very short. ♃. H. Native on the Alleghany Mountains in North America. Flowers yellow.

Gibbous-spurred Violet. Fl. May, Jul. Clt.? Pl. ½ foot.

158 V. serpyllifòlia (H. B. ex Willd. herb. in Rœm. et Schult. syst. 5. p. 391.) stems procumbent; leaves linear-spatulate, quite entire. ♃. S. Native of South America. Unknown to Kunth.

Wild-Thyme-leaved Violet. Pl. procumbent.

159 V. teucriifòlia (H. et B. ex Willd. herb. in Rœm. et Schult. syst. 5. p. 391.) leaves alternate, ovate, serrated; stem shrubby, procumbent; peduncles longer than the leaves. ♄. S. Native of South America. Unknown to Kunth.

Teucrium-leaved Violet. Shrub procumbent.

160 V. sca'bra (Brown, in flora 1820. p. 469.) almost stemless; leaves cordate, acuminated, scabrous; sepals acute; root creeping. ♃? H. Native about Salzburgh.

Scabrous Violet. Pl. ¼ foot.

161 V. crassiu'scula (Bory, ann. gen. 1820. vol. 3. p. 16.) stems decumbent, without bracteas? leaves alternate, stalked, ovate, oblong, quite entire, thickish; flowers naked, on long peduncles. Native on Sierra Nevada in Spain.

Thickish-leaved Violet. Pl. decumbent.

162 V. Selki'rkii (Pursh. mss. ex Goldie. edinb. phil. journ. 1822. p. 319.) leaves cordate, crenate-serrated, rather pilose; petals beardless; spur long, thick, very blunt. ♃. H. Native on mountains near Montreal in North America. Flowers blue.

Selkirk's Violet. Fl. May, July. Clt. 1822. Pl. ¼ foot.

163 V. spatula'ta (Willd. reliq. ex Rœm. et Schult. syst. 5. p. 353.) leaves lanceolate-spatulate, fascicled, almost entire, pubescent. ♃. H. Native of the province of Guilan on the Caspian sea.

Spatulate-leaved Violet. Pl. ¼ foot.

164 V. Alleghane'nsis (Rœm. et Schult. syst. 5. p. 560.) hairy; leaves ovate and oblong-cordate rather entire; footstalks broad, membranaceous; 2 lateral petals bearded; spur very short, saccate. ♃. H. Native of North America on the Alleghany Mountains. Perhaps a variety of *V. ovàta?* Flowers blue.

Alleghany Violet. Fl. April, June. Clt. 1824. Pl. ¼ foot.

165 V. Labrado'rica (Schrank. denk. I. bot. Gesell. regensb. II. p. 12.) stem erect, branched; leaves orbicularly-cordate, acuminated; stipulas lanceolate. ♃. H. Native of Labrador.

Labrador Violet. Plant ½ foot.

166 V. elonga'ta (Poir. dict. 8. p. 644.) glabrous; leaves elliptical, quite entire, stalked; flowers solitary on long peduncles; stem weak; capsules very smooth; seeds rufous, globose. ♃? H. Native of North America.

Elongated-peduncled Violet. Pl. ¼ foot.

167 V. prunellæfo'lia (H. B. et Kunth, nov. gen. amer. 5. p. 370.) very smooth; leaves ovate-oblong, acute, rounded at the base, obsoletely cordate, crenate; stipulas ciliated; calyxes acute; petals retuse, smooth; spur somewhat saccate, short, rounded; style clavate above, thickened; stigma lateral, truncate. ♃. G. Native of South America about Santa Fe de Bogota, at the height of 4110 feet. Flowers violaceous. Perhaps allied to *V. hírta*. Style club-shaped; stigma truncate.

Prunella-leaved Violet. Pl. ¼ foot.

168 V. umbracti'cola (H. B. et Kunth, nov. spec. amer. 5. p. 370.) caulescent, procumbent; leaves ovate, bluntish; running into the footstalk at the base, denticulated, upper surface glabrous, under surface as well as footstalks and peduncles beset with a few hairs; stipulas dentately-ciliated; calyxes linear, acute; lower petal rounded, with a saccate, short spur, rounded at the base, with the rest of the petals obovately-spatulate; dorsal appendages of stamens oblong, obtuse, compressed, one-half shorter than the cells; ovary ovate, smooth; ovulæ 22, disposed in 2 rows. Style cultriform? stigma obtuse. ♃. G. Native of Mexico in woods near Real del Monte, at the height of 4278 feet. Flowers violaceous. Petals smooth, about the size of those of *Viola palústris*.

Shaded-hill Violet. Pl. procumbent.

169 V. chamædrifo'lia (Ruiz, et Pav. in herb. Lamb. and D. C. prod. 1. p. 306.) stems? leaves ovate, toothed; 2 lateral petals bearded. Native in Peru. Perhaps *V. teucriifòlia*. Rœm. et Schult. syst. 5. p. 391.? or perhaps a variety of *V. rubélla*, Cav.

Germander-leaved Violet. Pl. 1 foot.

170 V. Kamtscha'tica (Ging. in Schlecht. Linneæ. 1. p. 406.) stigma triangular, marginated; leaves cordate; stipulas lanceolate; sepals ovate, acuminated; spur cylindrical, rounded at the top, longer than the sepals. ♃. H. Native of Kamtschatka. Petals purple. Very like *V. hírta*.

Kamtschatka Violet. Pl. ½ foot.

Cult. Almost every species of *Violet* deserves to be cultivated in gardens, the greater part for the beauty of their flowers, and others for their scent, such as the varieties of *Viola odoràta*. The hardy perennial species are well adapted for ornamenting rock-work or the front of flower-borders, but the smaller species should be grown in small pots in a mixture of loam, peat, and plenty of sand. The American species do best in vegetable mould or peat; those species which are natives of woods are well adapted for growing under trees, and those natives of bogs or marshes should be planted in moist situations. They are all readily increased by seeds or parting the plants at the root. The annual species may be sown in the open borders or on rock-work. The greenhouse and stove species should be grown in a mixture of loam and peat, the herbaceous kinds of them should be increased by dividing at the root or by seeds, and the shrubby kinds should be propagated by cuttings, which will root freely if planted under a hand-glass, those of the stove species in heat. The species marked frame should be always preserved in pots, that they may be protected during winter by a frame. The *Neapolitan violet*, a variety of *V. odoràta* forces well, and where there is a stove or warm pit may be had in flower throughout the winter and early part of spring.

V. ERPE'TION (from ερπητος, *erpetos*, creeping, and ιον, *ion*, the Greek for violet, in allusion to the creeping rooting stems). D. C. in herb. Lamb. Sweet, fl. gard. t. 170.

Lin. syst. *Pentándria, Monogýnia*. Character in almost every respect the same as *Viola*, but the lower petal is not drawn out into a spur at the base, and the anthers are destitute of dorsal appendages. The sepals are scarcely produced at the base. Filaments united at the apex; lobes of anthers

distinct, diverging at the base. Stigma inconspicuous. Small tufted plants, with running rooting stems, and roundish or kidney-shaped leaves, 1-flowered peduncles, and beautiful blue flowers mixed with white. The roots of all are perpendicular.

1 E. RENIFO'RME (Sweet, fl. gard. 170.) stem creeping, rooting; leaves crowded, kidney-shaped, repandly-toothed, punctate; stipulas linear-awl-shaped, acuminated; sepals lanceolate, hardly drawn out into auricles; petals reflexed; the two lateral ones are furnished with a beard on the upper side. ♃. F. Native of New Holland about Port Jackson. Erpétion cymbalària, D. C. in herb. Lamb. Vìola renifórmis, R. Br. ined. Vìola hederàcea, Hook. exot. bot. 225. Flowers blue mixed with white.

Kidney-shaped-leaved Erpetion. Fl. May, Oct. Clt. 1823. Pl. creeping.

2 E. HEDERA'CEUM (Lab. spec. nov. holl. 1. p. 66. t. 91. under *Vìola*). stem short, stoloniferous; leaves crowded into fascicles, roundish, somewhat cuneated at the base, crenated, punctate; stipulas awl-shaped, ending in a bristly acumen; sepals hardly drawn out at the base into auricles. ♃. F. Native of Van Diemen's Land. Flowers blue and whitish. This is a much smaller plant than the last. The two lateral petals are arched, with a tuft of hairs on the upper side. Root perpendicular, simple. Peduncles about twice the length of the leaves.

Ivy-like Erpetion. Pl. creeping.

3 E. PETIOLA'RE; stems stoloniferous; leaves crowded in fascicles, kidney-shaped-truncate at the apex, repandly-toothed; stipulas lanceolate, ending in bristle-like acumen; sepals hardly drawn out at the base into auricles; peduncles and petioles very long, even from 6 to 9 inches. ♃. H. Native of New Holland and Van Diemen's Land. Vìola grácilis, R. Br. ined. V. hederàcea γ, petiolàris, D. C. prod. 1. p. 305. Petals smooth.

Slender Erpetion. Pl. creeping.

4 E. SPATHULA'TUM; stoloniferous; leaves on long footstalks, obovate-roundish, toothed, smooth; peduncle slender; flower nodding; spur very short. ♃. H. Native of New Holland. Vìola spatulàta, Sieb. V. Sieberiàna, Spreng. syst. app. p. 96. Perhaps a species of *Vìola*.

Spatulate-leaved Erpetion. Pl. creeping.

Cult. These are elegant little plants, and deserve to be cultivated in every garden. They will suit well for rock-work, or to be grown in pots and placed among other alpine plants; they are all easily increased by separating the runners. All the species require protection in severe weather.

VI. SO'LEA (in honour of William Sole, an acute English botanist, author of Menthæ Brittanicæ, 1 vol. fol. Bath, 1798.) Ging. mss. et D. C. prod. 1. p. 306.—Sòlea, spec. Spreng. pug. rar. 1. p. 22.

Lin. syst. *Pentándria, Monogýnia.* Sepals hardly equal, keeled? not drawn out behind into auricles as in *Vìola*, but running into the pedicel at the base (Nutt.), reflexed after flowering. Petals rather unequal; lower one a little larger than the rest and a little gibbous at the base, the rest almost equal, convolute in æstivation? Stamens approximate, 2 anterior ones bearing each on the outside at the base a nectarial gland? filaments rather unguiculate at the base, with the claws scarcely equalling the ovary in height, bearing the anthers a little higher up. Stigma hooked. Herb pilose. Stems twiggy. Leaves alternate. Peduncles 1-flowered, short, axillary in pairs, but often solitary from abortion, each furnished with 2 little bracteas.

1 S. CO'NCOLOR (Ging. mss. et D. C. prod. 1. p. 306.) ♃. H. Native of Pennsylvania on limestone rocks. Vìola cóncolor, Forster in Lin. trans. 6. p. 309. t. 28. Perhaps the same as *Sòlea stricta* of Spreng. l. c.? Flowers small, green.

Self-coloured-flowered Solea. Fl. June, July. Clt. 1788. Pl. 1 to 2 feet.

Cult. This curious plant may be grown in the open border or on rock-work. A limestone or chalky soil will suit it best. It may be either propagated by dividing the plant at the root, or by seeds. It will require protection in severe weather.

VII. POMBA'LIA (in honour of Sebastian Joseph de Carvalho Marquis de Pombal, a famous Portuguese statesman). Vand. fasc. 7. t. 1. D. C. prod. 1. p. 306.

Lin. syst. *Pentándria, Monogýnia.* Sepals large, running into the pedicel at the base, with the margins echinated with callose prickles. Petals unequal, 4 upper ones short, scarcely exceeding the calyx in length, the lower one 2 or 3 times longer than the rest, somewhat gibbous at the base, stipitately-unguiculate, with a broad limb with an involute margin. Filaments unguiculated at the base, with linear claws equalling the ovary, oblong, dilated at the top, bearing the anthers very high up, 2 of the filaments bearing each a nectarial gland on the back at the base. Lobes of anthers blunt at the top. Style straight; stigma funnel-shaped. Capsule as in *Vìola*, usually villous. Cotyledons generally orbicular, length of the terete radicle. Annual herbs, generally very villous. Root thickish, hard. Leaves alternate. Peduncles axillary, solitary, not jointed, bibracteolate. Flowers large, drooping.

1 P. I'TUBU (Ging. mss. et D. C. prod. 1. p. 307.) ⊙. ♂. S. Vìola I'tubu, Aubl. guian. 2. p. 808. t. 318. bad. Ionídium I'tubu, H. B. et Kunth, nov. gen. amer. 5. t. 496. I. Ipecacuánha et calceolària, Vent. *Itoubou* is the name of the plant in Guiana.

Var. α; stems very hairy; flowers white; seeds whitish; capsules villous. Native of Guiana and Brazil. Sims, bot. mag. 2453. V. Ipecacuánha et calceolària, Lin.

Var. β; stems very hairy; flowers blue. Native in Cayenne. Vìola I'tubu, var. flòre cærùleo, Aublet. l. c.

Var. γ; stems smoothish; flowers white; ovary villous; seeds black. Native in Brazil. Pombàlia Ipecacuánha, Vand. fasc. 7. t. 1. bad. Calceòlar. Lœfl. itin. p. 184. no. 2.? Perhaps *V. Ipecacuánha* of Lin. mant. 484.

Var. δ; indécora (St. Hil. mem. mus. 11. p. 481.) corolla shorter than the calyx, smooth; filaments 3, sterile. Native of Brazil. Ionídium indécorum, St. Hil.

The roots of these plants are emetic, and probably the white ipecacuan of the shops; beside these the name of ipecacuan is given to various species of *Cynánchum, Asclépias, Euphórbia, Dorstènia, Psychótria emética*, but the best is the root of the *Callicócca Ipecacuánha*, which is called in the shops the Brown Ipecacuan. With regard to their comparative strengths, De Candolle says that vomiting is produced by 22 grains of *Cynánchium Ipecacuánha*, 24 of *Psychótria emética*, 60 or 72 of *Ionídium calceolàrium*, and 1 to 3 drachms of *Pombàlia I'tubu*. The root of this plant fills the place of the true *Ipecacuan* of the shops. M. Fernambouc regards it as the best remedy that can be employed in dysentery. Some of the inhabitants of Rio-Grande-do-Norte assured M. Aug. St. Hilaire that they can radically cure the gout with a decoction of the roots. The roots are white within and greyish or reddish without; they are sold by the inhabitants of Brazil for the true *Ipecacuan, Callicócca Ipecacuánha*. The Brazilian name of the plant is *Poaya da praia* or *Poaya branca*. *Poaya* appears to be a name used by the Brazilians for all emetic roots.

Itoubou or White Ipecacuanha. Fl. July. Clt. 1822. Pl. 1 ft.

Cult. Although these plants form small shrubs in their native country, they cannot be considered any more than stove annuals in this country, therefore the only mode of preserving them is by seeds, which should be sown in a hot-bed in the spring, where they should remain, or they may be removed into the stove in May. A mixture of peat and sand suits them best.

VIII. PI'GEA (meaning unknown). D. C. mss. and prod. 1. p. 307.

Lin. syst. *Pentándria, Monogýnia.* Sepals unequal, running into the pedicel at the base. Petals unequal, lower one 4 or 5 times larger than the rest, gibbous at the base, and unguiculate, with a dilated obovate flat limb, which is convolute in æstivation, the rest a little longer than the calyx. Filaments dilated from the base, bearing the anthers low down; lobes of anthers usually drawn out into a bristle at the apex. Capsules generally trigonal, 3-valved; seeds usually angular. Herbs or subshrubs. Leaves generally alternate. Flowers erectish. Peduncles bibracteolate, not jointed, solitary, often racemosely-crowded at the top of the branches.

1 P. filifo'rmis (D. C. mss. and prod. 1. p. 307.) stem erect, undivided; leaves alternate, linear, quite entire; lower petal obovate, entire; sepals lanceolate, acute. ♃. ⊙. G. Native in New Holland about Port Jackson. Flowers small, blue?

Filiform Pigea. Pl. ¾ foot.

2 P.? Banksia'na (Ging. mss. and D. C. prod. 1. p. 307.) stem erect, puberulous; leaves alternate, oblong-linear, quite entire, with revolute margins, upper surface roughish, as well as the awl-shaped stipulas; lower petal much longer than the calyx; seeds elliptical, white, striated? ♄. G. Native of New South Wales. Vìola angustifòlia, Herb. Banks. Flowers small, blue? Perhaps the same as the preceding.

Banksian Pigea. Shrub 1 foot.

3 P.? calyci'na (D. C. mss. and prod. 1. p. 307.) stems branched; leaves linear, quite entire; lower petal lanceolate, acute; sepals ovate, acuminated. ⊙? G. Native in New Holland on the western coast. Flower small, blue?

Large-calyxed Pigea. Pl. ¾ foot.

4 P.? monope'tala (Ging. mss. and D. C. prod, 1. p. 307.) stems branched; leaves linear, quite entire; lower petal spatulate, emarginate, the rest hardly evident; sepals ovate. Ionídium monopétalum, Rœm. et Schult. syst. 5. p. 400.

One-petalled Pigea. Pl. ¾ foot.

Cult. The species may be grown in a mixture of loam and peat, and no doubt cuttings, if planted under a hand-glass in sand, will root readily, or they may be increased by seeds.†

IX. IONI'DIUM (*ιον, ion*, a violet, and *ειδος, eidos*, similar; resemblance). D. C. prod. 1. p. 307. Ionídii, spec. Vent. malm. p. 27. Sòlea, spec. Spreng.

Lin. syst. *Pentándria, Monogýnia.* Sepals small, unequal, running into the peduncle at the base, but not appendiculate, with membranous margins. Petals unequal, lower one 2 or 3 times longer than the rest, carinately-concave and a little gibbous at the base, unguiculate, gradually dilating into the limb, with the margin usually involute in æstivation. Stamens approximate; filaments scarcely oblong-dilated from the base, bearing the anthers low down; the 2 anterior ones are usually furnished each with a nectarial gland at the base. Capsule as in *Vìola*, but not elastic, falling off after maturity by the jointed part of the peduncle, 1-6, rarely 9-seeded. Cotyledons usually reniform; radicle short. Herbs or subshrubs. Leaves sometimes alternate, sometimes opposite, or the lower ones opposite and the upper ones alternate. Peduncles solitary, 1-flowered, furnished with 2 little bracteas above the middle and jointed. Flowers erectish. The roots of all the species are more or less emetic, The roots of several are used in Brazil as emetics under the name of *Poaya* or *Ipecacuanha*.

§ 1. *Lip stipitate, twice or thrice longer than the calyx.*

1 I.? ano'malum (H. B. et Kunth, nov. gen. amer. 5. p. 381.) t. 500.) puberulous; stem branched; rameal leaves alternate, lanceolate-oblong, acuminate, serrated, upper surface glabrous, under surface hoary; stipulas broad, ovate, acute; sepals ovate-acute, silky-pubescent; lip lanceolate, 4 or 5 times longer than the calyx, the rest of the petals ovate, acute. ♄. S. Native in woods near Turbaco in New Granada. Vìola prunifòlia. Willd. rel. in Rœm. et Schult. syst. 5. p. 391. Flowers white, rising before the leaves. Anthers linear-oblong; 2 of which are furnished with hooked, descending appendages, which are villous at the apex, and these are drawn in within the jointed concave spur.

Anomalous Ionidium. Tree 20 feet.

2 I. racemo'sum (Nees et Mart. act. bon. 12. p. 49.) herbaceous; stem erect; leaves lanceolate, serrated; racemes axillary, furcately divided, leafy at the base and naked at the top: flowers very minute. ♃. S. Native of Brazil. Stem smooth at the base. Leaves rather pubescent. Flowers white. Sepals ciliated.

Racemose Ionidium. Pl. 1 foot.

3 I. parietariæfo'lium (D. C. mss. and prod. 1. p. 308.) stem branched, pubescent; leaves alternate, elliptical, or ovate-lanceolate, acuminated, toothed, somewhat pubescent, two-coloured; stipulas awl-shaped, ciliated; sepals acuminated, ciliated; limb of lower petal somewhat rhomboid. ⊙? S. Native of South America. Flowers white or blue.

Var. α, Houstòni (D. C. prod. 1. p. 308.) leaves sharply serrated; stem hairy. Native about Vera Cruz and in Peru. Vìola frutéscens, Ruiz et Pav. ined.

Var. β, Bertèrii (D. C. prod. 1. c.) leaves rather serrated; stem pubescent. Native in St. Martha. Vìola melanospérma, Bertero ined. Seeds lenticular, ovate, dark, shining. Cotyledons reniform.

Péllitory-leaved Ionidium. Fl. July. Pl. 1 foot.

4 I. leptorhi'zum (D. C. mss. and prod. 1. p. 308.) stem simple or sparingly branched, smoothish; leaves alternate, glabrous, ovate, acute, toothed, tapering into the footstalk; stipulas linear-awl-shaped; sepals very acute. ⊙.? S. Native of Malabar and Tranquebar in sand.—Rheed. mal. 9. p. 119. t. 61.—Pluk. alm. t. 120. f. 8. Hardly differing from the preceding species. Two of the petals are rose-purple, the third blue.

Slender-rooted Ionidium. Fl. July. Pl. ¾ foot.

5 I. Cape'nse (Rœm. et Schult. syst. 5. p. 393.) stem suffruticose, erect; leaves alternate, obovate, obsoletely-toothed, pubescent; stipulas awl-shaped, ciliated; sepals acute, ciliated. ♄. G. Native of the Cape of Good Hope. Vìola Capénsis, Thunb. prod. 40. Vìola Massòni, herb. Banks. Flowers white.

Var. β, Owariénse (D. C. prod. 1. p. 308.) upper leaves lanceolate, somewhat crowded, under surface smoothish; sepals pubescent; lip very gibbous at the base. Native of Guinea in the kingdom of Waree. Flowers pale-blue.

Var. γ? Burmánni (D. C. prod. 1. c.) upper leaves oblong-lanceolate, smoothish beneath; lip obovate, gibbous at the base, pubescent on the outside. Native of the East Indies. Differing from *I. heterophýllum*, in the sepals being ciliated, not smooth. Flowers pale-blue.

Cape Ionidium. Fl. May, July. Clt. 1824. Shrub ½ to 1 ft.

6 I. heterophy'llum (Vent. malm. no. 27. in adn.) stem suffruticose, branched at the base; lower leaves obovate, upper ones linear-lanceolate, obsoletely toothed, pubescent; stipulas awl-shaped, rigid; sepals acuminated, glabrous. ♄. G. Native of China and Ceylon. Polýgala frutéscens, Burm. fl. zeyl. 195. t. 85? Flowers pale-blue.

Variable-leaved Ionidium. Shrub ½ to 1 foot.

7 I. buxifòlium (Vent. malm. p. 27. in adn.) stem herbaceous, diffuse; leaves alternate, obovate, entire, with revolute margins; stipulas awl-shaped, rigid; sepals acuminated, gla-

brous; lip gibbous at the base, roundish-truncate at the apex. ♃. S. Native of the island of Madagascar. Viola buxifòlia, Poir. dict. 8. p. 646.

Box-leaved Ionidium. Pl. ½ foot.

8 I. ENNEASPE'RMUM (Vent. malm. p. 27.) stem suffruticose, much branched at the base; leaves alternate, lanceolate, smoothish; stipulas awl-shaped, rigid; sepals acuminated, glabrous; lip —? seeds shining. ♄. S. Native of the East Indies.

Var. α, *Malabáricum* (D. C. prod. 1. p. 309.) stems decumbent; leaves sparingly serrated. ♄. S. Native of Malabar. —Rheed. mal. 9. p. 117. t. 60. Flowers rose-coloured, with deeper veins.

Var. β, *Zeylánicum* (D. C. prod. 1. p. 309.) stems ascending; leaves almost entire. ♄. S. Native of Ceylon. Viola enneaspérma, Lin. spec. 1327. fl. zeyl. no. 317. Flowers rose-coloured.

Nine-seeded Ionidium. Shrub ½ to ¾ foot.

9 I. LINEARIFÒLIUM (Vahl. ecl. amer. 2. p. 18.) stem erect; cauline leaves alternate, oblong, tapering at both ends; stipulas awl-shaped, rigid. ⊙? S. Native of the Caribbee Islands. Viola linearifòlia, Poir. dict. 8. p. 648? Perhaps a variety of I. stríctum. Flowers blue?

Linear-leaved Ionidium. Fl. July. Pl. ½ foot.

10 I. STRI'CTUM (Vent. malm. no. 27. in adn.) stems erect, branched at the base, puberulous; lower leaves opposite, oblong or lanceolate, tapering at the base, blunted at the apex; stipulas awl-shaped, rigid; sepals acuminated, glabrous; lip roundish; capsules roundish, trigonal; seeds ovate-roundish, blackish? ♃. S. Native of St. Domingo and New Spain. Viola strícta, Poir. dict. 8. p. 648. Flowers white?

Var. β; branches erect; leaves elongated, lower ones obtuse, tapering a great way at the base, smoothish. ♃. S. Native of Guadaloupe.

Straight Ionidium. Fl. May, July. Clt. 1820. Pl. ½ foot.

11 I. ANGUSTIFO'LIUM (H. B. et Kunth. nov. gen. amer. 5. p. 377.) stem woody, elongated, weak, glabrous, upper part branched; leaves opposite, linear-lanceolate, narrowed at the top, remotely serrulated, glabrous; stipulas minute; peduncles glabrous, racemosely-crowded on the branches, fructiferous ones 4 or 5 times shorter than the leaves; sepals lanceolate, acuminated; capsules roundish-ovate, trigonal, 3-4-seeded. ♄. S. Native in humid places near Carichana in woods about the Orinoco. Flowers blue?

Narrow-leaved Ionidium. Shrub 1-2 feet.

12 I. COMMU'NE (St. Hil. in mem. mus. 11. p. 469.) stem herbaceous or often suffruticose, pubescent; leaves alternate, intermediate ones lanceolate, acuminated, toothed, but entire at the base, hardly puberulous; stipulas small, linear, very entire; stamens glabrous; filaments 3 times shorter than the lobes of the anthers; sepals linear-lanceolate, acuminated; lip large, ovate-bluntish, downy on the outside. ♃. ♄.? S. Native of Brazil in old woods and coppices. Petals blue?

Common Ionidium. Fl. Jan. April. Pl. 1 to 4 feet.

13 I. SETI'GERUM (St. Hil. in mem. mus. 11. p. 470. t. 23. f. c.) stem suffruticose, pubescent; leaves alternate, oblong-lanceolate, acuminated, very acute, toothed, puberulous; stipulas and bracteas of the peduncles ciliately many-parted; sepals pinnatifidly ciliated; lip orbicular, pubescent. ♄. S. Native of Brazil in cultivated places, as well as in woods that have been cut down in the provinces of Rio Janiero and Minas Geraes. Petals green at the base, but violet, blue, or variegated with white and blue at the apex.

Bristle-bearing Ionidium. Fl. year. Shrub 1 foot.

14 I. SYLVA'TICUM (St. Hil. in mem. mus. 11. p. 472.) stem shrubby, pubescent; leaves alternate, intermediate ones ovate, acuminated, toothed, but very entire at the base, puberulous; stipulas small, linear, very entire; sepals linear-lanceolate, acuminated, acute, very entire; lobes of anthers almost equal in length to the filaments; lip somewhat rhomboid, pubescent on the outside. ♄. S. Native of Brazil in woods near the farm called Cana-braba, about 14 leagues from the town called Villa-do-principe. Petals very pale blue.

Wood Ionidium. Fl. April. Shrub 1 foot.

15 I. GUARANI'TICUM (St. Hil. in mem. mus. 11. p. 474.) stem suffruticose, glabrous; leaves lanceolate, acuminated, glabrous; stipulas small, linear, membranous, glabrous; sepals oblong-lanceolate, acuminated, acute, very entire; lip of flower orbicular, crenate. ♄. S. Native of Brazil in woods on the banks of the river Ibicui in the province called Messoes. Petals white.

Guaranitic Ionidium. Fl. Feb. Shrub 1 to 2 feet.

16 I. BI'COLOR (St. Hil. in mem. mus. 11. p. 475.) plant villous; stem suffruticose, almost simple; leaves lanceolate, acute, unequally toothed, cuneated at the base and very entire; stipulas linear, quite entire; racemes terminal, and often axillary; pedicels bractless; sepals entire, and very unequal; lip transversely elliptical, truncate at the apex, pubescent on the under surface ♄. S. Native of Brazil in pastures in the province of the Mission, chiefly near the village of St. Nicolas. Petals blue, with a yellow spot on the base of the lower one.

Two-coloured-lipped Ionidium. Fl. Feb. Shrub 1 to 1½ foot.

17 I. A'LBUM (St. Hil. in mem. mus. 11. p. 477.) stem shrubby, diffuse, pubescent; leaves alternate, lanceolate, acute at both ends, finely serrated, ciliated; stipulas scarious; peduncles bractless; sepals lanceolate-oblong, acuminated, quite entire, hairy, ciliated; lip somewhat rhomboid, very blunt, with rounded sides, hairy on the under surface. ♄. S. Native of Brazil, in old woods near the Farm called St. Miguel da Jiquitinhonha, at the northern extremity of the province of Minas Geraes. Petals white.

White-flowered Ionidium. Fl. June. Shrub ½ foot.

18 I. SCARIÒSUM (St. Hil. in mem. mus. 11. p. 478.) stem suffruticose, with hairy branches; leaves alternate, lanceolate, acuminated, and very acute, serrated, but very entire at the base, villous; stipulas linear-lanceolate, scarious; sepals oblong-linear, obtuse, pinnatifid, but entire at the apex, hispid; lip rather orbicular, obtuse, villous on the under surface. ♄. S. Native of Brazil in the province of Minas Geraes, near Itajuru de St. Miguel de Mato Dentro. Petals violaceous at the apex.

Scariose-stipuled Ionidium. Fl. Jan. Shrub 1 foot.

19 I. VILLOSI'SSIMUM (St. Hil. in mem. mus. 11. p. 480.) stem suffruticose, very villous; leaves alternate, lanceolate, acute at both ends, serrated, villous; stipulas quite entire, scarious; sepals pinnatifid, very hairy; lip large, semi-orbicular, cuspidate, obliquely-truncate at the base. ♄. S. Native of Brazil in the province of Minas Geraes. Petals cream-coloured?

Very-villous Ionidium. Shrub 1 foot.

20 I. POA'YA (St. Hil. in mem. mus. 11. p. 482.) plant very hairy; stem suffruticose, usually simple; leaves alternate, almost sessile, ovate, acutish, somewhat cordate at the base, obsoletely-toothed; stipulas linear, scarious, quite entire, hardly manifest; lip large, broad, obcordate; filaments bearded on the outside at the apex; processes of anthers membranous, small. ♄. S. Native of Brazil, plentiful in the fields on the western extremity of the province of Minas Geraes, chiefly near the town called Paracatu and the villages called St. Luzia de Goyaz and Meiaponte. Petals white or blue. Root emetic. This plant is called in Brazil *Poaya do Campo*.

Poaya Ionidium. Fl. April, Aug. Shrub 1 foot.

21 I. LANA'TUM (St. Hil. in mem. mus. 11. p. 482. t. 23. f. a.) plant woolly; stem simple; leaves alternate, intermediate ones elliptical, obtuse, with short points, quite entire; stipulas

linear-awl-shaped, quite entire, scariose; lip large, broad, obcordate; filaments longer than the lobes of the anthers. ♃. S. Native of Brazil in grassy fields near the village called Contendas, in the desert of the river St. Francisco. Petals pale-blue.

Var. β, dentàtum (St. Hil. l. c. p. 484.) lower leaves obsoletely-toothed.

Woolly Ionidium. Fl. Sept. Pl. ½ to ¾ foot.

22 I. NA'NUM (St. Hil. in mem. mus. 11. p. 484. t. 23. f. b.) stem dwarf; leaves alternate, upper ones sometimes opposite, acutish, toothed, but quite entire at the base, pubescent or pilose; footstalks hairy; stipulas small, linear, acute; sepals lanceolate, acuminated, quite entire, hairy; lip of flower large, transversely-elliptical, truncate and toothed at the apex. ♄. S. Native of Brazil in dry pastures, near the Fort called Belem, in the province Rio Grande do Sul. Petals white, but yellow at their base.

Dwarf Ionidium. Fl. Jan. Shrub 2 or 3 inches.

23 I. BIGIBBÒSUM (St. Hil. in mem. mus. 11. p. 418. t. 23. f. d.) stem shrubby; leaves opposite, oblong-lanceolate, acuminated, obsoletely toothed, glabrous, with the middle nerve pubescent; flowers all axillary; sepals finely ciliated; lip of flower ovate-oblong, obtuse, bigibbose at the base of the claw. ♄. S. Native of Brazil in old woods near the town of St. Carlos, in the province of St. Paul. Petals greenish.

Bigibbous-lipped Ionidium. Fl. Oct. Shrub 4 to 6 feet.

24 I. OPPOSITIFÒLIUM (Rœm. et Schult. syst. 5. p. 395. St. Hil. in mem. mus. 11. p. 487.) stem suffruticose, branched; leaves opposite, almost sessile, lanceolate-linear, remotely serrated, but very entire at the apex, with scabrous margins; stipulas awl-shaped; flowers in racemes; calyx glabrous; lip of flower transversely-elliptical, with rounded sides. ♄. S. Native of Brazil in the sand on the banks of the river Jiquitinhonha, on the confines of the provinces of Bahia and Minas Geraes. Vìola oppositifòlia, Lin. spec. 1327. Petals violaceous.

Opposite-leaved Ionidium. Fl. July. Pl. ½ to 1 foot.

§ 2. *Lip almost sessile, hardly twice the length of the calyx.*

25 I. ATROPURPU'REUM (St. Hil. in mem. mus. 11. p. 490.) stem suffruticose; lower leaves ovate, upper ones lanceolate, all acuminated and acute, obsoletely serrated, glabrous; stipulas caducous; flowers all racemose, small; sepals finely ciliated; lip of flower orbicular, scarcely larger than the lateral petals. ♄. S. Native of Brazil on the margins of woods on the mountain called Serra-da-Estrada-Nova, a little distance from Rio Janeiro; also in cultivated places, and in the cut down woods called Capueiras, near a farm called Uba. Lip of flower dark-purple.

Dark-purple-lipped Ionidium. Fl. Nov. Feb. Shrub 1 to 2 ft.

26 I. THESIIFÒLIUM (D. C. mss. et prod. 1. p. 309.) stem erect, simple, glabrous; leaves alternate, narrow, very long, glabrous, quite entire; stipulas and sepals awl-shaped; petals scarcely longer than the calyx. ♃. S. Native of Senegal and other parts of Guinea. Vìola thesiifòlia, Poir. dict. 8. p. 649. Flowers very small, pale-blue.

Thesium-leaved Ionidium. Fl. June, July. Clt. 1823. Pl. ½ ft.

27 I. LINIFÒLIUM (D. C. mss. et prod. 1. p. 309.) stem erect, puberulous; leaves alternate, linear, narrow, smooth; stipulas awl-shaped. ⊙? S. Native of Madagascar. Vìola linifòlia, Poir. dict. 8. p. 647. Flowers pale-blue.

Flax-leaved Ionidium. Fl. June, July. Pl. ½ foot.

28 I. POLYGALÆFÒLIUM (Vent. malm. t. 27.) stems branched, diffuse, procumbent; branches puberulous; leaves opposite, lanceolate, rather entire; stipulas lanceolate, one-half shorter than the leaves; sepals ovate-oblong, acute, pubescent; lip spatulate, rounded at the apex, exceeding the calyx; nectarial scales fleshy; capsules roundish, trigonal, 1-5-seeded; seeds somewhat globose, shining, black, with the sides flattened; cotyledons reniform. ♄. S. Native of New Spain, and near Mexico. H. B. et Kunth. nov. gen. amer. 5. p. 376. t. 496. Sòlea verticillàta, Spreng. in Schrad. journ. bot. 1800. vol. 2. p. 190. t. 6. Vìola verticillàta, Orteg. dec. 4. p. 50. Flowers greenish-yellow or white.

Milkwort-leaved Ionidium. Fl. April, Aug. Clt. 1795. Shrub 1 foot.

29 I. URTICÆFÒLIUM (Mart. mat. med. bras. ex Spreng. syst. append. p. 98.) branches covered with clammy pubescence; leaves almost sessile, somewhat cordate, ovate, acute, serrated, smooth; peduncles few-flowered; sepals entire; lower petals square. ♃. S. Native of Brazil. Sòlea urticæfòlia, Spreng. l. c. Flowers white or bluish. Root emetic.

Nettle-leaved Ionidium. Pl. 1 foot.

30 I. GRA'CILE (Moc. et Sesse, fl. mex. ined. icon. and D. C. prod. 1. p. 309.) stems erectish, almost simple; leaves alternate, oblong, entire; stipulas ovate-lanceolate, one-half shorter than the leaves; petals scarcely longer than the calyx, lower one hardly larger than the rest; seeds ovate, black. ♃. S. Native of Mexico. Perhaps a variety of *I. polygalæfòlium*.

Slender Ionidium. Pl. ½ foot.

31 I. VISCI'DULUM (H. B. et Kunth, nov. gen. amer. 5. p. 377.) stem woody, erect, branched, clammy; leaves opposite, lanceolate, glabrous, remotely serrulate; stipulas awl-shaped, minute; sepals ovate-lanceolate, glabrous; lip with a long claw, very broad, ovate, acute, dilated and concave at the base; the lateral petals length of the claw of the superior petal; 2 anterior stamens, each furnished at the base with a gland; terminal membranes acute. ♄. S. Native in humid sandy places near Angustura on the banks of the Orinoco. Flowers sweet-scented, white; but with the lip spotted with yellow at the base.

Viscid-branched Ionidium. Shrub ½ to 1 foot.

32 I. RIPA'RIUM (H. B. et Kunth, nov. gen. amer. 5. p. 378.) stem herbaceous, erect, somewhat branched, pubescent; lower leaves opposite, lanceolate, crenate-serrated; glabrous, somewhat ciliated; stipulas awl-shaped, minute; sepals lanceolate, acuminated or awl-shaped, ciliated; lip unguiculate, ovate-roundish, saccate and concave at the base; lateral petals one-half shorter than the rest, all ciliated towards the base; filaments almost wanting, 2 anterior ones furnished each with a scale-formed gland; terminal membranes acute; capsules ovate-globose, somewhat compressed, shining, brown. ⊙. S. Native of the kingdom of New Granada near Angostura de Carare, on the banks of the river Magdalena, at the height of 360 feet. I. attenuàtum, Willd. herb. ex Rœm. et Schult. syst. 5. p. 402. Flowers blue.

River-side Ionidium. Fl. June, July. Pl. ½ to 1 foot.

33 I. VERBENA'CEUM (H. B. et Kunth, nov. gen. amer. 5. p. 379. t. 497.) stem herbaceous, erect, somewhat branched, pubescent; leaves alternate, ovate-elliptical, acute, running into the footstalk at the base, crenate-serrated, hairy on both surfaces; stipulas linear-awl-shaped, puberulous, somewhat longer than the footstalks of the leaves; sepals lanceolate, acuminated, ciliated; lip with a long claw, roundish-elliptic, furnished with 2 gibbosities at the base, twice or thrice longer than the calyx; lateral petals a little longer than the calyx; filaments short, 2 inferior, gibbous at the base, in consequence of each being furnished with a gland; terminal membranes emarginate. ⊙. S. Gathered in the gardens of Mexico. Flowers pale-blue.

Vervain-like Ionidium. Fl. May, July. Clt. 1823. Pl. ½ ft.

34 I. CIRCÆOI'DES (H. B. et Kunth, nov. gen. amer. 5. p. 379. t. 498.) stem herbaceous, erect, simple, puberulous; leaves opposite, ovate, acuminated, serrate, glabrous, rounded at the base; stipulas glabrous, linear, falcate, almost equalling the footstalks in length; sepals ovate-lanceolate, acuminated, glabrous; lip

with a long claw, roundish-ovate, obtuse, 5 times longer than the calyx; lateral petals 3 times shorter than the lower one, oblong, falcate, narrowed in the middle, hence they appear as if furnished with an obtuse lobule on each side below; filaments short, 2 inferior ones furnished each with a gland at the base; terminal membranes emarginate; capsules glabrous, roundish-ovate, trigonal, 3 times longer than the calyx, 6-seeded, with oblong valves; immature seeds globosely-ovate, flattish, carunculate. ⊙. S. Native near Guayaquil in shady places on the shore of the Pacific ocean. Willd. herb. ex Rœm. et Schult. syst. 5. p. 401. Flowers violaceous.

Circæa-like Ionidium. Fl. June, July. Pl. 1 foot.

35 I. glutino'sum (Vent. malm. no. 27. in adn.) stems erectish, pubescent, clammy; leaves ovate-lanceolate, tapering a great way into the footstalk, sharply-toothed; stipulas awl-shaped, shorter than the footstalks of the leaves; lip obcordate. ♃. G. Native of Buenos Ayres. Viola glutinòsa, Poir. dict. 8. p. 647. Calyx, when dry, greenish, not violaceous, as in the following, to which it is very much akin.

Clammy Ionidium. Fl. Pl. ½ foot.

36 I. parvifloʻrum (Vent. malm. p. 27. in adn.) shrubby, branched, diffuse; branches elongated, puberulous; leaves alternate, ovate, serrated, tapering a little way into the footstalk; stipulas lanceolate, awl-shaped, scarcely the length of the footstalks of the leaves; peduncles glabrous, rising above the leaves; sepals ovate-lanceolate, acute; lip 3 times longer than the calyx, ovate, 2-lobed, with the lobes roundish and spreading; nectarial scales somewhat clavate; capsules roundish, trigonal, 3 times longer than the calyx, 3-5-seeded. ♄. S. Native in the warmer regions of South America near Santa-Fe-de-Bogota. H. B. et Kunth. nov. gen. amer. 5. p. 375. Viola parviflòra, Lin. fil. suppl. 396. Flowers purplish. The roots are yellow, and are used instead of Ipecacuanha in the southern parts of the province of St. Paul in Brazil as well as in Peru.

Var. β? branches very long. Viola filifórmis, Ruiz, et Pav. ined. Native of Peru.

Small-flowered Ionidium. Fl. June, July. Shrub procumbent.

37 I. microphyʻllum (H. B. et Kunth, nov. gen. amer. 5. p. 374. t. 495.) shrubby, branched, diffuse; branches pubescent; leaves opposite, elliptical-oblong, acute, serrated, rather pilose, ciliated; peduncles 3 times longer than the leaves, marked with a puberulous line; stipulas lanceolate, acuminated, ciliated, 3 times longer than the footstalks of the leaves; sepals ovate-oblong, acute; lip somewhat fiddle-shaped; double the length of the calyx; nectarial scales somewhat ovate, capsules roundish-elliptical, trigonal, 3-6-seeded. ♄. S. Native among stones near Lactacunga in Quito, at the height of 4440 feet. Viola microcéphala, Bonpl. ined. Viola microphýlla, Willd. herb. Viola parviflòra, Rœm. et Schult. syst. 5. p. 391. Flowers purplish.

Small-leaved Ionidium. Shrub procumbent.

† *Species not sufficiently known.*

38 I.? Claytonioiʻdes (Rœm. et Schult. syst. 5. p. 402.) stem furnished with one perfoliate leaf. Native —?

Claytonic-like Ionidium. Pl. ½ foot.

39 I.? ereʻctum (Ging. mss. and D. C. prod. 1. p. 311.) stem straight, filiform, roughish; leaves linear, mucronate, remotely denticulated, straight; stipulas lanceolate, ciliated, adpressed; flowers solitary, axillary, nodding. Native of the East Indies. Viola erécta, Roth. nov. spec. 165. Flowers very small.

Erect Ionidium. Pl. ½ foot.

40 I.? suffrutico'sum (Ging. mss. and D. C. prod. 1. p. 311.) stems procumbent, roughish; leaves elliptic-lanceolate, serrated, somewhat pubescent; stipulas lanceolate, pilose, at length spreading, form of prickles; flowers axillary, equal behind, nodding. ♄.? S. Native of the East Indies. Viola suffruticòsa, Roth. nov. spec. 165.

Suffruticose Ionidium. Shrub procumbent.

41 I.? frute'scens (Ging. mss. and D. C. prod. 1. p. 311.) stems ascending, roughish, shrubby at the base; leaves oblong-lanceolate, mucronate, glabrous, somewhat ciliated, serrated; stipulas setaceous, erect, pilose; flowers axillary, solitary, equal behind, nodding. ♄.? S. Native of the East Indies. Viola frutéscens, Roth. nov. spec. 167.

Frutescent Ionidium. Shrub ½ foot.

42 I.? brevicau le (Mart. in litt. and D. C. prod. 1. p. 311.) stem short, ascending; leaves crowded, almost sessile, alternate, ovate-lanceolate, acute, serrated, pubescent. Native of Brazil.

Short-stemmed Ionidium. Pl. ¼ foot.

43 I. linea'tum (Ging. mss. and D. C. prod. 1. p. 311.) branches procumbent; leaves opposite, ovate, lined, stalked, under surface pubescent; stipulas awl-shaped. ♄.? S. Native of Cuba. Viola lineàta, Orteg. dec. 4. p. 49. Lower petal or lip violaceous, with a white claw; lateral ones violaceous, upper one white.

Var. β? lower leaves obovate, smoothish. Native of Cuba. Viola lineàta, herb. hort. monsp.

Lined-leaved Ionidium. Shrub procumbent.

44 I.? calceola'rium (Ging. mss. and D. C. prod. 1. p. 311.) stem branched, pilose; leaves opposite, elliptic-lanceolate, tapering into the footstalk, somewhat stem-clasping; stipulas awl-shaped; sepals awnedly-acuminated, glabrous. ⊙. S. Native of Mexico. Calceolària, Moc. et Sesse, fl. mex. ined. not of Poir. Perhaps the Viola calcària labello obovato retuso of Lœfl. itin. p. 183. no. 1.

Slipper-flowered Ionidium. Pl. 1 foot.

45 I.? longifo'lium (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 311. but not of Rœm. et Schult.) stems simplish; leaves opposite, lanceolate-linear, rarely serrated, very acute; stipulas lanceolate, somewhat longer than the footstalks; peduncles 3 times longer than the leaves. ♃. S. Native of Mexico.

Long-leaved Ionidium. Pl. 1 foot.

Cult. These plants grow best in a mixture of loam, sand, and peat, and young cuttings of the stove and green-house perennials and shrubs will root freely if planted in sand under a bell-glass. The annual species may be sown in pots and plunged in a gentle hot-bed, and when the plants have attained two or three inches in height, they should be planted separately into small pots, and shifted from time to time as they grow, and about the end of June they may be removed into the green-house, where they will ripen their seed: or they may be planted out in the open border about the end of May, in front of a south wall.

X. HYBA'NTHUS (from *υβος, hybos,* a tuber, and *ανθος, anthos;* in allusion to the form of the spur.) Jacq. amer. 77. H. B. et Kunth, nov. gen. amer. 5. p. 385. D. C. prod. 1. p. 311.

Lin. syst. *Pentándria, Monogýnia.* Sepals unequal, running into the pedicel at the base, but not appendiculated. Petals unequal; lower one saccate at the base, longer than the rest, channelled in the middle and dilated at the apex into a 2-lobed limb, the rest shorter and 3-nerved. Stamens oblong, connate between themselves into a disk at the base; anthers inserted low down, two lower ones with contiguous obliterated cells, and furnished each with a nectarial shell-formed gland at the base; these glands are drawn in within the swelling of the lower petal. Capsules obovate, few-seeded. Inelegant, usually spiny shrubs, with the appearance of *Rándia.* Leaves scattered, those on the branches alternate, and somewhat fasciculate on the stems. Peduncles on the sides, or lateral, solitary, or many crowded together, bifid at the apex. Flowers pedicellate,

whitish, with the pedicels bracteate at the base and jointed above the base. St. Aug. St. Hilaire considers *Pombàlia* and *Hybánthus* to be identical with *Ionídium*.

1 H. Havane'nsis (H. B. et Kunth, l. c. p. 385. t. 494.) stem erect, spiny, branched; leaves oblong, remotely serrated; flowers whitish; lower petal 2-lobed at the apex; peduncles bifid, somewhat racemose. ♄. S. Native near Havanah in the island of Cuba.

Var. α, *Jacquiniànus* (D. C. prod. p. 311.) leaves emarginate at the apex, tapering at the base; sepals ovate, 3 lower ones gibbous at the base; flowers so small as scarcely to be examined with the naked eye; petals, 4 of which are ovate and obtuse, the fifth one is oblong, attenuate in the middle and bifid at the apex, a little longer than the rest; style awl-shaped. ♄. S. Native in wooded mountains. Ionídium Jacquiniànum, Rœm. et Schult. syst. 5. p. 397.

Var. β, *Humboldtiànus* (D. C. prod. 1. p. 312.) leaves entire at the apex, scarcely stalked; stipulas ovate, obtuse; flowers in racemose fascicles, larger than those of var. α; sepals oblong, obtuse, smooth; lower petal saccate and concave at the base, 3 times longer than the calyx, with a dilated 2-lobed limb, lateral ones oblong, obtuse, obsoletely 3-lobed, double the length of the calyx, upper ones obtuse, hardly shorter than the lateral ones; anthers somewhat cordate; ovary roundish-ovate, glabrous, 9-seeded; style jointed and somewhat hooked at the apex.

Havanah Hybanthus. Shrub 2 to 7 feet.

2 H.? Mexica'nus (Ging. mss. and D. C. prod. 1. p. 312.) stem prickly; leaves oblong; lower petal acuminated at the apex; peduncles 1-flowered, in fascicles. ♄. S. Native of Mexico. Moc. et Sesse, fl. mex. icon. ined. Flowers whitish?

Mexican Hybanthus. Shrub 1 foot.

Cult. These shrubs may be grown in a mixture of loam, sand, and peat; and young cuttings will root freely under a bell-glass if planted in sand, and placed in a moderate heat.

XI. ANCHIE'TEA (in honour of P. Anchietea, a very celebrated Brazilian Jesuit, who wrote on the plants of the province of St. Paul in Brazil.) St. Hil. in mem. mus. 11. p. 464. pl. usu. bras. t. 18.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx deeply 5-parted, unequal. Petals 5, very unequal, two upper ones smallest, two intermediate ones longer, lowest one largest, and unguiculate, with a spur at the base. Anthers almost sessile, alternating with the petals, two lowest ones on very short filaments, each drawn out into a filiform appendage, which is bent back into the spur. Ovary superior. Stigma simple. Capsule large, bladdery, inflated, obtuse, 1-celled, 3-valved, many-seeded. Valves membranaceous, bearing the seeds on the middle. Seeds in 2 rows, large, very flat, emarginate at the umbilicus, and girded by a broad membrane.—Shrubs with alternate, stalked, stipulate leaves. Stipulas twin, lateral, caducous. Flowers axillary, solitary, or in fascicles.

1 A. saluta'ris (St. Hil. l. c. p. 465.) leaves ovate, acute, crenated; flowers in axillary fascicles; upper petal longer than the calyx; labellum ovate; spur incurved. ♄. S. Native of Brazil, in the province of St. Paul. The roots of this shrub are used by many persons in the neighbourhood of Rio Janeiro, as a cathartic. It is used with success in eruptions of the skin. Flowers whitish.

Salutary Anchietea. Shrub 6 feet.

2 A. pyrifòlia; leaves ovate, acute, crenated; flowers in axillary fascicles; upper petal longer than the calyx; labellum obovate; spur incurved. ♄. S. Native of Brazil about Rio Janeiro. Noiséttia pyrifòlia, Mart. fl. bras. 1. p. 24. t. 16. Flowers whitish, veined with red at the base; lower petal obovate.

Pear-leaved Anchietea. Fl. July, Aug. Clt. 1826. Shrub cl.

Cult. For cultivation and propagation see *Hybánthus*.

Tribe II.

ALSODI'NEÆ (R. Br. congo. p. 21. D. C. prod. 1. p. 312.) Petals equal between themselves. Stamens usually joined together at their base, or adnate to the inner side of an urceolus, which is situated between the petals and the stamens. According to Aug. St. Hilaire (see mem. mus. 11. p. 493.) *Alsòdea*, *Ceranthèra*, and *Rinòria* are not generically distinct.

XII. GONOHO'RIA (*Gonohorie* is the name of *Gonohòria flavéscens* in Guiana.) D. C. mss. and prod. 1. p. 312. Gonohòria, Passoúra and Riàna, Aubl. guian. 1. p. 237 and 239. t. 95 and 94. and app. p. 21. t. 380.

Lin. syst. *Pentándria*, *Monogýnia*. Sepals imbricate. Petals convolute in æstivation. Stamens free, approximate; filaments on short stipes, dilated at the apex into a strap, furnished each on the outside with an appendiculate erect scale, and bearing the anthers a little higher up; lobes of anther bristly at the apex. Style flexuous, awl-shaped; stigma obtuse. Ovary villous. Capsule 3-valved, with the valves few-seeded. Seeds according to Aublet globose. Shrubs with opposite or alternate leaves. Flowers in axillary or terminal racemes. Pedicels very short, erect, 1-flowered, furnished with a bractea at the base of each, and 2 bracteoles in the middle. Flowers small, white. Stipulas deciduous.

1 G. Ria'na (D. C. mss. and prod. 1. p. 312.) leaves ovate, serrated, acuminated at the apex; scales of stamens acuminated; racemes spike-formed. ♄. S. Native in the woods of Guiana about Arauren. Riàna Guianénsis, Aubl. guian. 1. p. 237. t. 94. Flowers white. *Riana* is probably the name of the tree in Guiana.

Riana Gonohoria. Shrub 10 feet.

2 G. ulmifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 387. t. 491.) leaves twin or tern, but somewhat opposite at the top of the branchlets, oblong, acuminated, toothed, smooth, upper surface shining, with the nerves and veins puberulous; racemes terminal, solitary, branched, 2 or 3 times shorter than the leaves. ♄. S. Native of New Granada on the banks of the river Magdalena. Sepals lanceolate, ciliated. Petals 2 or 3 times longer than the calyx, oblong, obtuse, veined, with the veins somewhat parallel, flat, and whitish. Terminal membranes of stamens rounded at the apex. Scales wanting on the lower stamens? Ovary triquetrous, pilose, 3-seeded. Capsules obovate, turbinate, triquetrous, rather pilose or smooth and brown at the apex. Seeds somewhat globose, with the sides hardly compressed, smooth, glabrous, marked by a longitudinal furrow from the hilum to the opposite faveola. Flower whitish?

Elm-leaved Gonohoria. Shrub 10 feet.

3 G. Passou'ra (D. C. mss. and prod. 1. p. 312.) leaves ovate, almost entire, with a short acumen at the apex; sepals lanceolate, acute; scales of stamens acute. ♄. S. Native in the woods of Guiana. Gonohòria flavéscens, Aubl. guian. 1. p. 239. t. 93. Passoúra, Aubl. guian. suppl. p. 21. t. 380. *Passoura* is the name of the tree in Guiana. Flowers yellow.

Passoura Gonohoria. Shrub 6 feet.

4 G. Lobolo'ba (St. Hil. in mem. mus. 11. p. 494.) leaves alternate and opposite, crowded at the tops of the branches, oblong-lanceolate, narrow, acute, obsoletely-serrated; racemes simple; pedicels puberulous; scales hardly manifest at the base of the stamens; seeds fixed to the base of the placentas. ♄. S. Native of Brazil near Rio Janeiro. Alsòdea physíphora, Mart.

fl. bras. 1. p. 29. t. 20. Physíphora lævigàta, Sol. mss. The green leaves are very mucilaginous, and have an herbaceous taste, the negroes in many of the cantons in the environs of Rio Janeiro eat them with their food. M. Aug. St. Hilaire is of opinion that the leaves would acquire a more agreeable taste if the shrub was planted in good soil under the shade of trees, in order to blanch them. *Lobolòba* is the Brazilian name of the shrub.

Lobolobo Gonohoria. Fl. Sept. Nov. Shrub 6 feet.

5 G. castaneæfòlia (St. Hil. l. c. p. 495.) leaves alternate and opposite, crowded at the top of the branches, oblong; lanceolate sharply serrated, mucronate, with the lateral nerves parallel, rather prominent; racemes compound, rather loose, pubescent; urceolus cup-shaped? girding the ovary. ♄. S. Native of Brazil in hedges not far from Rio Janeiro.

Chesnut-leaved Gonohoria. Fl. Aug. Shrub 6 feet.

6 G. racemo'sa; leaves opposite, oblong, acuminated, quite entire, smooth on both surfaces; racemes opposite, elongated; pedicels cymose; filaments lanceolate, acute, serrulated; cells of anthers horned. ♄. S. Native of Brazil. Alsòdea racemòsa, Mart. fl. bras. 1. p. 29. t. 20. Flowers small, white.

Racemose-flowered Gonohoria. Fl. Nov. Dec. Shrub 6 feet.

7 G. cu'spa (H. B. et Kunth, 7. p. 242. under *Gonòria.*) leaves elliptical-oblong, obtuse, quite entire, smooth, shining above, upper ones opposite; peduncles simple, bracteate. ♄. S. Native of New Granada. Alsòdea Cúspa, Spreng. syst. append. p. 99. Flowers white, small. *Cuspa* is the name of the tree in New Granada, where its bark is celebrated for its frebrifugal qualities both in powder and in decoction.

Cuspa Gonohoria. Tree 20 feet.

8 G. Megapota'mica; leaves elliptical, oblong, quite entire, reticulately veined, rather pubescent beneath; peduncles cymiferous, axillary, bifid; filaments bearded on the back. ♄. S. Native of Brazil at Rio Grande. Alsòdea, Spreng. syst. app. p. 99.

Rio Grande Gonohoria. Shrub 6 feet.

Cult. The species of the genus *Gonohòria* will grow well in a mixture of loam and sand, and young cuttings will root freely under a bell-glass if planted in sand. None of the species have yet been introduced to the gardens.

XIII. RINO'REA (*Rinori* is the name of *R. Guianénsis* in Guiana.) Aubl. guian. 1. p. 235. t. 93. D. C. prod. 1. p. 312.

Lin. syst. *Pentándria, Monogýnia.* Character the same as *Gonohòria*, but with the filaments dilated from the base and joined into an urceolus, girding the ovary, and bearing the anthers lower down, approximate. Middle-sized trees. Leaves alternate, stipulate; stipulas deciduous. Flowers in racemes; racemes axillary or terminal, loosely panicled. Pedicels drooping, 1-flowered, bearing a bractea at the base of each, with two smaller ones toward the middle, and jointed. Flowers small, white. Ovary ovate, 3-lobed, 1-celled, 3-seeded. According to St. Hilaire this genus does not differ from *Gonohòria.*

FIG. 65.

1 R. Guiane'nsis (Aubl. guian. 1. p. 235. t. 93.) flowers in compound racemes; leaves deeply-serrated. ♄. S. Native of Guiana and Brazil. Gonohòria Rinòria, St. Hil. in mem. mus. 11. p. 495. Alsòdea paniculàta, Mart. fl. bras. p. 30. t. 21.

Guiana Rinorea. Tree 14 feet.

2 R.? integrifòlia (Ging. mss. and D. C. prod. 1. p. 313.) peduncles solitary or in pairs, 1-flowered; leaves entire. ♄. S. Native of Brazil. Gonohòria alternifòlia, Spreng. new entd. 2. p. 151. Flowers whitish.

Entire-leaved Rinorea. Tree 15 feet.

Cult. The species of this genus should be cultivated in the same manner as *Gonohòria*, which see.

XIV. ALSO'DEA (from αλσωδης, *alsodes*, leafy; plants thickly beset with leaves.) Pet. Th. hist. veg. afr. 2. p. 55. t. 17 and 18. nov. gen. madag. p. 55. D. C. prod. 1. p. 313.

Lin. syst. *Pentándria, Monogýnia.* Sepals acute, imbricate, 3 exterior and 2 interior. Petals alternate, longer than the sepals, twisted in æstivation. Stamens alternating with the petals; filaments loosened from or adnate to the urceolus which girds the ovary, hence dilated into ligulæ, not unguiculated, bearing the anthers at the base of those ligulæ, exceeding the ovary in length; lobes of anther usually drawn out at the apex into bristly appendages. Urceolus simple on the outside, or girded or furnished with various appendages. Ovary simple. Style club-shaped. Capsule covered with the permanent calyx and corolla, obversely turbinate, bluntly 3-sided. Seeds one or two in each valve. Cotyledons orbicular.—Shrubs or trees from Madagascar. Leaves usually alternate, feather-nerved; stipulas small, deciduous. Flowers small, whitish, racemose; racemes axillary and terminal. Pedicels bracteate, jointed.

§ 1. *Urceolus simple.*

1 A. pauciflòra (Pet. Th. l. c. p. 57. f. 17.) urceolus of stamens simple; leaves wedge-shaped on short footstalks; flowers few, somewhat corymbose; pedicels reflexed. ♄. S. Native of Madagascar in shady places.

Few-flowered Alsodea. Shrub 4 feet.

2 A. arbo'rea (Pet. Th. l. c. p. 57.) urceolus of stamens simple; leaves on long footstalks, deflexed; flowers panicled. ♄. S. Native of Madagascar.

Tree Alsodea. Clt. 1823. Tree 20 feet.

§ 2. *Urceolus girded.*

3 A. angustifo'lia (Pet. Th. l. c. p. 57. t. 17. f. 1.) urceolus of stamens girded; leaves oblong-lanceolate, toothed; racemes spiked. ♄. S. Native of Madagascar.

Narrow-leaved Alsodea. Shrub 6 feet.

4 A. latifo'lia (Pet. Th. l. c. p. 57. t. 18. f. 2.) urceolus of stamens girded; leaves ovate, obtusely-acuminated; racemes glabrous, dense. ♄. S. Native of Madagascar.

Broad-leaved Alsodea. Clt. 1823. Shrub 6 feet.

5 A. pube'scens (Pet. Th. l. c. p. 57. t. 18. f. 3.) urceolus of stamens girded; leaves ovate, cuneated at the base, serrated; racemes loose, pubescent. ♄. S. Native of Madagascar.

Pubescent-racemed Alsodea. Shrub 6 feet?

Cult. The species of this genus will thrive best in a mixture of loam and sand, and young cuttings will strike root under a bell-glass if planted in a pot of sand, placed in heat.

XV. CERANTHE'RA (κερας, *keras*, a horn, and ανθηρα, *anthera*, an anther; in allusion to the lobes of the anthers being terminated by a bristle.) Beauv. fl. ow. 2. p. 11. t. 65. D. C. prod. 1. p. 313.—Passàlia, Banks herb. ex Brown, congo, p. 21. Alsòdea species, Spreng.

Lin. syst. *Pentándria, Monogýnia.* Sepals acute. Petals lanceolate, twice the length of the sepals. Urceolus toothed, joined with the petals at the base, situated between the petals and stamens. Filaments unguiculate at the base; hence dilated into petal-like scales at the apex, bearing the anthers high up at the base of the scales; lobes of anthers bristly; claws of filaments adnate to the urceolus, but free at the top. Ovary ovate. Capsules unknown.—Shrubs. Leaves alternate,

broad. Flowers in panicled racemes; pedicels bracteate. Flowers small, greenish-yellow.

Obs. From the figures of Beauvais, fl. ow. l. c. the structure of the stamens appears to be the same as those of *Gonohòria*, but differs in the stamens being fixed to the inner parietes of the urceolus, not free as in *Gonohòria*. It differs from *Alsòdea* as *Rinòria* does from *Gonohòria*, in the filaments being unguiculate, not dilated from the base, and bearing the anthers high up, not low down.

1 C. denta'ta (Beauv. fl. ow. et ben. 2. p. 11. t. 65.) leaves ovate-lanceolate, toothed; petals lanceolate-ovate. ♄. S. Native of Buonopozo in the kingdom of Waree, and in many other parts of Guinea, Sierra Leone, Cape Coast, and the Island of St. Thomas, Isles de Los, &c. Flowers small, yellowish-white.

Toothed-leaved Ceranthera. Fl. March, April. Clt. 1824. Shrub 6 feet.

2 C. subintegrifo'lia (Beauv. l. c. t. 66.) leaves lanceolate-oblong, rarely with sinuated margins; petals ovate. ♄. S. Native about the town of Waree and many other parts of Guinea. Flowers white.

Subentire-leaved Ceranthera. Fl. Ju. Jul. Clt. 1824. Sh. 6 ft.

Cult. These shrubs will thrive best in a mixture of loam and sand, and young cuttings will root if planted in sand under a bell-glass, plunged in heat.

XVI. PENTA'LOBA (from πεντε, *pente*, five, and λοβος, *lobos*, a lobe; in allusion to the 5-lobed berry.) Lour. coch. p. 154. D. C. prod. 1. p. 314.

Lin. syst. *Pentándria*, *Monogýnia*. Sepals 5, lanceolate, erect, pilose. Petals 5, lanceolate, somewhat reflexed at the apex, conniving into a little bell at the base. Nectary 5-toothed, erect; filaments 5, filiform, flattish, standing upon the incisures of the nectary, almost equal in length to the corolla. Ovary pilose. Style short, pilose; stigma simple. Berry roundish, 5-lobed, 1-celled, 5-seeded; seeds ovate. A middle-sized tree with alternate leaves, and pale, sessile, crowded flowers. Perhaps a congener of *Alsòdea?*

1 P. se'ssilis (Lour. fl. coch. p. 154.). ♄. G. Native on mountains in Cochin-China. Flowers whitish.

Sessile-flowered Pentaloba. Tree 20 feet?

Cult. This tree should be grown in a mixture of loam and peat. Young cuttings will root under a bell-glass, if planted in sand.

XVII. SPATULA'RIA (from *spatula*, a spatula; form of petals). St. Hil. in mem. mus. 11. p. 491. t. 24.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx small, 5-parted, rather unequal (f. 66. *c.*), deciduous. Petals 5, elliptical, inserted at the base of the calyx (f. 66. *b.*), with long claws, spatulate, rather unequal, deciduous, with the claws conniving into a tube (f. 66. *b.*). Stamens 5 (f. 66. *a.*), inserted in the base of calyx and alternating with the petals, deciduous; filaments flat; anthers drawn out at the apex into a membranous point (f. 66. *a.*) affixed by their base, opening lengthwise from the front to the sides. Style 1, tapering at the base (f. 66. *e.*), and denticulated at the apex. Stigma hardly manifest (f. 66. *f.*). Ovary free, 1-celled, many-seeded (f. 66. *d.*); ovulæ numerous, fixed to 3 parietal placentas. Shrub. Leaves alternate and opposite, simple, toothed. Stipulas caducous. Peduncles 1-4, terminal, bracteate at the base, 1-3-flowered; pedicels erect, jointed, and when there are three together they constitute a little umbel.

FIG. 66.

1 S. longifo'lia (St. Hil. l. c. p. 492. t. 24.) ♄. S. Native of Brazil near Rio Janeiro in old woods on a mountain called Corcovada, but very rare. Petals white or pale violet.

Long-leaved Spatularia. Fl. Oct. Shrub 6 feet.

Cult. For propagation and cultivation see *Ceranthèra*.

XVIII. HYMENANTHE'RA (from υμην, *hymen*, a membrane, and ανθηρα, *anthera*, an anther; alluding to the anthers being terminated by a membrane, or probably from the scales on the back). Banks herb. ex R. Br. cong. p. 23.

Lin. syst. *Pentándria*, *Monogýnia*. Sepals 5, imbricate. Petals 5, alternate, ovate, acuminated, at last reflexed, longer than the calyx, obliquely imbricated in æstivation (R. Brown). Structure of stamens approaching to *Vìola*, but closed together at the base into a monodelphous disk; with a scale opposite each on the back. Style very short. Stigmas 2, acute. Capsules somewhat baccate (when dry rough and reticulately veined) thin, ovate (1-celled, 1-seeded?) 2-celled; cells 1-seeded (R. Brown) covered by the permanent calyx, petals, and stamens. Seeds conforming to the capsule and filling the same, hanging from the nerviform placenta (as in *Vìola*). Structure of seed between the *Violarièæ* and *Polygàleæ*, ex R. Brown. Shrubs branched. Leaves coriaceous, sometimes solitary and alternate, sometimes in fascicles. Flowers small, axillary. Peduncles solitary, 1-flowered, furnished with 2 bracteas at the base of each.

1 H. angustifo'lia (R. Br. in herb. Banks and D. C. prod. 1. p. 315.) leaves linear, quite entire. ♄. G. Native of Van Diemen's Land at Port Dalrymple. Flowers yellow.

Narrow-leaved Hymenanthera. Shrub 6 feet.

2 H. denta'ta (R. Br. in herb. Banks and D. C. prod. 1. p. 315.) leaves oblong, denticulated. ♄. G. Native of New Holland near Port Jackson. Flowers yellow.

Toothed-leaved Hymenanthera. Fl. April, May. Clt. 1824. Shrub 6 feet.

Cult. These shrubs will thrive best in a mixture of loam and peat, and young cuttings will root readily under a bell-glass, if planted in sand.

XIX. PIPA'REA (from *Pipari*, the name of the tree in Guiana) Aubl. guian. 2. suppl. p. 31. t. 386.

Lin. syst. *Pentándria*, or *Polyándria*, *Monogýnia*. Sepals equal, permanent, at length reflexed at the apex. Petals equal? Filaments 10-15? awl-shaped, permanent, erect, shorter than the calyx, smooth, with the same number of appendages, these alternate with the stamens and are oblong and very hairy, all connected together and girding the ovary. Capsule ovate, triquetrous, 1-celled, 3-valved. Style filiform; stigma 3-parted (Gært. fil.) Capsule 3-valved, 1-celled, opening laterally from the top, covered densely on the inside with velvety brown down; valves bearing the seeds in the middle, one only in each valve, they are globose and velvety (2 of which are generally abortive). Shrubs or trees. Leaves alternate, scarcely stalked, feather-nerved, furnished with 2 caducous stipulas. Pedicels very short, 1-flowered, axillary, solitary, or numerous, jointed?

Perhaps this genus is truly pentandrous, if so it belongs to *Violarièæ*, but if polyandrous it ought perhaps to be placed in *Tiliàceæ*.

1 P. denta'ta (Aubl. guian. 2. p. 31. t. 386.) flowers solitary or twin; leaves elliptical or acuminated, brownish-velvety be-

neath; capsules acuminated, smoothish. ♄. S. Native of Cayenne in woods. Alsòdea Pipàrea, Spreng. syst. 1. p. 807.

Toothed-leaved Piparea. Shrub 5 feet.

2 P. MULTIFLO'RA (Gært. fil. carp. 3. p. 231. t. 224. f. 1.) flowers numerous; leaves oblong, acuminated, smooth beneath; capsule rather obtuse, velvety. ♄. S. Native of Cayenne.

Many-flowered Piparea. Shrub 5 feet.

Cult. For propagation and cultivation see *Ceranthèra*, p. 342.

ORDER XXII. DROSERA'CEÆ (plants agreeing with *Drosera* in many important characters). D. C. Theor. 214. prod. 1. p. 317. Drosèreæ, Sal. parad. no. 95.

Calyx of 5 permanent equal sepals (f. 68. *c.*) imbricate in the bud. Petals 5, hypogynous, distinct (f. 67. *b.* f. 68. *a.*) or constituting a gomopetalous corolla, as in *Romanzòvia*, alternating with the sepals, usually marcescent. Stamens free, permanent, sometimes equal in number to the petals (f. 67.), when this is the case they alternate with them, sometimes double, triple, or quadruple that number (f. 68.). Anthers 2-celled, birimose. Ovary 1, sessile (f. 67. *e.* f. 68. *c.*). Styles solitary (f. 68.) 3 (f. 67. *b.*) 5, sometimes joined at the base, sometimes distinct, divided at the apex (f. 67. *b.*), rarely simple. Capsule 1-3-celled, 3 (f. 67. *g.*) 5 (f. 68. *c.*) valved; valves bent inwards more or less at the edges, and opening from the top, sometimes with a seminiferous nerve in the middle of each valve, sometimes only bearing the seeds at the base of the valves. Seeds disposed in two rows along the middle nerve, or crowded at the bottom of the capsule; they are ovate, shining, naked, or wrapped in a thin follicular arillus. Albumen cartilaginous or fleshy. Embryo straight, slender, with thickish cotyledons, and an obtuse radicle which is turned towards the hilum. This order contains but a small group of plants, inhabitants of bogs, marshes, or inundated grounds; they are remarkable for the abundance of glandular hairs with which all parts of the herbs are usually clothed; sometimes, though rarely, the plants are extremely smooth, as in *Parnássia*. They are all perennial evergreen herbs, only 2 of which are in any way frutescent. The leaves are alternate, the young ones are always rolled up in a circinnate manner, so remarkable in ferns. The petioles are usually furnished with stipular hairs at the base. The young peduncles are usually rolled up in a circinnate manner. The flowers are blue, purple, yellow, white, or tinged with red. The medicinal properties of the plants appear to be trifling; the leaves of all have the power of curdling milk. The order differs from *Violarièæ* in the styles being seldom solitary, in the leaves being rolled up in a circinnate manner, before expansion not involute. It differs from *Polygàleæ* in the flowers being regular, not irregular, in the capsules being many-seeded, not 1-2-seeded, as well as in the leaves being stipulate, not exstipulate It differs from all the neighbouring orders in the remarkable habit of plants of which *Drósera*, *Dionæ'a*, and *Parnássia* give a very good idea. It is almost impossible to introduce seeds in a living state.

Synopsis of the genera.

1 DRO'SERA. Sepals and petals 5 (f. 67. *c.*) without appendages. Stamens 5. Styles 3 (f. 67. *b.*) 5, 2 or many-parted. Bog plants, ornamented with red irritable glandular hairs.

2 ALDROVA'NDA. Sepals and petals 5, without appendages. Stamens 5. Styles 5, short, filiform. Stigmas obtuse. A floating water plant, with whorled leaves, having a bladdery complicated limb.

3 ROMANZO'WIA. Sepals 5, connected at the base. Petals 5, joined into a 5-cleft deciduous corolla. Stamens 5, inserted at the bottom of the tube. A plant with kidney-shaped toothed leaves.

4 BY'BLIS. Sepals and petals 5, without appendages. Stamens 5. Style 1, filiform. Stigma 2-lobed. A bog plant with linear leaves ornamented with glandular hairs.

5 RORI'DULA. Sepals and petals 5, without appendages. Stamens 5. Style 1. Stigma 3-lobed. A small bog shrub, with linear leaves, ciliated with glandular hairs.

6 DROSOPHY'LLUM. Sepals and petals 5, with the claws approximate. Stamens 10. Styles 5, filiform. A small shrub with linear leaves, beset with stipitate glands.

7 DIONÆ'A. Sepals and petals 5 (f. 68. *a.*). Stamens 10-20. Style 1 (f. 68.). Stigma orbicular (f. 68.). A smooth bog plant, with 2-lobed irritable leaves, which are ciliated on the margins.

8 PARNA'SSIA. Sepals and petals 5. Scales or abortive stamens 5, these end in glandular bristles. Stigmas 4, sessile. Smooth bog herbs with roundish leaves.

I. DRO'SERA (from δροσερος, *droseros*, dewy; because the plants appear as if covered with dew, in consequence of being beset with glandular hairs). Lin. gen. 391. Lam. ill. t. 220. D. C. prod. 1. p. 317.

LIN. SYST. *Pentándria*, *Tri-Pentagýnia*. Sepals and petals 5 (f. 67. *c*), not appendiculated. Stamens 5. Styles 3 f. 67. *b.*) 6-8, 2 or many-parted. Herbs inhabiting boggy sphagnose places. Leaves ornamented with reddish irritable glandular hairs, discharging from their end a drop of viscid acrid fluid. These hairs have been thought irritable, so as to contract when touched, imprisoning insects somewhat in the manner of *Dionæ'a Muscípula*.

SECT. I. RORE'LLA (from *ros roris*, dew, see Genus). D. C. prod. 1. p. 317. Ros-sòlis, Tourn. inst. t. 127. Styles simple, or 2-3-parted, with the lobes entire and somewhat capitate at the apex.

§ 1. *Acaúles. Stemless. Leaves radical, usually rosulate. Scapes naked.*

1 D. ACAU'LIS (Thunb. prod. 57.) leaves oblong, obtuse, narrowed at the base; scape very short, 1-flowered. ♃. G. Native of the Cape of Good Hope. Flowers white. ?

Stemless Sun-dew. Fl. Jul. Aug. Clt. 1821. Pl. $\frac{1}{8}$ foot.

2 D. UNIFLO'RA (Willd. enum. 340.) leaves roundish, on short footstalks; scape short, 1-flowered. ♃. F. Native of the Straits of Magellan. Flowers white or red.

One-flowered Sun-dew. Fl. Jul. Aug. Pl. $\frac{1}{8}$ foot.

3 D. PYGMÆ'A (D. C. prod. 1. p. 317.) leaves roundish, peltate, on long footstalks; stipulas scarious; scape 1-flowered. ⊙. G. Native of New Holland on an island in the entrance to Jervis's Bay. D. pusílla, R. Br. ined. but not of Humboldt.

Pygmy Sun-dew. Pl. 1 inch.

4 D. PAUCIFLO'RA (Banks, herb. and D. C. prod. 1. p. 317.) leaves obovate-oblong, tapering at the base; scape beset with glandular hairs, 1-2-flowered; petals thrice as large as the

calyx. ♃. G. Native of the Cape of Good Hope. Flowers white or red.

Few-flowered Sun-dew. Fl. July, August. Clt. 1821. Pl. ¼ foot.

5 D. PUSI'LLA (H. B. et Kunth, nov. gen. amer. 5. p. 390. t. 490. f. 1.) leaves spatulate, glandular, with an obovate limb, upper surface as well as margins beset with hairs, scapes 2-3-flowered, and are glabrous as well as the calyx; seeds somewhat globose. ♃. S. Native in humid sandy places on the banks of the river Orinoco. D. biflòra, Willd. in Rœm. et Schult. syst. 6. p. 763. Flowers red? Stipulas palmately-5-parted.

Small Sun-dew. Fl. July, Aug. Pl. ⅛ foot.

6 D. TENE'LLA (H. B. et Kunth, l. c. p. 391. t. 490. f. 2. Willd. in Rœm. et Schult. syst. 6. p. 763.) leaves spatulate, with an obovate-roundish limb, upper surface as well as margins beset with glandular hairs; scapes capillary, elongated, 2-3-flowered, and are glabrous as well as the calyx; seeds oblong. ♃. S. Native of New Andalusia in alpine situations. Like *D. capillàris*. Flowers purple?

Pliant Sun-dew. Fl. July, Aug. Pl. ¼ foot.

7 D. UMBELLA'TA (Lour. fl. coch. ed. Willd. 1. p. 232.) leaves ovate, on long footstalks; scape naked at the apex, umbellately 5-flowered. ♃. G. Native of China. Flowers white.

Umbellate-flowered Sun-dew. Pl. ¼ foot.

8 D. BREVIFO'LIA (Pursh, fl. amer. sept. 1. p. 211.) leaves wedge-shaped, on very short footstalks; stipulas scarious, 3-5-cleft; scape 1-4-flowered. ⊙. H. Native in sandy swamps from Carolina to Georgia. Flowers rose-coloured.

Short-leaved Sun-dew. Fl. June. Pl. 1 inch.

9 D. PALEA'CEA (D. C. prod. 1. p. 318.) leaves oblong, stalked; stipulas scarious, acutely cut at the top; scape erect, glabrous, twice as long as the leaves; flowers in racemes at the top of the scape. ⊙. G. Native of New Holland at King George's Sound. Flowers red?

Chaffy Sun-dew. Pl. ⅛ foot.

10 D. TOMENTO'SA (St. Hil. in mem. mus. 11. p. 343.) leaves elliptical-oblong, very blunt, on very short footstalks, with the margin and upper surface beset with glandular hairs, under surface villous; stipulas ciliated to the middle; scapes erect, tomentose, but covered with glandular down at the top; calyxes densely clothed with glandular hairs. ♃. S. Native of Brazil in marshes on the mountains near Itambe in the province of Minas Geraes, at about the height of 2015 feet above the level of the sea. Hairs on the leaves white, but those on the scapes are brown. Flowers purple, all leaning to one side.

Var. β, glabràta (St. Hil. l. c. p. 344.) scapes more or less glabrous. ♃. S. Native of Brazil near the village called Milhoverde in that part of the province of Minas Geraes vulgarly called Distritodos-Diamantes, at about the height of 3700 feet above the level of the sea.

Tomentose Sun-dew. Pl. ¼ to ½ foot.

11 D. HIRTE'LLA (St. Hil. in mem. mus. 11. p. 344.) leaves spatulate, covered with glandular hairs on both surfaces; footstalks one half shorter than the limb of the leaf; stipulas 3-parted, ciliated; scape ascending at the base and covered with soft hairs, but with down towards the top; calyxes clothed with glandular hairs. ♃. S. Native of Brazil in dried up marshes near the town of Formigas in the province of Minas Geraes, and on the mountains called Serra-dos-Pyreneos in the province of Goyaz. Flowers purple, leaning to one side.

Var. β, lutéscens (St. Hil. l. c. p. 345.) leaves smaller, obovate, usually naked on the under surface; hairs on the scape manifestly stiffer and yellowish.

Hairy Sun-dew. Fl. Ju. Jul. Pl. ¼ to ½ foot.

12 D. TRINE'RVIA (Spreng. anleit. 1. p. 298.) leaves spatulate, wedge-shaped, sessile, 3-nerved; scapes few-flowered, and are as well as the calyxes pubescent. ⊙. ♃. G. Native of the Cape of Good Hope. Flowers red?

Three-nerved Sun-dew. Pl. ¼ foot.

13 D. CUNEIFO'LIA (Thunb. prod. 57.) leaves obovately-wedge-shaped, sessile, reticulately veined; scape few-flowered, and is as well as calyxes pubescent. ♃. G. Native of the Cape of Good Hope. Burch. trav. 1. p. 57. cat. no. 599. Flowers red and white.

Wedge-leaved Sun-dew. Fl. July, Aug. Pl. ¼ foot.

14 D. BURMA'NNI (Vahl. symb. 3. p. 50.) leaves spatulately wedge-shaped, sessile, reticulately-veined; scape erect, few-flowered, and is as well as calyxes glabrous. ⊙. ♃. S. Native of Ceylon, Coromandel, and perhaps China. Burm. zeyl. t. 94. f. 2. Flowers white.

Burmann's Sun-dew. Fl. July, Aug. Pl. ½ foot.

15 D. SESSILIFLÒRA (St. Hil. in mem. mus. ii. p. 341. t. 19. f. a.) leaves sessile, cuneated, very blunt at the apex, covered to the middle with glandular hairs, base and under surface naked; stipulas ciliated; scape flat, glabrous; calyxes clothed with glandular pubescence; style 5-parted; stigmas 5-7-parted. Native of Brazil in marshes near Tapeira and Riachao in the desert called Certaô-do-Rio-S-Francisco in the province of Minas Geraes. Flowers purple, leaning to one side.

Sessile-leaved Sun-dew. Fl. July, Aug. Pl. ½ foot.

16 D. MARI'TIMA (St. Hil. in mem. mus. ii. p. 346. t. 19. f. b.) leaves spatulate, almost exstipulate; with a wedge-shaped roundish border, upper surface clothed with glandular hairs; margins ciliately jagged; footstalks equal in length to the leaves; scape short, filiform, terete at the base, but flattened at the apex, clothed with glandular down as well as the calyx. ♃. S. Native of Brazil in the sea-sand near Ararangua at the termination of the province of St. Catharine and Rio-Grande-de-St.-Pedro-do-Sul, also on a mountain called Pao-de-Assucar on the sea-shore in the province of Cisplatine. Flowers purple, leaning to one side.

Sea-side Sun-dew. Fl. Ju. Oct. Pl. 2 inches.

17 D. SPATHULA'TA (Lab. nov. holl. t. 106. f. 1.) leaves oblong-spatulate, tapering somewhat into the footstalk; scape glandular at the top as well as calyxes; flowers almost sessile, disposed in short racemes. ⊙. ♃. G. Native of Van Diemen's Land and about Port Jackson. Flowers reddish?

Spatulate-leaved Sun-dew. Fl. July, August. Pl. ¼ foot.

18 D. PETIOLA'RIS (R. Br. ined. and D. C. syst. 1. p. 318.) leaves orbicular, peltate, on long footstalks; footstalks, calyx, and scape thickly beset with hairs, which are not glandular. ♃. G. Native in New Holland near Endeavour River. Flowers red?

Stalked-leaved Sun-dew. Fl. June, Aug. Pl. ½ foot.

19 D. CAPILLA'RIS (Poir. dict. 6. p. 299.) leaves obovately-spatulate, on short footstalks; scape erect, and is as well as calyxes glabrous. ⊙. H. Native of Carolina and about Philadelphia in sandy or gravelly swamps filled with Sphagnum. D. rotundifòlia, Mich. fl. bor. amer. 1. p. 186. Pursh, fl. amer. sept. 1. p. 210. Perhaps sufficiently distinct from the European *D. rotundifòlia*. Flowers white.

Capillary Sun-dew. Fl. July, Aug. Clt.? Pl. ½ foot.

20 D. MONTA'NA (St. Hil. in mem. mus. 2. p. 342.) leaves short, oblong, very blunt, tapering into a very short footstalk at the base, upper surface and margins covered with glandular hairs, under surface pilose; stipulas linear, jagged to the middle; scapes flat, 3-5-flowered, covered with glandular down as well as the calyxes and pedicels. ♃. S. Native of Brazil on the mountains called Serra-do-Papagayo on the southern part of the province of Minas-Geraes. Flowers red, leaning to one side.

Mountain Sun-dew. Fl. March. Pl. ¼ to ½ foot.

21 D. PARVIFO'LIA (St. Hil. in mem. mus. 11. p. 345.) leaves small, somewhat spatulate or obovate, very blunt, upper surface

and margins clothed with glandular hairs, under surface glabrous; petioles villous; scapes ascending at the base, 2-3-flowered; segments of calyx linear, acute, covered with glandular down. ♃. S. Native of Brazil in argillaceous bogs near the city of Joao-del-Rey in the province of Minas Geraes. Flowers rose-coloured, secund.

Small-leaved Sun-dew. Fl. ? Pl. $\frac{1}{4}$ foot.

22 D. ROTUNDIFO'LIA (Lin. spec. 402.) leaves orbicular, footstalks hairy, longer than the limb; scapes erect, 4-5-times higher than the leaves; seeds arillate. ♃. H. Native in many parts of Europe, plentiful in Britain in mossy turfy bogs, generally among sphagnum. The whole disk of the leaf, but especially its margin, is beset with red inflexed hairs, discharging from their ends a drop of viscid acrid fluid. These hairs have been thought irritable, so as to contract when touched, imprisoning insects, somewhat in the manner of the American *Dionæ'a muscípula*. Flowers white. Drev. et Hayne, pl. eur. 3. p. 40. t. 74. D. longifòlia, Smith, engl. bot. t. 867. Fl. dan. 1028.

Var. β, distàchya (D. C. prod. 1. p. 318.) scape bifid, 2-spiked at apex. ♃. H. Native of Europe and North America.

Round-leaved or Common Sun-dew. Fl. Jul. Aug. Brit. Pl. $\frac{1}{4}$ ft.

23 D. INTERME'DIA (Drev. et Hayne, pl. eur. 3. p. 43. t. 75. b.) leaves obovate on longer glabrous footstalks; scapes ascending, a little higher than the leaves; seeds exarillate. ♃. H. Native in many parts of Europe, plentiful in Britain along with *D. rotundifòlia* in mossy turfy bogs, generally among sphagnum. D. longifòlia, Lin. spec 403. D. rotundifòlia, Smith, engl. bot. 868. Disk and edge of leaves beset with glandular hairs as in *D. rotundifòlia*. Flowers white, often reddish. Styles 6-8.

Var. β, corymbòsa (D. C. prod. 1. p. 318.) scape bifid, branches diverging; flowers in cymose corymbs. ♃. H. Native about the Hague.

Var. γ, Americàna (D. C. l. c.) scape simple; leaves oblong-obovate. ♃. H. Native in swamps filled with sphagnum from Canada to Carolina. Pl. $\frac{3}{4}$ to 1 foot.

Intermediate Sun-dew. Fl. July, Aug. Britain. Pl. $\frac{1}{4}$ to $\frac{3}{4}$ ft.

24 D. COMMU'NIS (St. Hil. pl. usu. bras. no. 15. in mem. mus. 11. p. 349.) leaves spatulate with an obovate border, very blunt, upper surface as well as margins clothed with glandular hairs, under surface rather naked; stipulas capillaceously-many-parted; scapes rather ascending; calyxes 4-parted, covered with glandular down. ♃. S. Native of Brazil. Flowers purple. This plant is considered good pasture for sheep in Brazil.

Common Sun-dew. Pl. $\frac{1}{2}$ foot.

25 D. A'NGLICA (Huds. angl. 135.) leaves oblong, obtuse, narrowed at the base on glabrous footstalks rather longer than the leaves; scapes erect, almost twice the length of the leaves; seed arillate; styles 8; capsules with 4 valves. ♃. H. Native of middle and northern Europe in bogs, in several parts of Britain. Three miles from Carlisle towards Scotland; in Lancashire and Bedfordshire. Abundant on bogs near Smallburgh House of Industry, Norfolk. In several parts of Scotland. Gathered on St. Faith's bogs, Norfolk in 1781. Smith, engl. bot. t. 869. Pet. h. brit. t. 63. f. 12. Flowers white, but often reddish.

Var. β, subuniflòra (D. C. prod. 1. p. 318.) scape 1-2-flowered. ♃. H. Native on Mount St. Gothard.

English Sun-dew. Fl. July, Aug. Britain. Pl. $\frac{1}{2}$ foot.

26 D. LINEA'RIS (Gold. in edin. phil. journ. 1822. p. 325.) leaves linear, obtuse, on very long naked footstalks; scapes radical; flowers few; calyx glabrous. ♃. F. Native in Upper Canada in bogs about Lake Simcoe. Flowers purple?

Linear-leaved Sun-dew. Fl. June, July. Clt. 1822. Pl. 1 ft.

27 D. GRAMINIFO'LIA (St. Hil. in mem. mus. 11. p. 351. t. 19. f. c.) leaves sessile, linear, long, erect, upper surface and margins clothed with glandular hairs, under surface villous; stipulas ovate, ciliated at the apex; scapes triangular, villous, simple. ♃. S. Native of Brazil on the tops of the mountains called Serra-da-Caraca in the province of Minas Geraes; at the height of 6000 feet above the level of the sea. Flowers purple, leaning to one side.

Grass-leaved Sun-dew. Fl. Feb. Pl. $\frac{1}{2}$ foot.

28 D. SPIRA'LIS (St. Hil. in mem. mus. 11. p. 352.) leaves linear, sessile, long, at last spirally twisted; stipulas lanceolate, hardly ciliated at the apex: scape flattened, bifid, clothed with glandular down. ♃. S. Native of Brazil on the mountains called Serra-de-Curumatahy at the rivulet called Corgo-Novo in that part of the province of Minas Geraes called Distritodos-Diamantes, at the height of about 3700 feet above the level of the sea. Flowers purple, leaning to one side.

Spiral-leaved Sun-dew. Fl. July. Pl. $\frac{3}{4}$ foot.

29 D. FILIFO'RMIS (Raf. in Desf. journ. 1808. 1. p. 227.) leaves filiform, very long; footstalks woolly at the base, much shorter than the leaves; scapes erect, hardly equal in length to the leaves. ♃. F. Native of North America in pine barrens of New Jersey near Tuckerton. Pursh, fl. amer. sept. 211. D. tenuifòlia, Willd. enum. p. 340. An elegant plant with large purple flowers. Stipulas complicately dissected.

Filiform-leaved Sun-dew. Fl. Ju. Aug. Clt. 1811. Pl. 1 ft.

30 D. VILLO'SA (St. Hil. in mem. mus. 11. p. 349.) leaves linear-lanceolate, tapering into the footstalk with the margins and upper surface clothed with glandular hairs, under surface villous; footstalks villous; stipulas 2-parted, ciliately jagged; scapes erect, 4-times longer than the leaves; seeds oblong, striated, transversely reticulated. ♃. S. Native of Brazil on gravelly humid parts of the mountains called Serra-Negra in the province of Minas Geraes. Flowers purple, leaning to one side.

Villous Sun-dew. Fl. Jan. Feb. Pl. 1 foot.

31 D. ASCE'NDENS (St. Hil. in mem. mus. 11. p. 350.) leaves linear, rather tapering towards the base, under surface villous, upper surface and margins clothed with glandular hairs, even beyond the middle; scapes ascending; pedicels all bractless; calyxes covered with glandular down. ♃. S. Native of Brazil in gravelly humid parts of the mountains called Serra-de-Curumatahy, on the northern part of the province of Minas Geraes, at the height of about 3700 feet above the level of the sea. Flowers purple, leaning to one side.

Ascending Sun-dew. Fl. Sept. Pl. $\frac{1}{2}$ to 1 foot.

32 D. CAPE'NSIS (Lin. spec. 403.) leaves subradical, oblong-linear, obtuse, tapering at the base; footstalks glabrous, shorter than the limbs of the leaves; scape rather ascending, somewhat hairy, longer than the leaves. ♃. S. Native of the Cape of Good Hope.—Burm. afr. t. 75. f. 1. Flowers purple.

Cape Sun-dew. Fl. June, July. Clt.? Pl. $\frac{1}{2}$ foot.

§ 2. *Caulescéntes. Caulescent; leaves on the stem.*

33 D. RAMENTA'CEA (Burch, cat. no. 7692 and D. C. prod. 1. p. 318.) stem erect, covered with the old deflexed leaves; leaves on the top of the stem, obovate, somewhat rosulate, on ciliated footstalks which are longer than the limbs of the leaves; stipulas cut. ♄. ♃? S. Native of the Cape of Good Hope. Flowers probably red.

Ramentaceous Sun-dew. Pl. 1 foot.

34 D. HI'LARIS (Schlecht. ex Spreng. syst. app. p. 126.) caulescent; leaves rosulately crowded at the apex, spatulate-lanceolate, obtuse, beset with glandular pili, with the under surface and petioles villous; stipulas wanting; racemes secund, bracteate. ♃. S. Native of the Cape of Good Hope. Flowers probably red.

Cheerful Sun-dew. Pl. $\frac{1}{2}$ foot.

35 D. MADAGASCARIE'NSIS (D. C. prod. 1. p. 318.) stem ascending; leaves scattered, obovate, on glabrous footstalks, which are longer than the limbs of the leaves; stipulas ciliately-

jagged; flower-bearing peduncles 6-times longer than the leaves. ♃. S. Native of Madagascar. Flower purple?

Madagascar Sun-dew. Fl. July. Pl. ½ foot.

36 D. FOLIO'SA (Ell. sketch. 1. p. 376.) caulescent; leaves oval, crowded, wedge-shaped at the base; footstalks glabrous, elongated; stipulas awl-shaped. ♃. F. Native in South Carolina. Flowers white.

Leafy Sun-dew. Fl. July, Aug. Pl. ¼ foot.

37 D. CISTIFLO'RA (Lin. amœn. 6. p. 85.) stem erect, simple; leaves oblong-linear, sessile; flowers few, on pedicels. ♃. S. Native of the Cape of Good Hope.—Burm. afr. t. 75. f. 2. Flowers large, purple; stamens and pistils black; anthers yellow. There are variations of this plant according to Thunberg with white or red flowers spotted at the base.

Var. β, violàcea (D. C. prod. 1. p. 319.) leaves narrower; stem 2-flowered; flowers violaceous. D. violàcea, Willd. enum. 1. p. 340.

Rock-rose-flowered Sun-dew. Fl. Ju. July. Pl. ½ to 1 foot.

38 D. I'NDICA (Lin. spec. 403.) stem branched; leaves linear, surrounded by glandular hairs, on glabrous footstalks, which are scarcely narrower than the leaves; pedicels and calyxes puberulous. ♃? S. Native of Ceylon and Malabar.—Burm. Zeyl. t. 94. f. 1.—Rheed. mal. 10. t. 20. Flowers reddish.

This plant is called by the Ceylonese *Kandulaessa*, from *kandula*, a tear; because of the leaves being surrounded by glandular hairs, appearing like drops of water or tears.

Indian Sun-dew. Pl. ¼ foot.

SECT. II. ERGA'LEUM (from *εργον, ergon*, work, and *γαλα, gala*, milk? perhaps in allusion to the plants curdling milk, but this is the case with all the species). D. C. prod. 1. p. 319. Styles capillaceously-multifid (f. 67. *b.*), like a hair pencil.

§ 1. *Caulescéntes. Cauline leaves peltate.*

39 D. LUNA'TA (Buch. ined. D. C. prod. 1. p. 319.) stem erect, glabrous; radical leaves roundish-reniform; cauline ones scattered, stalked, moon-shaped, peltate; racemes lateral, few-flowered; sepals ovate, acute, beset with glandular hairs on the margins. ⊙. G. Native of Upper Nipaul at Suembu. Drósera peltàta, D. Don, prod. fl. nep. p. 212. Stem flexuous, slender. Flowers beautiful yellow.

Lunated-leaved Sun-dew. Fl. July, Aug. Pl. ½ foot.

40 D. PELTA'TA (Smith, in Rees' cycl. no. 5.) stem erect, glabrous; leaves scattered, stalked, peltate, somewhat triangular; racemes terminal; calyxes ciliated, with glandular hairs. ♃. S. Native of New Holland in marshy ground near Port Jackson. Smith, exot. bot. t. 41. Lab. nov. holl. t. 106. f. 2. Flowers large, red. Radical leaves moon-shaped (f. 67.).

FIG. 67.

Peltate-leaved Sun-dew. Fl. Aug. Sept. Pl. ½ foot.

41 D. BA'NKSII (R. Br. ined. and D. C. prod. 1. p. 319.) stem erectish, glabrous, hairy at the apex between the flowers; leaves scattered, stalked, peltate, orbicular; calyxes hairy. ⊙. S. Native of New Holland near Endeavour river. Flowers rose-coloured?

Banks's Sun-dew. Fl. July, Aug. Pl. ½ foot.

42 D. MENZI'ESII (R. Br. ined. and D. C. prod. 1. p. 319.) stem erectish, flexuous, glabrous, with branchlets rising from the axillæ; younger leaves somewhat fascicled, stalked, peltate, orbicular; racemes 2-flowered, glabrous, calyxes ciliated. ⊙. S. Native of New Holland. Flowers rose-coloured?

Menzies's Sun-dew. Fl. Jul. Sept. Pl. ½ foot.

§ 2. *Acaúlis. Stemless; leaves divided, all radical.*

43 D. BINA'TA (Lab. nov. holl. 1. t. 105.) leaves on long footstalks, deeply parted into 2 linear lobes. ♃. S. Native of Van Diemen's Land. Flowers white or reddish. Raceme dichotomous.

Binate-leaved Sun-dew. Fl. June, Sept. Clt. 1823. Pl. ½ ft.

44 D. PEDA'TA (Pers. ench. 1. p. 357.) leaves on long footstalks, pedately or twice forked; lobes linear. ♃. S. Native of New Holland. D. dichótoma, Smith, in Rees' cycl. no. 6. Flowers large, white.

Pedate-leaved Sun-dew. Pl. ½ to 1 foot.

Cult. Drósera is a singular and beautiful genus of plants, with their leaves ornamented with red glandular hairs, discharging from their ends a drop of viscid acrid juice. These hairs have been thought irritable, so as to contract when touched, imprisoning insects, somewhat in the manner of the *Dionæ'a muscípula* or *Venus's fly-trap*. They all grow in their places of natural growth on mossy turfy bogs; those species, natives of Europe and America, grow among sphagnum on a peat, gravelly, or sandy soil, particularly the American species on the latter soil. They thrive best in cultivation in small pots, which should be filled three parts full of peat earth and some sphagnum planted on it, the plants should be then planted in the moss, and the pots should be placed in pans of water, or in boxes in the same manner, and even then the hardy species should be placed in the greenhouse, and those species from New Holland and the Cape of Good Hope, as well as those natives within the tropics, should be placed in the stove. They are all increased by seeds, which should be allowed to sow themselves, but as the seeds will not vegetate after a voyage, plants of the foreign species must be introduced in pots or boxes, in the same manner as recommended for growing them.

II. ALDROVA'NDA (in honour of Ulysses Aldrovandus, an old botanist; author of *Dendrologia Naturalis libri duo*, in 1 vol. fol. Bonnoniæ, 1667, once prefect of the botanic garden, Boulogne). Monti, act. bon. 2. p. 3. p. 404. t. 12. Lin. gen. 390. Lam. ill. t. 220. D. C. prod. 1. p. 319.

LIN. SYST. *Pentándria, Pentagýnia.* Sepals and petals 5, not appendiculate. Stamens 5. Styles 5, filiform, short. Stigmas blunt. Capsules globose, 5-valved, 1-celled, 10-seeded. A water plant with whorled leaves, bearing bladders at the tip.

1 A. VESICULO'SA (Lin. spec. 402.). ♃. H. W. (All.) ⊙. H. W. (Savi.) Native of the south of Europe floating in stagnant water. Stems slender, herbaceous, almost simple. Leaves small, 6-9 in a whorl, approximate, narrow, wedge-shaped, bearing 5 or 6 threads, each terminated by a bladder. Flowers small, solitary, axillary, dirty-white. Anthers yellow. Petals hardly longer than the calyx. Peduncle 1-flowered, longer than the flower. Fruit globose, the size of a pea. This plant bears its bladders almost in the same manner as *Utriculària*, but in tufts.

Bladdery Aldrovanda. Fl. Ju. Aug. Clt. 1823. Pl. floating.

Cult. This plant should be grown in a marshy situation, or in water in a peat soil; if planted in pots half filled with some species of sphagnum, and set in pans of water, it will thrive well, but when grown in water it should never be above 4 or 8 inches under its surface.

III.? ROMANZO'WIA (in honour of Count Romanzoff, director of the Russian Admiralty, at whose expense the voyage of Kotzebue round the world was undertaken). Cham. in hor. phys. berl. 71. t. 14. D. C. prod. 1. p 319.

LIN. SYST. *Pentándria, Digýnia.* Sepals 5, united at the

base. Petals 5, united into a 5-cleft deciduous corolla. Stamens 5, inserted in the bottom of the tube of the corolla. Capsules 2-valved, 2-celled, many-seeded. Perhaps this genus more properly belongs to *Saxifràgeæ*.

1 R. Unalaschie'nsis (Cham. l. c.). 4. F. B. Native of moist valleys in the island of Unalaschka. Herb with the habit of *Saxífraga* or *Adóxa*. Leaves stalked, roundish, reniform, deeply toothed. Flowers whitish, without bracteas, in terminal, few-flowered racemes.

Unilaschka Romanzowia. Pl. $\frac{1}{4}$ foot.

Cult. This plant will thrive best in a peat soil in a moist situation; if planted in pots they should stand in pans of water. It may be increased by dividing at the root or by seed.†

IV. BY'BLIS (Byblis in mythology, the daughter of Miletus, who was changed into a fountain; in allusion to the habitation of the plant in bogs). Sal. parad. t. 95. D. C. prod. 1. p. 319.

Lin. syst. *Pentándria, Monogýnia*. Sepals and petals 5, not appendiculate. Stamens 5. Anthers bursting by 2 pores at the apex. Style 1, filiform. Stigma 2-lobed. Capsule 2-valved, 2-celled, many-seeded.

1 B. liniflo'ra (Salisb. l. c.). 4. S. B. Native of New Holland on bogs. A little simple herb with linear leaves beset with glandular hairs as in *Drósera*. Flowers blue.

Flax-flowered Byblis. Fl. May, July. Clt. 1803. Pl. $\frac{1}{2}$ ft.

Cult. This plant should be treated in the same manner as that recommended for the genus *Drósera*. It should be kept in the stove. It can only be increased by seeds, which should be allowed to sow themselves. Plants should be introduced, as seeds will not vegetate after a voyage.†

V. RORI'DULA (a diminutive of *ros roris*, dew; because of the leaves being beset with glandular hairs, which appear like dew). Lin. syst. veg. 244. D. C. prod. 1. p. 320.

Lin. syst. *Pentándria, Monogýnia*. Sepals and petals 5, not appendiculated. Stamens 5; anthers bursting by 2 pores at the apex, and each drawn out at the base into a callous appendage. Style 1. Stigma 3-lobed. Capsules 3-celled, 3-valved. Seeds generally solitary in each cell.

1 R. denta'ta (Lin. l. c.). ♄. G. Native of the Cape of Good Hope. Lam. ill. t. 141. Leaves linear, crowded, fringed, with the margins beset with glandular hairs. Bracteas leafy. Flowers white or blueish, in terminal racemes.

Var. β, muscicàpa (Gært. fr. 1. t. 62.) growing along with var. *α*. Petals narrower, white.

Toothed-leaved Roridula. Shrub 1 to 3 feet.

Cult. Cultivation and treatment the same as for the greenhouse species of *Drósera*.

VI. DROSOPHY'LLUM (from *δροσος, drosos*, dew, *φυλλον, phyllon*, a leaf; in allusion to the leaves being beset with stipitate glands, appearing like dew). Link. in Schrad. journ. 1806. 1. p. 53. D. C. prod. 1. p. 320.

Lin. syst. *Decándria, Pentagýnia*. Sepals and petals 5, approximate, unguiculate. Stamens 10. Styles 5, filiform. Capsules 5-valved, 1-celled, with the valves bent inwards to the middle, so as almost to make the capsule 5-celled.

1 D. Lusita'nicum (Link. l. c.). 4. ♄. F. Native on sandy hills in Portugal; stem shrubby; leaves linear, entire, beset with stipitate glands; panicle corymbose; flowers large, sulphur-coloured. St. Hil. mem. mus. 2. t. 4. f. 13. Drósera Lusitánica, Lin. spec. 403. Spérgula droseroìdes, Brot. fl. lus. 2. p. 215.—Mor. hist. 3. p. 620. f. 15. t. 4. f. 4.—Pluk. alm. t. 117. f. 2.

Portugal Drosophyllum. Fl. Ju. Aug. Subshrub $\frac{1}{2}$ foot.

Cult. This singular plant is called in Portugal *Herva Pinheira orvalhada*. It has not as yet been introduced, therefore the mode of treatment it may require in our gardens is unknown. But from the nature of the soil in which it naturally grows, sand, if ever it be introduced we would recommend its being grown in pots filled with sand, so that it might be sheltered during winter. The plant may be probably increased by cuttings or seed.

VII. DIONÆ'A (one of the names of Venus). Ellis, nov. act. ups. 1. p. 98. t. 8. Lin. mant. 151. D. C. prod. 1. p. 320.

Lin. syst. *Decándria* or *Polyándria, Monogýnia*. Sepals and petals 5. Stamens 10-20; anthers bursting laterally. Style 1. Stigma fringed. Capsules 5-valved, 1-celled. Seeds numerous, half buried in the cellular substance at the base of the capsule.

FIG. 68.

1 D. muscí'pula (Lin. mant. 238.). 4. S. B. Native of North America in swamps of North Carolina around Wilmington. Vent. malm. t. 23. Ker. bot. reg. t. 785. Sims, bot. mag. 785. Delaum. herb. amat. 349. Herb smooth. Leaves radical, on long footstalks, which are dilated at the top into a 2-lobed irritable limb, which is beset with one row of long hairs on the margin, which fold together when touched in the manner of the teeth of a trap. Flowers white, in terminal corymbs. This is a singular plant in respect of its leaves, which are of an anomalous form, and have a singular motion by which they catch insects, whence the specific name *muscípula*, a fly-trap. The root is scaly, almost like a bulb, and not prolific in fibres. The leaves have the petiole winged as in the orange; the extreme part or proper leaf is the part that operates as a trap. As soon as the insect enters, the lobes of the leaf fold together, and remain so as long as the insect continues to struggle, but as soon as it ceases and is quiet the leaf opens and permits it to escape. A straw or pin introduced between the lobes of the leaf will have the same effect. Mr. Ellis thinks it probable that a sweet liquor discharged by the red glands on the inner surface tempts insects to their destruction. "On the side of each lobe of the leaf stand about three erect, highly irritable bristles, which, when touched, cause the two lobes to fold together like a rat-trap, imprisoning insects; no doubt that their bodies may administer an air wholesome to the plant, which theory and recent observations on *Sarracènia*, *Drósera*, and *Nepénthes* confirm." Smith, introd. bot.

Venus's *Fly-trap*. Fl. July, Aug. Clt. 1768. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

Cult. This plant thrives best in small pots in peat earth, and some dwarf species of moss placed underneath in the pot, the pots should then be placed in a pan of water and set in a cool place near the glass in the stove. Seeds are sometimes produced, by which they may be increased as well as by dividing the plants at the root. Mr. Shepherd of Liverpool finds that the leaves will root, if placed on damp moss, and emit young plants from their edges.

VIII. PARNA'SSIA (from Mount Parnassus, the abode of grace and beauty, where, on account of the elegance of their form, these plants are feigned to have first sprung up). Tourn. inst. t. 127. Lin. gen. 384. D. C. prod. 1. p. 320

Lin. syst. *Pentándria, Tetragýnia*. Sepals 5. Petals 5. Scales 5 (perhaps abortive stamens) opposite the claws of the petals, ending in tufts of bristles which are glandular at the apex. Stamens 5; anthers behind. Stigmas 4, sessile. Capsules 4-valved, 1-celled; valves with a narrow dissepiment in

the middle of each. Seeds arillate. Herbs very smooth. Leaves ovate-cordate, cauline ones usually clasping the stem, or sessile. Flowers of all white, striped with green. The tuft of glands are yellow.

1 P. PALU'STRIS (Lin. spec. 391.) appendages furnished with 9-13 glandular bristles; petals almost sessile, somewhat emarginate; radical leaves cordate, cauline ones clasping the stem. Native throughout Europe in marshes and bogs, plentiful in Britain in mountainous countries. Smith, engl. bot. t. 82. Mill. illustr. t. 15. Curt. fl. lond. t. 1. Fl. dan. t. 584. Flowers elegant, white, marked with greenish pellucid veins. Glands of appendages or scales yellow, as well as in all the rest of the species.

Marsh or Common Grass of Parnassus. Fl. Septemb. Oct. Britain. Pl. ½ foot.

2 P. PARVIFLO'RA (D. C. prod. 1. p. 320.) appendages furnished with 5-7 glandular bristles; petals sessile; radical leaves ovate, cauline ones sessile. ♃. H. Native of North America in Pennsylvania and Virginia in bog meadows. Perhaps P. palústris, Pursh. fl. amer. sept. 1. p. 208, and also perhaps P. ténuis, Wahl. fl. lapp. no. 137. Flowers white, with netted veins of green or pale purple.

Small-flowered Grass of Parnassus. Fl. July, Aug. Clt. 1820. Pl. ½ foot.

3 P. OVA'TA (Ledeb. act. petr. 1815. p. 514.) appendages furnished with 3 glandular bristles; radical leaves ovate, cauline ones somewhat cordate, clasping the stem. ♃. H. Native in bogs in eastern Siberia. Flowers white.

Var. β, Belvìsii (D. C. prod. 1. p. 320.) radical leaves 5-7-nerved, cauline ones ovate. ♃. H. Native of North America. P. ovàta, Beauv. ined.

Ovate-leaved Grass of Parnassus. Fl. Jul. Aug. Pl. ½ to 1 ft.

4 P. CAROLINIA'NA (Michx. fl. bor. amer. 1. p. 184.) appendages furnished with 3 glandular bristles; petals almost sessile; radical leaves somewhat orbicular, cauline ones ovate, sessile. ♃. H. Native of North America in swamps and mosses from New York to Virginia, and from Carolina to Canada. Sims, bot. mag. t. 1459. Flowers white, netted, with veins of green or pale purple, the flowers have a greenish tint.

Carolina Grass of Parnassus. Fl. Jul. Aug. Clt. 1802. Pl. ½ ft.

5 P. ASARIFO'LIA (Vent. malm. t. 39.) appendages furnished with 3 glandular bristles; petals unguiculate; radical leaves kidney-shaped, cauline ones somewhat cordate, orbicular. ♃. H. Native of North America on high mountains in Virginia and Carolina. Flowers white, and are as well as leaves larger than those of the preceding species.

Asarabacca-leaved Grass of Parnassus. Fl. July, Aug. Clt. 1812. Pl. ½ foot.

6 P. GRANDIFO'LIA (D. C. prod. 1. p. 320.) appendages furnished with 3 glandular bristles; petals oblong, sessile; radical leaves ovate, somewhat cordate, 7-nerved, cauline ones somewhat cordate, orbicular. ♃. H. Native of North America at Cherokee. Flowers white. Leaves larger than in any other species.

Great-leaved Grass of Parnassus. Fl. Jul. Aug. Pl. ¾ ft.

7 P. FIMBRIA'TA (Banks, in Kœn. ann. 1. p. 391.) appendages palmate, glandless; petals obovate, unguiculated, fringed at the base; radical leaves kidney-shaped, cucullate at the base, many-nerved, cauline ones cordate. ♃. H. Native on the western coast of North America. Flowers white. The leaves of this species are remarkably hollowed out at the base, close to the lateral ribs, which are connected with one another by a common base, like the divisions of a pedate leaf, and have consequently a very elegant appearance. Hook. bot. misc. part. 1. t. 23.

Fringed-petalled Grass of Parnassus. Fl. Jul. Aug. Pl. ½ ft.

8 P. KOTZEBU'EI (Cham. ex Spreng. syst. 1. p. 951.) radical as well as cauline leaves ovate, tapering to both ends, nerved; petals linear-oblong; appendages furnished with numerous glandular bristles? ♃. F. Native of the north-west coast of America, round the Arctic Circle, plentiful in Escholtz Bay. Flowers white.

Kotzebue's Grass of Parnassus. Fl. Jul. Aug. Pl. ¼ to ½ ft.

Cult. The species of this beautiful genus thrive best in a peat soil in a moist situation. They may be also grown in pots, which should be placed in pans of water. They may be all increased by dividing the plants at the roots or by seed, which ripen in plenty. Plants must be introduced, as seeds do not vegetate after a voyage.

ORDER XXIII. POLYGA'LEÆ (plants agreeing with *Polýgala* in many important characters). Juss. ann. mus. 14. p. 386. mem. mus. 1. p. 385. D. C. prod. 1. p. 321.

Calyx of 5 sepals, which are imbricate in æstivation, the two inner ones usually petal-formed (f. 70. *a.*), the three outer ones smaller, of these last two are connected. Petals 3-5, hypogynous, more or less connected with the staminiferous tube, which is usually cleft in front (f. 70. *b.*), rarely distinct. Filaments united with the petals (f. 70. *b.*), monadelphous; these are divided at the top into 2 equal bundles, containing 4 anthers each. Anthers 8, 1-celled (f. 71. *d.*) inserted by the base, opening by a pore at the top. Ovary 1, free, 2-celled (f. 69. *b.*), rarely 1, (f. 70. *a.*) 3-celled. Style 1, incurved (f. 70. *e.*). Stigma funnel-shaped or 2-lobed (f. 70. *e.*). Pericarp capsular (f. 71. *f.* f. 69. *b.*), or drupaceous (f. 70. *d.*), 2-celled (f. 69. *b.*), or only 1-celled from abortion (f. 70. *a.*); valves bearing a dissepiment in the middle. Seeds solitary in the cells, pendulous (f. 70. *d.*), usually with an arillate caruncle at the base (f. 71. *f.*), sometimes pilose or with a tuft of hairs (f. 69. *c.*). Embryo straight, flat. Albumen thin but rarely wanting, with the endopleura sometimes tumid. Herbs or subshrubs, sometimes abounding in cream-coloured juice, but more especially in the roots. Leaves entire, for the most part alternate, articulated above the stem. Flowers disposed in racemes. The affinities of this truly natural order are extremely doubtful. The habit of the flowers is referable to *Leguminòsæ* and *Fumariàceæ*. The situation, disposition, and number of the stamens nearly agree with *Fumariàceæ*. But if the sepals are admitted as 5, and the petals 5, and 3 of which are supposed to be connected into a keel, *Polygàleæ* is more nearly related to *Leguminòsæ* than to any other Order.

Most of the plants of this order are interesting, and deserving of the attention of gardeners, some for their neatness, some for their beauty, and some for their use in medicine. They are natives of most countries, and are either low herbaceous plants, or shrubs from a dwarf spiny habit, to a tall graceful drooping appearance. The Order is remarkable for the union of the stamens into a single body, and in the anthers opening by a pore at the top, as well as in their irregular flowers; one of the petals is usually keel-shaped, and beautifully crested or bearded. The leaves have a bitter astringent taste, which is much more abundant in the roots, combined with an acrid flavour. These properties are particularly sensible in *P. Sénega*, which is reputed a sudorific, diuretic, sialagogue, cathartic, or mild emetic,

according to the manner in which it is administered. The *Yelhoi* of South America, the root of a species of *Monnìna*, has the same properties as *P. sénega*, and is particularly used as a remedy in dysentery. The well known *Rattany* or *Rattanhia* root of Chili is the produce of *Kramèria triándra*, and possesses powerful tonic and astringent qualities. According to the analysis of a French chymist, it contains gallic acid, but neither tannin nor resin. The seeds of all retain their vegetative power a considerable time, therefore, in most cases, they may be introduced in a living state.

Synopsis of the Genera.

1 Poly'gala. Sepals 5, permanent, 2 inner ones wing-formed. Petals 3-5, united with the staminiferous tube; the lower petal keel-formed. Capsule compressed. Seeds pubescent, with a caruncle at the hilum.

2 Salomo'nia. Sepals 5, nearly equal. Tube of corolla cleft longitudinally, with a 3-cleft limb. Keel cucullate. Stamens monadelphous; anthers 4. Capsules compressed, 2-lobed, usually serrate-ciliated. Small Asiatic herbs.

3 Comespe'rma. Sepals 5, deciduous, 2 inner ones wing-formed. Petals 3-5, united at the base, middle one 3-lobed and bearded (f. 69. *a.*). Stamens 8, monadelphous at the base. Capsule spatulate (f. 69. *b.*), 2-celled. Seeds with a tuft of long hairs at the hilum (f. 69. *c.*), and a linear caruncle at the top.

4 Badie'ra. Sepals 5, nearly equal, deciduous. Petals 3, connected at the base, beardless. Stamens 8, monadelphous. Capsule compressed, obcordate, 2-celled. Seeds furnished with a large oily arillus.

5 Soula'mea. Sepals 5, 2 inner ones large, concave. Petal 1. Stamens 2-6. Capsule indehiscent, compressed, orbicular, emarginate, 2-celled. Seeds without albumen.

6 Mura'ltia. Sepals 5, glumaceous, nearly equal. Petals 3, united, middle one bifid; lobes obtuse. Capsule crowned by 4 horns or tubercles, 2-valved, 2-celled.

7 Mun'dia. Sepals 5, permanent, glumaceous, 2 inner ones wing-formed. Petals 3, hardly united at the base, the middle one cucullate, crested or beardless. Stamens 7-8, monadelphous at the base, with the tube cleft in front. Drupe 2-celled, or from abortion only 1-celled, 1-seeded. Albumen fleshy.

8 Monni'na. Flowers resupinate. Sepals 5 (f. 70. *a.*), deciduous, 2 inner ones wing-formed, 3 outer ovate, 2 of these are usually united. Petals 3-5, connate at the base (f. 70. *b.*), middle one concave, 3-toothed. Stamens 8 (f. 70. *b.*), rather pilose, united into a tube at the base, which is cleft on one side. Drupe or capsule 2-celled, 2-seeded, or 1-celled, 1-seeded (f. 70. *c.*), girded by a membranous wing or without (f. 70. *d.*). Seed hanging from the top of the cell (f. 70. *d.*). Albumen sparing.

9 Ja'ckia. Sepals 5, equal, deciduous. Petals 5, middle one keel-formed. Stamens 8, diadelphous. Drupe ovate, containing a 1-seeded nucleus. Albumen none.

10 Bredeme'yera. Sepals 5, 2 inner ones petal-like. Petals 3, middle one keel-formed. Stamens 8, monadelphous. Drupe ovate, containing a 2-celled nut.

11 Securida'ca. Sepals 5, 2 inner ones petal-like. Petals 5, united at the base, lower one 3-lobed, upper two connivent. Stamens 8, united into a tube, which is cleft in front. Capsule compressed, indehiscent, 1-celled, 1-seeded, ending in a leafy ligulate wing at the apex. Seed hanging from the top of the cell. Albumen wanting.

12 Carpolo'bia. Sepals 5, 2 lateral ones wing-shaped. Petals 5, lower one keel-shaped. Stamens 6, monadelphous. Berry fleshy, containing a silky 1-seeded legume.

13 Krame'ria. Sepals 4, rarely 5, silky outside. Petals 4-5, 2 of which are orbicular (f. 71. *b.*), the third constantly of 2 or 3 united petals, all unguiculate. Stamens 3-4, free from the base. Anthers bursting by 2 pores. Fruit 1-celled, 1-seeded, globose (f. 71. *f.*), indehiscent, echinated (f. 70. *e.*).

I. POLY'GALA (from $\pi o \lambda \upsilon$, *poly*, much, and $\gamma \alpha \lambda \alpha$, *gala*, milk; alluding to the reputed effects of the plant on cattle that feed upon it.) Tourn. inst. t. 79. Lin. gen. no. D. C. prod. 1. p. 321.

Lin. syst. *Monodélphia*, *Octándria*. Sepals 5, permanent, 2 inner ones wing-formed, 3 outer ones small. Petals 3-5, united with the tube of the stamens, lower petal keel-formed (perhaps from 2 petals being constantly joined.) Stamens 8, with the filaments connate into a tube at the base, which is cleft in front. Anthers opening by a pore at the apex. Capsules compressed, elliptical, obovate or obcordate. Seeds pubescent, caruncculate at the hilum, with the caruncle rarely inappendiculate. Elegant shrubs or herbs. Flowers disposed in terminal or axillary racemes.

Sect. I. Psycha'nthus (from $\psi \upsilon \chi \eta$, *psyche*, a butterfly, and $\alpha \nu \theta o \varsigma$, *anthos*, a flower; form of flowers.) Raf. specch. 1. p. 116. D. C. prod. 1. p. 321. Keel amply crested. Capsules smooth, marginate. Bracteas 3, usually permanent at the base of the pedicels. This section consists of elegant shrubs from the Cape of Good Hope, and one from Arabia. The flowers of all are purple, usually with a pale crest and keel.

* *Leaves opposite. Perhaps all the species in this division are varieties of one.*

1 P. oppositifo'lia (Lin. mant. 259.) leaves opposite, cordate, ovate, acute. ♄. G. Native on mountains at the Cape of Good Hope. Very like the following species. Ker. bot. reg. 636. Flowers purplish. Keel yellowish-green.

Opposite-leaved Milkwort. Fl. year. Clt. 1790. Sh. 3 to 4 ft.

2 P. cordifo'lia (Thunb. prod. 120.) leaves opposite, cordate, acuminated; anthers bearded at the base; branchlets terete, glabrous; racemes terminal, subcorymbose. ♄. G. Native of the Cape of Good Hope. P. fruticòsa, Berg. cap. 188. Flowers red or purplish. Keel yellowish-green.

Cordate-leaved Milkwort. Fl. March, Aug. Clt. 1791. Shrub 3 feet.

3 P. latifòlia (Ker. bot. reg. 645.) leaves opposite, almost sessile, cordate-ovate, acuminate, 3-5-nerved, villous beneath, as well as the branches; corymbs terminal; anthers bearded at the base. ♄. G. P. cordifòlia, Sims, bot. mag. 2438. but not of Thunb. Flowers purplish. Keel yellowish-green.

Broad-leaved Milkwort. Fl. May, Oct. Clt. 1820. Shrub 3 feet.

4 P. tetra'gona (Burch. cat. no. 4639.) leaves opposite-cordate, acuminated; branches tetragonal, glabrous. ♄. G. Native of the Cape of Good Hope. Flowers large, purplish, in terminal racemes. P. cordifòlia, var. màjor, Lindl. bot. reg. t. 1146.

Square-branchletted Milkwort. Fl. year. Clt. 1820. Shrub 2 to 4 feet.

5 P. NUMMULA'RIA (Burch. cat. no. 3709.) leaves opposite, orbicularly kidney-shaped, cordate at the base, mucronated at the top; branchlets rather terete, glabrous. ♄. G. Native of the Cape of Good Hope. Flowers purplish in terminal corymbose racemes.

Moneywort-leaved Milkwort. Fl. year. Clt. 1812. Shrub 3 feet.

6 P. BORBONIÆFO'LIA (Burch. cat. no. 6861.) leaves opposite, cordate, acuminated; branchlets terete, hispid. ♄. G. Native of the Cape of Good Hope. P. oppositifòlia, Sims, in bot. mag. not of D. C. Flowers purplish, in terminal corymbose racemes.

Borbonia-leaved Milkwort. Fl. year. Clt. 1790. Sh. 3 ft.

* * *Leaves alternate.*

7 P. CLUYTIOI'DES (Burch. cat. no. 3326.) leaves elliptical, somewhat mucronated at the apex; branchlets very smooth; petals 2-lobed; lobes acute, very long. ♄. G. Native of the Cape of Good Hope. Flowers purplish, in terminal racemes.

Cluytia-leaved Milkwort. Fl. May, Aug. Shrub 3 feet.

8 P. GRANDIFLÒRA (Lodd. bot. cab. 1227.) leaves oblong, mucronate; branchlets pubescent; bracteas equal, permanent. ♄. G. Native of the Cape of Good Hope. Flowers large, purple, in terminal racemose corymbs, with a pale keel and crest.

Great-flowered Milkwort. Fl. May, Aug. Clt. 1820. Sh. 3 ft.

9 P. MYRTIFÒLIA (Lin. amœn. 2. p. 138.) leaves obovate or oblong, somewhat mucronated; branchlets clothed with appressed down; bracteas equal, permanent; pedicels shorter than the flowers. ♄.G. Native of the Cape of Good Hope. Flowers purplish, in terminal corymbose racemes, with a pale crest and keel.

Var. α, vèra (D.C. prod. 1. p. 322.) leaves obovate-oblong, flat. ♄. G.—Burm. afr. t. 73. f. 1.—Ker, bot. reg. t. 669.

Var. β, angustifòlia (D. C. prod. 1. p. 322.) leaves oblong. ♄. G.—Perhaps *P. tenuifòlia*, Link. enum. 2. p. 220.

Var. γ, rosmarinifòlia (D. C. prod. 1. p. 322.) leaves oblong-linear, with revolute margins.

Myrtle-leaved Milkwort. Fl. May, Aug. Clt. 1707. Shrub 3 feet.

10 P. LIGULA'RIS (Ker, bot. reg. t. 637.) leaves ligulate-linear, rather obtuse, crowded, spreading, glabrous; branches villous; bracteas permanent, equal, and are as well as the rachis villous; racemes short, crowded. ♄. G. Native of the Cape of Good Hope. Flowers purplish, in racemose terminal corymbs.

Tongue-leaved Milkwort. Fl. May, Aug. Clt. 1820. Shrub 2 to 3 feet.

11 P. INTERME'DIA (D. C. prod. 1. p. 322.) leaves oblong-linear, mucronated, with revolute margins; branchlets glabrous; bracteas permanent, equal; pedicels rather longer than the flowers; wings of flowers somewhat pointed. ♄. G. Native of the Cape of Good Hope. Flowers purplish.

Intermediate Milkwort. Fl. May, Oct. Clt.? Sh. 2 to 3 ft.

12 P. BRACTEOLA'TA (Lin. amœn. 2. p. 137. var. β.) leaves linear-lanceolate, flat; branches glabrous; bracteas permanent, lower one longest; pedicels rather longer than the flowers; wings of flowers pointed. ♄. G. Native of the Cape of Good Hope. Curt. bot. mag. 345. Flowers purple, with a white crest and green keel, in loose terminal racemes.

Var. α, stricta (D. C. prod. 1. p. 322.) leaves erect, and branches glabrous.

Var. β, pátula (D. C. l. c.) leaves spreading and branches glabrous.

Var. γ, hispida (D. C. l. c.) leaves erect and branches hispid.

Large-bracted Milkwort. Fl. May, Oct. Clt. 1713. Shrub 1 to 3 feet.

13 P. UMBELLA'TA (Thunb. prod. 120.) leaves linear-lanceolate, flat; branches hispid; bracteas permanent; flowers few. ⊙.? Thunb. ♄. G. Native of the Cape of Good Hope. Flowers purplish, with a white crest. P. bracteolàta δ umbellàta, D. C. prod. 1. p. 332.—Burm. afr. t. 73. f. 5.

Umbellate-flowered Milkwort. Fl. May, Oct. Shrub 1 to 2 ft.

14 P. TINCTO'RIA (Vahl. symb. 1. p. 50.) leaves obovate, and are as well as the branches velvety-villous; calyxes pubescent. ♄. F. Native on the mountains of Arabia Felix. P. bracteolàta, Forsk. descr. 213. Flowers purplish, in terminal racemes. There is a blue dye resembling Indigo obtained from this plant.

Dyer's Milkwort. Shrub 2 feet.

15 P. PUBIFLO'RA (Burch. cat. no. 6205.) leaves lanceolate, acuminated, ciliated; branchlets hairy; calyxes pubescent. ♄. G. Native of the Cape of Good Hope. Flowers purplish.

Downy-flowered Milkwort. Fl. May, Oct. Shrub 3 feet.

16 P. BURMA'NNI (D. C. prod. 1. p. 322.) leaves linear, bluntish; branchlets velvety-pubescent; racemes supra-axillary; pedicels shorter than the flowers; bracteas deciduous. ♄. G. Native of the Cape of Good Hope. P. bracteolàta δ, Lin.—Burm. afr. t. 73. f. 4. Burch. cat. no. 6437. Flowers purple.

Burmann's Milkwort. Fl. May, Oct. Clt. 1800? Sh. 3 ft.

17 P. AFFI'NIS (D. C. prod. 1. p. 322.) leaves linear obtuse; younger ones somewhat villous; branchlets pubescent; racemes opposite the leaves; bracteas small, permanent. ♄. G. Native of the Cape of Good Hope. Flowers purplish.

Neighbouring Milkwort. Fl. May, Oct. Shrub 3 feet.

18 P. MICROLO'PHA (Burch. cat. no. 3416.) leaves linear, mucronated, and are as well as the branches glabrous: racemes few-flowered; pedicels very short; wings of flowers obovate. ♄. G. Native of the Cape of Good Hope. Flowers purplish, with a small crest.

Small-crested-flowered Milkwort. Fl. May, Oct.? Sh. 3 ft.

19 P. SI'MPLEX (Burch. cat. no. 1933.) leaves oblong-wedge-shaped, obtuse, somewhat mucronated, and are as well as simple stem glabrous; bracteas deciduous; pedicels spreading; wings of flower oval. ♄. G. Native of the Cape of Good Hope. Flowers purple in racemes, one-half smaller than those of *P. speciòsa*, which it very much resembles.

Simple-stemmed Milkwort. Fl. May, Oct. Clt. 1816. Shrub 3 to 4 feet.

20 P. SPECIO'SA (Sims, bot. mag. t. 1780.) lower leaves oblong-cuneated, obtuse, mucronated, upper ones linear, and are as well as the twiggy branches glabrous; bracteas deciduous; pedicels spreading; wings of flower roundish. ♄. G. Native of the Cape of Good Hope. Ker, bot. reg. t. 150. Delaun. herb. amat. t. 193. Sims, bot. mag. t. 621. Flowers purplish in loose racemes.

Shewy Milkwort. Fl. May, Oct. Clt. 1814. Shrub 6 feet.

21 P. PEDUNCULA'RIS (Burch. cat. no. 5163.) leaves linear, with revolute margins, upper surface scabrous; peduncles rather stiff, spreading, bearing few flowers at the top, and are as well as branchlets angular. ♄. G. Native of the Cape of Good Hope. Flowers purple, almost like those of *P. myrtifòlia*.

Peduncled Milkwort. Fl. May, Oct. Shrub 3 feet.

22 P. TERETIFO'LIA (Thunb. prod. 120.) leaves linear, with revolute margins, rather terete, furrowed on the under surface, glabrous; branchlets clothed with white velvety down; racemes short, few-flowered. ♄. G. Native of the Cape of Good Hope. P. empetrifòlia, Houtt. hist. nat. 11. D. V. t. 28. f. 1. Andr. bot. rep. t. 370. Flowers purplish.

Terete-leaved Milkwort. Fl. May, Sept. Clt. 1791. Sh. 3 ft.

23 P. PINIFÒLIA (Lam. ill. t. 598. f. 2.) leaves linear, with revolute margins, somewhat terete, furrowed on the under surface, spreading, stalked, and are as well as the branches gla-

brous. ♄. G. Native of the Cape of Good Hope. Perhaps sufficiently distinct from *P. teretifòlia*. Leaves twice the length. Flowers purple, in short racemes.

Pine-leaved Milkwort. Fl. May, Oct. Clt. 1823. Shrub 3 ft.

24 P. REFRA'CTA (Burch. cat. no. 4891.) leaves linear, acuminated, spreading, and are glabrous as well as the branches; peduncles lateral, few-flowered, and are refracted as well as the pedicels; bracteas deciduous; wings of flower oval. ♄. G. Native of the Cape of Good Hope. Flowers purplish.

Refracted-pedicelled Milkwort. Fl. May, Aug. Shrub 3 ft.

25 P. MA'CRA (D. C. prod. 1. p. 323.) leaves small, somewhat linear, acute, erect, and are glabrous as well as the branches; racemes few-flowered; pedicels shorter than the flowers; wings of flower oval. ♄. G. Native of the Cape of Good Hope in arid places at Breda river. Flowers purple.

Lean Milkwort. Fl. May, Aug. Shrub 3 feet.

26 P. ATTENUA'TA (Lodd, bot. cab. 1000.) leaves narrow, tapering to both ends, acute, and are smooth as well as the twigs; racemes elongated; bracteas deciduous; pedicels longer than the flowers; wings obtuse. ♄. G. Native of the Cape of Good Hope. Flowers purple.

Tapering-leaved Milkwort. Fl. May, Oct. Clt. 1823. Sh. 2 ft.

27 P. GENISTOI'DES (Poir. dict. 5. p. 402.) leaves linear, acute, few, distant, and are glabrous as well as the twiggy branches; racemes elongated; bracteas deciduous; pedicels at length spreading, shorter than the flowers; wings of flower oval, obtuse. ♄. G. Native of the Cape of Good Hope. Flowers purplish.

Var. β, *ephedroìdes* (D. C. prod. 1. p. 323.) Burch. cat. no. 1793. itin. 1. p. 485.) branches scarcely leafy; racemes loose.

Var. γ, *spartioìdes* (Burch. cat. no. 4449.) branches and younger leaves hardly pubescent; wings of flower roundish.

Broom-like Milkwort. Fl. May, Oct. Clt. 1823. Shrub 3 ft.

28 P. GARCI'NI (D. C. prod. 1. p. 323.) leaves linear, almost awl-shaped, rather distant, and are glabrous as well as the twiggy branches; racemes elongated; pedicels hardly twice the length of the bracteas; wings of flower oval, obtuse. ♄. G. Native of the Cape of Good Hope. P. bracteolàta γ, Lin. amœn. 2. p. 137.—Burm. afr. t. 73. f. 3. Burch. trav. 1. p. 19. 37. Flowers purplish.

Garcin's Milkwort. Fl. May, Oct. Shrub 3 feet.

29 P. ERICIFÒLIA (D. C. prod. 1. p. 323.) leaves linear, erect, crowded, acute, glabrous, upper ones ciliated; pedicels somewhat umbellate, longer than the flowers; wings of flower oval, mucronated. ♄. G. Native of the Cape of Good Hope. Burch. cat. no. 5514. Flowers purplish.

Heath-leaved Milkwort. Fl. May, Oct. Shrub 3 feet.

30 P. PU'NGENS (Burch. cat. no. 1598. trav. 1. p. 304.) leaves linear, acutish, narrow, few; branchlets divaricating, glaucous, rigid, spinescent at the top; racemes 2-4-flowered. ♄. G. Native of the Cape of Good Hope. Flowers with a purple crest and white wings, veined with green. Capsules obcordate.

Pungent-branched Milkwort. Fl. May, Sept. Shrub 1½ ft.

31 P. RI'GENS (Burch. cat. no. 1821. trav. 1. p. 465.) leaves linear-oblong, channelled, obtuse, furnished at the top with a somewhat recurved point, and are pubescent as well as the younger branches; racemes few-flowered; wings of flower a little ciliated. ♄. G. Native of the Cape of Good Hope. Flowers purplish?

Stiff Milkwort. Fl. May, Sep.? Shrub 1 foot.

32 P. LEPTOPHY'LLA (Burch. cat. no. 2380. trav. 1. p. 400.) leaves linear, erect, acutish, and are as well as younger branches rather pubescent; racemes loose; bracteas small, deciduous; wings of flower elliptical. ♄. G. Native of the Cape of Good Hope. Flowers purplish?

Slender-leaved Milkwort. Fl. May, Aug. Shrub 2 feet.

33 P. HI'SPIDA (Burch. cat. no. 4473.) lower leaves elliptical, upper ones somewhat linear, and are as well as branchlets covered with soft bristles; racemes elongated, pubescent; bracteas deciduous, lower one equal in length to the pedicel; wings of flower elliptical. ♄. G. Native of the Cape of Good Hope. Flowers purplish?

Hispid-leaved Milkwort. Fl. May, Sep. Shrub 1½ foot.

34 P. ASBESTI'NA (Burch. cat. no. 2030. trav. 1. p. 543.) leaves obovate, tapering to the base, uppermost ones lanceolate, mucronated, rather glaucous, and are as well as the branchlets somewhat pubescent; peduncles generally 1-flowered, lateral; wings of flower lanceolate, green. ♄. G. Native of the Cape of Good Hope beyond the Orange river. Flowers white. Capsules oval, cleft in two lobes at the top. Perhaps belonging to a separate section.

Asbestus or Cloth Milkwort. Fl. May, Aug. Sh. 1 to 2 ft.

35 P. POLYPHY'LLA (D. C. prod. 1. p. 324.) leaves oblong, acute at both ends, crowded, rough on the back and margins; branchlets somewhat puberulous; pedicels axillary, 1-flowered. ♄. G. Native of the Cape of Good Hope. Plant with the habit of *Múndia*. Flowers probably purplish.

Many-leaved Milkwort. Fl. May, Sep. Shrub 2 feet.

† *Species belonging to the present section, but whether the leaves are opposite or alternate is not mentioned.*

36 P. CE'RNUA (Thunb. prod. 1. p. 120.) flowers crested, racemose; leaves lanceolate, glabrous. Native of the Cape of Good Hope. Flowers probably purple.

Drooping-flowered Milkwort. Shrub.

37 P. VIRGA'TA (Thunb. prod. 1. p. 120.) flowers crested, racemose; leaves obovate-oblong. Native of the Cape of Good Hope. Perhaps P. speciòsa of Sims. Flowers purple?

Twiggy Milkwort. Shrub.

38 P. AMŒ'NA (Thunb. prod. 120.) flowers crested, lateral; leaves obovate-oblong, glabrous.—Native of the Cape of Good Hope. Flowers probably white. P. asbestìna of Burchell?

Pleasant Milkwort. Shrub.

39 P. TOMENTO'SA (Thunb. prod. p. 120.) flowers crested in whorls; leaves cordate, downy on the under surface.—Native of the Cape of Good Hope. Flowers purple?

Tomentose-leaved Milkwort. Shrub.

SECT. II. POLY'GALON (see genus for derivation.) D. C. prod. 1. p. 324. Keel of flower crested. Capsules smooth. Bracteas three, situated at the base of the pedicels, deciduous. Elegant herbs and subshrubs. Native of Europe and the temperate parts of Asia.

40 P. TENUIFO'LIA (Willd. spec. 3. p. 879.) leaves linear, mucronated, and are as well as erect stem glabrous; racemes elongated, loose, almost bractless; wings of flower oval-oblong, acute. ♃. H. Native on the mountains of Siberia. Flowers flesh-coloured and blue.

Thin-leaved Milkwort. Pl. 1 foot.

41 P. SIBI'RICA (Lin. spec. 987.) leaves lanceolate, lower ones ovate, glabrous, younger ones somewhat puberulous; racemes loose, few-flowered; bracteas soon falling off; wings of calyx elliptical, mucronated. ♃. H. Native on mountains in Siberia.—Gmel. sib. 4. p. 64. t. 32. f. 1. Flowers intense blue.

Siberian Milkwort. Fl. May, July? Pl. ¼ foot.

42 P. JAPO'NICA (Houtt. syst. 8. t. 62. f. 1.) leaves glabrous, lower ones roundish, upper ones ovate, acute; stem erect; racemes lateral, somewhat corymbose; calyx spreading; wings of calyx oblong. ♃. G. Native of Japan. P. vulgàris, Thunb. jap. 277. Flowers blue.

Japan Milkwort. Pl. ½ foot.

43 P. densiflo'ra (Blum. bijdr. fl. ind. ned. ex Schlecht. Linnæa 1. p. 466.) leaves linear-lanceolate, mucronate, with ciliated revolute margins, lower ones obovate; racemes supra-axillary, short, dense; wings of calyx falcate, longer than the orbicular capsule. ♄. S. Native of Java. Flowers red?

Dense-flowered Milkwort. Shrub 1 foot?

44 P. saxa'tilis (Desf. atl. 2. p. 128. t. 175.) leaves oblong-lanceolate, mucronated; stems shrubby at the base, decumbent; racemes extra-axillary, few-flowered; wings of calyx elliptical. ♄. F. Native of Mauritania, Spain, and south of France, on rocks. Flowers blue or purple.

Stone Milkwort. Fl. May, June. Pl. ½ foot.

45 P. Oxycoccoi'des (Desf. atl. t. 174.) leaves elliptical, thickish; stem shrubby, decumbent; racemes lateral, short, few-flowered; wings of calyx ovate. ♄. F. Native of the north of Africa in the fissures of rocks. Flowers blue or purple?

Cranberry-like Milkwort. Fl. May, July. Shrub decumbent ¼ to ½ foot long.

46 P. supi'na (Schreb. dec. t. 10.) leaves obovate, somewhat retuse; stem shrubby, trailing; racemes subterminal, 7-9-flowered; wings of calyx oval, somewhat 3-nerved, longer than the corolla. ♄. F. Native of Armenia and Tauria in gravelly places. P. andrachnoïdes, Willd.—Buxb. cent. t. 70. f. 2. Flowers either blue or purple.

Trailing Milkwort. Shrub trailing.

47 P. adsce'ndens (Clark. in Spreng. new entd. 3. p. 165.) leaves oblong, tapering at the base, lower ones obovate, somewhat villous; stem shrubby at the base, ascending; racemes few-flowered; wings of calyx oblong, obtuse, one-half shorter than the corolla; ovary sessile. ♄. F. Native in the island of Cos. Flowers blue?

Ascending-stemmed Milkwort. Shrub ½ foot.

48 P. venulo'sa (Sibth. et Smith, prod. fl. græc. 2. p. 52.) leaves elliptical-lanceolate; stem ascending; racemes subterminal; wings of calyx oblong, 3-nerved, transversely veined, one-half shorter than the corolla. ♃. F. Native in the islands of the Archipelago. Flowers blush-coloured, with a white crest; the petals nearly twice as long as the wings.

Veiny-winged Milkwort. Pl. ½ foot.

49 P. strami'nea (Presl. ex Spreng. syst. append. p. 265.) stem erect, a little branched; leaves lanceolate-linear, acuminate; bracteas deciduous; wings ovate-elliptical, 3-nerved, twice the length of the corolla. ♃. F. Native of Sicily. Flowers straw-coloured.

Straw-coloured-flowered Milkwort. Pl. ½ foot.

50 P. elonga'ta (Presl. ex Spreng. syst. append. p. 265.) stem ascending; leaves serrulated, lower ones obovate, upper ones oblong; wings of calyx elliptical, shorter than the corolla. ♃. H. Native of Sicily.

Elongated Milkwort. Pl. ½ foot.

51 P. multicau'lis (Tauch. in flor. 1821. p. 563.) flowers crested; racemes lax, few-flowered; wings of calyx elliptical, acute, shorter than the corolla, deeply 3-nerved, with veiny margins; stems filiform, much branched, trailing; leaves linear-lanceolate, acute. ♃. H. Native of Switzerland. Flowers blue.

Many-stemmed Milkwort. Pl. ¼ foot.

52 P. ro'sea (Desf. atl. 2. p. 128. t. 176.) lower leaves oblong, obtuse, upper ones lanceolate; stem erect, shrubby at the base; wings of calyx oval, many-nerved, a little shorter than the corolla; ovary on a very short stipe. ♄. F. Native of the north of Africa near Tlemsen. Flowers rose-coloured, large.

Rose-coloured-flowered Milkwort. Shrub 1 foot.

53 P. ma'jor (Jacq. austr. t. 413.) leaves linear-lanceolate, acute; stems erect; wings of calyx ovate, many-nerved, a little longer than the corolla; ovary on a long stipe. ♃. H. Native of Italy, Austria, Greece, and the Levant, in mountainous meadows. Flowers rose-purple, double the size of those of *P. vulgàris*.—Buxb. cent. 8. p. 40. t. 70. f. 1.

Larger-perennial Milkwort. Fl. July, Aug. Clt. 1739. Pl. 1 foot.

54 P. Thuringi'aca (Spreng. syst. 3. p. 166.) stem ascending, lower leaves spatulate; wings obovate, shorter than the corolla, but equal in length to the capsule. ♃. H. Native of Thuringia and Italy. P. buxifòlia, Reichb. Flowers blue or purple.

Thuringian Milkwort. Fl. June, July. Pl. ¼ foot.

55 P. oxy'ptera (Reichb. ex Spreng. syst. 3. p. 166.) stem ascending; leaves lanceolate; wings acute, shorter than the corolla, and equal in length to the broad capsule. ♃. H. Native of Germany and Denmark. P. vulgàris, Fl. dan. t. 516. Flowers blue and purple.

Sharp-winged Milkwort. Fl. June, July. Pl. ¼ to ½ foot.

56 P. flave'scens (D. C. cat. hort. monsp. 134.) leaves linear, rather lanceolate, acute; stems ascending; wings of calyx elliptical, acute at both ends, longer than the corolla and capsule. ♃. H. Native on the Appenines.—Seb. pl. rom. fasc. 1. t. 1. Flowers yellowish.

Yellowish-flowered Milkwort. Pl. ½ foot.

57 P. vulga'ris (Lin. spec. 986.) leaves linear-lanceolate, bluntish; stems ascending; wings of calyx elliptical, bluntish, a little longer than the capsule, but somewhat equal in length or shorter than the corolla; ovary almost sessile. ♃. H. Native on gravelly heathy pastures and woods throughout Europe, plentiful in Britain. Flowers either blue, red, purple, white, or yellowish.

Var. a, vèra (D. C. prod. 1. p. 325.) stems erectish, lower leaves obovate, obtuse, upper ones linear, acute. Smith, engl. bot. t. 76. Vaill. par. 160, 161. t. 32. f. 1.

Var. β, pubéscens (D. C. l. c.) stems decumbent, and are as well as leaves pubescent. Rohd. journ. bot. 2. p. 359.

Var. δ, Verviàna (Lej. fl. spa. 2. p. 92.) stems ascending; leaves lanceolate-linear; flowers white.

Var. ε, acutifòlia (D. C. l. c.) stems erect; leaves linear; flowers middle-sized, blue.

Var. ζ, angustifòlia (D. C. prod. 1. p. 325.) stems erect; leaves linear; flowers middle-sized, rose-coloured. P. Monspelìaca, Vill. dauph. 3. p. 388?

Var. κ, grandiflòra (D. C. prod. 1. p. 325.) stems erect; leaves linear; flowers large, rose-coloured. P. Monspelìaca, All. pedm. no. 1087.

The *Polýgala vulgàris*, like the rest of the European species, is bitter, and when given in infusion promotes expectoration, and is good for a catarrhous cough. Duhamel used it in pleuritic cases with effect. Linnæus found the plant to possess the same properties as *P. Sénega*, but in an inferior degree. The powdered root may be given in doses of half a drachm. Foreigners celebrate it as a grateful and nutritious food for cattle. According to the Swedish experiments, kine, sheep, and goats eat it, but swine refuse it.

Common Milkwort. Fl. June, July. Britain. Pl. ¼ to ½ ft.

58 P. como'sa (Schkuhr, handb. t. 194.) stem erect; lower leaves scattered, obovate, the rest linear; bracteas longer than the flower; wings elliptical, longer than the capsule and corolla. ♄. H. Native of Germany. P. vulgàris var. γ, elàta, D. C. prod. 1. p. 325. Flowers purple or blue.

Tufted Milkwort. Fl. May, July. Pl. ¾ foot.

59 P. Austri'aca (Crantz. aust. t. 2. f. 4.) stem ascending; lower leaves obovate, oblong; wings 3-nerved, elliptical, equal in length to the corolla, shorter than the capsule. ♃. H. Native of Germany, south of France, and Volhynia. Wings of flower greenish after flowering. P. decípiens, Bess. cont. 2. p.

73. V. amàra, fl. Lith. P. uliginòsa, Rchb. Flowers blue, or purple, or white. Plant very bitter.

Austrian Milkwort. Fl. June, July. Clt. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

60 P. alpe'stris (Reichb. ex Spreng. syst. 3. p. 166.) stem ascending, lower leaves obovate-oblong; wings obtuse, longer than the corolla, but equal in length with the broad capsule. ♃. H. Native of Switzerland, France, Austria, and Volhynia, on the Alps. P. amàra, Jacq. austr. t. 412. P. Vaillánti, Bess. cont. 2. p. 73.—Vaill. par. t. 32. f. 3. Perhaps *P. hýbrida*, no. 62. Flowers blue.

Alp Milkwort. Fl. June, July. Clt. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

61 P. ama`ra (Lin. spec. 987.) radical leaves obovate, very blunt, cauline ones linear; stems erectish; wings of calyx elliptical, equalling the corolla in length; capsules almost orbicular. ♃. H. Native of mountainous pastures of Europe, particularly Germany, Switzerland, France, and Austria. Flowers blue.

Var. β? cæspitòsa (D. C. prod. 1. p. 325.) flowers blue; stems tufted, procumbent; leaves linear, upper ones approximating the flowers. P. rèpens, Merat.—Sims, bot. mag. 2437.

Var. γ, alpìna (Poir. dict. 5. p. 488.) flowers few, blue; stems tufted, procumbent, very short; lower leaves obovate.

Var. ε, obtusifòlia (D. C. prod. 1. p. 325.) flowers blue; stems tufted, procumbent, lower leaves obovate, very blunt.

Probably the same qualities as are ascribed to *P. Sénega* may reside in this, and it might be used as a succedaneum for it. Gesner asserts, that an infusion of it is a safe cathartic. A tincture of 4 ounces of it, in a pint of Canary wine is extremely bitter, and of a brownish colour. It is employed in the pleurisy, in malignant and milk fevers, and in phthisis pulmonalis. A drachm of the root in powder is given as a dose; or an ounce of it is boiled in a pint and a half of water to a pint, and drank with milk. The stimulating and resolving principles are stronger in *P. Sénega*, but this seems to abound more in balsamic resin. It is more efficacious than *P. vulgàris*, but that may be owing in a great measure to its mountainous or subalpine situation. (Mart. Mill.)

Bitter Milkwort. Fl. June, July. Clt. 1775. Pl. $\frac{1}{4}$ foot.

62 P. hy'brida (D. C. prod. 1. p. 325.) stem glabrous, erectish, simple, lower leaves oblong, the rest linear; wings of calyx oblong, longer than the corolla. ♃. F. Native of the Ural deserts in Siberia. This plant is intermediate between the two preceding species. Flowers blue.

Hybrid Milkwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

63 P. Podo'lica (D. C. prod. 1. p. 325.) stem erectish, glabrous, simple; leaves linear, acute; bracteas awl-shaped, twice the length of the flower; wings of calyx oblong, 1-nerved, equal in length to the corolla (white, with a green line on the middle). ♃. H. Native of southern Podolia. Flowers blue?

Podolian Milkwort. Fl. June, July. Pl. $\frac{1}{2}$ foot.

64 P. Monspeli`aca (Lin. spec. 987.) stem erect, glabrous, almost simple; leaves linear, acuminated; wings of calyx oblong, 3-nerved, acute at both ends. ⊙. H. Native on sterile places about the Mediterranean and the south of France. D. C. icon. rar. 1. p. 3. t. 9. Flowers pale rose-coloured or greenish, very small.

Montpelier Milkwort. Fl. June, July. Clt. 1823. Pl. $\frac{1}{2}$ ft.

65 P. exi`lis (D. C. cat. hort. monsp. 133.) stem erect, glabrous, much branched; leaves linear, thickish; wings of calyx oval, obtuse, 1-nerved, length of capsule; raceme loose. ⊙. H. Native in the south of France and Spain. P. lineàris, Lag. P. nòva, Boiss. fl. eur. 1. p. 474. f. 1. Flowers rose-coloured or blue.

Slender Milkwort. Fl. July. Pl. $\frac{1}{2}$ foot.

66 P. gluma`cea (Smith, prod. fl. græc. 2. p. 52. fl. græc. t. 670.) stem somewhat erect; leaves lanceolate-linear, acuminated; wings of calyx elliptical-lanceolate, twice as long as the corolla, 3-nerved, obsoletely veined. ♃. F. Native in the island of Cyprus, and at Gibraltar. Flowers white, small.

Chaffy Milkwort. Fl. June, July. Pl. $\frac{1}{2}$ foot.

67 P. di'scolor (Hamilt. in herb. Lamb. D. Don, prod. fl. nep. 199.) spike many-flowered; wings spatulate; stem erect, simple; lower leaves obovate or elliptical, reddish beneath, upper ones linear-lanceolate, mucronate. ⊙. H. Native of Upper Nipaul. P. leptostàchya, D. C. in herb. Lamb, P. leptàlea and P. oligophýlla, D. C. prod. 1. p. 325. Flowers small, pendulous.

Two-coloured-leaved Milkwort. Pl. $\frac{1}{4}$ foot.

† *Species not sufficiently known, but evidently belonging to section Polýgalon.*

68 P. elonga`ta (Klein. in Willd. spec. 3. p. 879.) flowers crested; racemes axillary, elongated; stem branching from the base; leaves linear, obtuse, mucronated, with rather ciliated margins. ⊙. S. Native of the East Indies near Hydrabad.

Elongated-racemed Milkwort. Pl. $\frac{1}{2}$ foot.

69 P. longifo`lia (Poir. dict. 5. p. 501.) flowers crested; racemes spike-formed; wing of flower oblong; stem almost simple; leaves very long, grassy, upper ones filiform. ⊙. S. Native of Java.

Long-leaved Milkwort. Fl. July, Aug. Pl. $\frac{1}{2}$ foot.

70 P. Tranqueba'rica (Mart. ex Gœt. anz. 1817. p. 159.) flowers crested; racemes few-flowered, lateral; leaves linear, mucronated; stems herbaceous, branched. ⊙. S. Native on the shores of Tranquebar and Coromandel.

Tranquebar Milkwort. Pl. $\frac{1}{2}$ foot.

71 P. Ma'rtii (D. C. prod. 1. p. 332.) flowers crested; racemes lateral; leaves lanceolate-linear, bluntish; stems procumbent, herbaceous. ⊙? S. Native of the East Indies. P. pubéscens, Mart. ex Gœt. anz. 1817. p. 159. but not of Nutt.

Martius's Milkwort. Pl. $\frac{1}{4}$ foot.

72 P. va`rians (Mart. l. c.) flowers crested; racemes axillary; lower leaves obcordate or ovate, upper ones lanceolate; stem herbaceous, branched, procumbent; peduncles hairy. ⊙? S. Native of Bengal.

Varying Milkwort. Pl. $\frac{1}{4}$ foot.

73 P. umbro`sa (Mart. l. c.) flowers crested; racemes axillary; leaves oblong, acutish, tapering to the base. ⊙? S. Native of Bengal.

Shaded Milkwort. Pl. $\frac{1}{2}$ foot.

74 P. macrophy'lla (D. C. prod. 1. p. 332.) flowers crested; wings cordate-orbicular; racemes axillary; leaves obovate, emarginated. ♄. S. Native of Madagascar.—Vouhe Flac. mad. p. 136. no. 94. icon.

Large-leaved Milkwort. Shrub 1 foot?

75 P. rarifo`lia (D. C. prod. 1. p. 332.) flowers crested; wings of flower obovate, longer than the elliptical capsule; leaves linear, acute; stem suffruticose, erect, furrowed, twiggy. ♃. ♄. S. Native of Sierra Leone in low grassy places. Flowers blue. Perhaps belonging to a proper section. This plant has the habit of a species of *Genésta*.

Rare-leaved Milkwort. Fl. Feb. May. Shrub 1 to $1\frac{1}{2}$ foot.

Sect. III. Blephari'dium (from *βλεφαρις, blepharis*, an eyelash, and *ειδος, eidos*, similar, in allusion to the ciliary margins of the capsule.) D. C. prod. 1. p. 326. Keel of corolla crested. Capsules emarginate at the apex, with ciliated margins. Racemes short, lateral. Bracteas 3, small, situated at the base of each pedicel. Small much branched herbs, natives of India, Egypt, and Guinea. Flowers pale-red and greenish.

76 P. telephioi`des (Willd. spec. 3. p. 876.) flowers crested; racemes axillary, twice as long as the leaves; stem simple, erect; leaves oblong, obtuse, tapering to the base. ⊙. S. Native of the East Indies. Flowers green. Capsule ciliated.

Orpine-like Milkwort. Pl. ½ foot.

77 P. erio'ptera (D. C. prod. 1. p. 326.) stems ascending, branched, pubescent-velvety at the apex; leaves linear, acutish, glabrous; racemes 4-5-flowered; wings of calyx elliptical, pubescent, longer than the oblong velvety capsule. ♃. S. Native of Senegal and Egypt. P. paniculàta, Forsk. fl. arab. no. 429? Flowers pale-red?

Woolly-winged Milkwort. Pl. 1 foot.

78 P. obtusa'ta (D. C. prod. 1. p. 326.) stems diffuse, twiggy, glabrous; leaves linear, very obtuse; racemes 2-6-flowered; wings of calyx oblong, obtuse, glabrous, somewhat ciliated, longer than the capsule, which is rather pubescent. ♃. G. Native of Arabia and Egypt.

Obtuse-winged Milkwort. Pl. 1 foot.

79 P. linarifo'lia (Willd. spec. 3. p. 877.) stem erect, twiggy, branched, pubescent; leaves linear, straight; racemes 6-8-flowered; wings of calyx oval-oblong, acute; capsules obcordate, ciliated. ♃? ♄? S. Native of the islands of Mindanao and Samboagang. Flowers reflexed.

Toad-Flax-leaved Milkwort. Pl. 1½ foot.

80 P. procu'mbens (Roth. nov. spec. p. 329.) stem procumbent, pilose; leaves oblong-oval, obtuse, somewhat mucronated, ciliated, glabrous; racemes axillary, short, few-flowered; wings of calyx acuminated; capsules emarginate, edged with hairs. ♄? S. Native of the East Indies. Flowers purple.

Var. β, angustifòlia (Roth. l. c.) leaves longer and narrower than in variety α.

Procumbent Milkwort. Pl. procumbent.

81 P. glomera'ta (Lour. fl. coch. 426.) stem somewhat erect, branched, pubescent; leaves obovate-oblong; racemes dense, 7-8-flowered; wings of calyx oval, acuminated; corolla generally 3-petalled; capsules orbicular. ♃. ♄. G. Native of China near Canton. Flowers white.

Glomerated-flowered Milkwort. Pl. ½ foot.

82 P. glaucoi'des (Lin. spec. 991.) stems diffuse, somewhat pubescent; leaves oval-oblong, on short stalks, glabrous, glaucous; racemes 7-8-flowered; wings of calyx oval, acute; capsules obovate, emarginate, somewhat ciliated. ♃. S. Native of Ceylon. Flowers white.

Glaux-like Milkwort. Pl. 2 inches.

83 P. arena'ria (Willd. spec. 3. p. 880.) stem procumbent; leaves oblong, stalked; racemes ovate-globose, on short peduncles; wings of calyx obovate, downy; capsules oval, emarginate, ciliated. ⊙. S. Native of Guinea. Flowers reflexed.

Sand Milkwort. Pl. procumbent ½ foot.

84 P. serpyllifo'lia (Poir. dict. 5. p. 499.) stems branched from the base, pubescent, lateral ones procumbent; leaves oblong, obtuse, on very short footstalks; racemes 4-5-flowered; wings of calyx oval, acute; capsules ovate, immarginate, ciliated. ♃? S. Native of the East Indies. Flowers rose-coloured.

Wild-thyme-leaved Milkwort. Pl. procumbent.

85 P. arve'nsis (Willd. spec. 3. p. 876.) stem branched from the base, procumbent; leaves obovate, mucronated; racemes 7-8-flowered; bracteas permanent, almost the length of the pedicels; wings of calyx oblong, scarcely longer than the ovate, emarginated, ciliated capsule. ⊙. S. Native of the East Indies. Flowers small, green.

Corn-field Milkwort. Pl. procumbent.

86 P. Vahlia'na (D. C. prod. 1. p. 326.) stem erect, pubescent; leaves obovate, mucronated, rather villous, upper ones oblong; racemes 3-5-flowered; wings of flower elliptical, scarcely longer than the capsule, which is ovate, emarginated, and ciliated. ⊙. S. Native of the East Indies. P. tomentòsa, Vahl. but not of Thunb. Flowers greenish.

Vahl's Milkwort. Pl. ½ foot.

87 P. brachysta'chya (D. C. prod. 1. p. 327.) stem diffuse, rather downy; leaves linear, glabrous; racemes 3-5-flowered; wings of calyx oval, acuminated, somewhat falcate, a little longer than the emarginate ciliated capsule.—Native of the East Indies. Flowers greenish?

Short-spiked Milkwort. Pl. ½ foot.

88 P. leptorhi'za (D. C. prod. 1. p. 326.) stem branched from the base, diffuse, somewhat downy; leaves linear, pubescent; racemes 7-8-flowered; wings of calyx elliptical, obtuse, a little longer than the oval, emarginated, ciliated capsule. ⊙. S. Native of? Flowers greenish?

Slender-rooted Milkwort. Pl. ½ foot.

89 P. persicariæfo'lia (D. C. prod. 1. p. 326.) stem erect, forked at the top and rather hairy; leaves lanceolate, bluntish, pilose; racemes 10-15-flowered, rising from the fork of the stem; wings of calyx obovate, longer than the obcordate ciliated capsule. ⊙. G. Native of Nipaul. P. Buchanàni, D. Don, prod. p. 199. Flowers drooping, red. Capsule naked with a membranous margin. (D. Don.) Seeds very villous.

Persicaria-leaved Milkwort. Pl. ½ foot.

90 P. crotalarioi'des (Hamilt. ined. and D. C. prod. 1. p. 327.) stem branched from the base, somewhat shrubby, decumbent, pilose; leaves obovate, wedge-shaped; racemes short, 8-10-flowered, opposite the leaves; wings of calyx orbicular, equal in length to the capsule, which is rather orbicular and ciliated; lobes of the lateral petals oblong, 1-toothed at the base. ♃? G. Native of Nipaul. Bracteas permanent, acute. Flowers red or greenish.

Crotalaria-like Milkwort. Pl. ½ foot.

91 P. Java'na (D. C. prod. 1. p. 327.) stem branched from the base, suffruticose, diffuse; leaves obovately-cuneated, stalked; racemes 7-8-flowered, length of leaves; wings of flower ovate-roundish, villous, a little longer than the capsule, which is rather orbicular and pubescent. ♄. S. Native of Java. Perhaps belonging to this section.

Java Milkwort. Shrub ½ foot.

Sect. IV. Clincli'nia (from *Clinclin*, the Peruvian name of *P. thesioìdes*.) D. C. prod. 1. p. 327. Keel of flower crested. Wings oblong. Capsules glabrous, marginated and emarginated at the apex, as well as somewhat toothed on both sides at the top. American herbs or subshrubs, but one from Nipaul.

92 P. thesioi'des (Willd. spec. 3. p. 877.) stems many, erect; leaves oblong-linear, crowded; racemes 8-12-flowered; capsules somewhat 2-horned at the apex. ♃. S. Native of Chili and Peru. Clínclin, Feuill. obs. 2. t. 13. Flowers blue.

Thesium-like Milkwort. Pl. ½ foot.

93 P. gnidioi'des (Willd. spec. 3. p. 878.) stems diffuse, branched; leaves linear, bluntish; racemes 6-10-flowered; capsules somewhat emarginate. ♃. S. Native in Chili and Peru. Flowers greenish.

Gnidia-like Milkwort. Pl. ½ foot.

94 P. capillifo'lia (Desf. herb. and D. C. prod. 1. p. 327.) stems erect, hardly branched; racemes slender; leaves capillary; wings of calyx obovate; capsules bifid. ⊙. G. Native of? Perhaps belonging to this section? Flowers red?

Hair-leaved Milkwort. Pl. ¼ foot.

95 P. arilla'ta (Hamilt. mss. D. Don. prod. 1. p. 200.) leaves elliptical, oblong, acuminated, underneath as well as the branches pubescent; racemes opposite the leaves; wings of calyx obovate-oblong; stigma bidendate; capsule rather baccate, with a winged margin. ♄. F. Native of Nipaul at Narainhetty. Habit of *Monnìna polystàchya*. Flowers large, shewy, red, nodding. Capsule subbaccate, compressed, ribbed with a winged margin, 2-celled. Seeds large, covered with an arillus.

Arillate-seeded Milkwort. Fl. Aug. Shrub 1 foot.

Sect. V. Timu'tua (from *Timoutou*, the name of a place in

Cayenne). D. C. prod. 1. p. 327. Keel of flower crested (crest sometimes very minute). Capsules glabrous, oval-oblong, hardly emarginate. Racemes sometimes elongated, sometimes crowded, forming a dense spike. Flowers small, lower ones soon falling off. Leaves alternate or in whorls. American herbs or small shrubs. The character given by M. Anguste St. Hilaire to this section is as follows: Style 4-lobed; lobes nearly equal, or very unequal, upper lobe bearded or appendiculate, lower one gland-formed. Caruncle of seed very minute or with 2 small appendages.

96 P. trichospe'rma (Lin. mant. 259.) racemes ovate, spike-formed; leaves alternate, oblong-linear, erect; stems erect, twiggy. ♃. S. Native in New Granada. Jacq. obs. 3. t. 67. Flowers small, white.

Hairy-seeded Milkwort. Pl. ½ foot.

97 P. aspa'latha (Lin. mant. 99.) racemes dense, roundish, capitate; leaves numerous, alternate, linear-setaceous, mucronate, spreading, full of pellucid dots; stems suffruticose, erect, twiggy, simple, or branched. ♄. S. Native in Brazil in marshy places in the province of St. Paul. Flowers purple, rarely white; wings elliptical, rather longer than the keel. Seeds pubescent.

Aspalathus-like Milkwort. Fl. Feb. Sh. ¼ foot.

98 P. stelle'ra (D. C. prod. 1. p. 327.) racemes somewhat capitate, spike-formed; wings lanceolate, acuminated, longer than the keel; leaves smooth, scattered, few, lower ones opposite, elliptical, obtuse, the rest linear, all full of pellucid dots; stems erect, branched, twiggy; seeds conical, silky, unappendiculate. ⊙. S. Native in Brazil, Portorico, and St. Domingo. Flowers dark-purple.

Starry Milkwort. Fl. Jan. Feb. Pl. ½ to 1 foot.

99 P. hygro'phila (H. B. et Kunth, nov. gen. amer. 5. p. 395. t. 508.) racemes dense, spike-formed, oblong; wings elliptical, longer than the keel; leaves scattered, linear, acute, rather falcate, smooth, lower ones four in a whorl; stem erect, twiggy, almost simple; seeds small, elliptical, pilose. ⊙. S. Native in humid places near Esmeralda on the Orinoco and in Brazil. P. Berteriàna, D. C. prod. 1. p. 328. Flowers whitish, and marked with purple.

Water-loving Milkwort. Fl. May, June. Pl. ½ foot.

100 P. filifo'rmis (St. Hil. fl. bras. 2. p. 7.) stem long, filiform, simple, almost leafless; upper leaves scale-formed, hardly conspicuous; racemes spike-formed, very narrow, lax; wings elliptical, obtuse, shorter than the keel. ⊙. S. Native of Brazil in the province of Minas Geraes on a mountain called Serra da Caraca. Flowers purple, Stigma 4-lobed.

Filiform Milkwort. Fl. April. Pl. 1½ foot.

101 P. equisetoi'des (St. Hil. fl. bras. 2. p. 7.) stem herbaceous, leafless; branches dichotomous; branchlets leafy; leaves very narrow, linear, acute; racemes spike-formed, rather conical; wings elliptical, obtuse, longer than the keel; seeds elongated, cylindrical, beaked, somewhat pubescent. ⊙. S. Native of Brazil in the western part of the province of Minas Geraes. Flowers probably purple. Stigmas 4-lobed. This species has the habit of *P. setàcea*, Mich.

Horse-tail-like Milkwort. Pl. ¾ foot.

102 P. incarna'ta (Lin. spec. 986, exclusive of Pluk. icon.) racemes spike-formed, oblong, without glands; leaves scattered, few, awl-shaped; stem erect, scarcely branched. ⊙. H. Native in low, sandy fields near rivulets from New Jersey to Carolina. A delicate little plant with bright flesh-coloured flowers.

Flesh-coloured-flowered Milkwort. Fl. Ju. July. Clt. 1812. Pl. ½ to 1 foot.

103 P. longicau'lis (H. B. et Kunth, nov. gen. amer. 5. p. 396.) racemes spike-formed, roundish; corolla glandular; leaves scattered, remote, linear, covered with glandular dots; stem elongated, somewhat branched. ⊙. S. Native in New Andalusia and New Granada. Plant smooth. Wings of flower rose-coloured. Seeds conical, covered with retrograde silky hairs.

Long-stemmed Milkwort. Fl. June, July. Pl. 1½ foot.

104 P. adeno'phora (D. C. prod. 1. p. 327.) racemes oblong, spike-formed; wings of calyx as well as capsules glandular; leaves scattered, few, awl-shaped; stem erect, somewhat branched. ⊙. S. Native in dry pastures of Guiana. P. incarnàta, Aubl. guian. 2. p. 739. exclusive of the synonymes. Flowers flesh-coloured.

Gland-bearing Milkwort. Fl. Ju. Jul. Pl. ½ to 1 foot.

105 P. bi'color (H. B. et Kunth, nov. gen. amer. 5. p. 394. t. 507.) racemes dense, cylindrical, spike-formed; 3 shorter sepals bearing 2 thick parallel nerves; leaves full of shining dots; lower ones 3 or 5 in a whorl, upper ones scattered, linear-lanceolate. ⊙. S. Native of Mexico near Santa-Rosa. Plant smooth, simple. Flowers about the size of those of *P. Austrìaca*, whitish, lower ones reddish-copper-coloured.

Two-coloured-flowered Milkwort. Fl. May, July. Pl. ½ foot.

106 P. Timou'tou (Aubl. guian. 2. t. 225.) racemes spike-formed, cylindrical, imbricated; flowers at length reflexed; wings ovate-lanceolate, obtuse, longer than the keel; leaves sessile, oblong, somewhat mucronated, lowest ones obovate, 4 in a whorl, upper ones oblong, acute, alternate; stem erect, branched, 4-angled, winged; seeds pilose. ⊙. S. Native of Cayenne and Brazil in wet places. P. lupulìna, Willd. spec. 3. p. 880. P. uliginòsa, Pers. ench. 2. p. 272. Flowers whitish-green. P. cuspidàta, D. C. prod. 1. p. 328. *Timoutou* is the name of the place in Cayenne, where this plant was first collected by Aublet.

Timoutou Milkwort. Pl. ½ to 1 foot.

107 P. di'stans (St. Hil. fl. bras. 2. p. 24. t. 84.) stem herbaceous, almost simple, erect; leaves 5 or 7 in a whorl, lanceolate, very acute, full of pellucid dots; whorls few and very remote; racemes spike-formed, very narrow and rather loose; wings obovate, about equal in length with the keel; seeds oblong, pubescent. ⊙. S. Native of Brazil in the province of Minas Geraes in the desert called Certao. Flowers purple?

Distant-leaved Milkwort. Pl. ½ to ¾ foot.

108 P. molluginifo'lia (St. Hil. fl. bras. 2. p. 25.) stem dichotomous, quadrangular; leaves 4 in a whorl, linear or oblong-linear, mucronulate, full of glandular dots, smooth; racemes spike-formed; wings elliptical, equal in length with the keel; seeds oblong, pubescent. ⊙. S. Native of Brasil in the provinces of St. Paul and Cis Platine, &c. Flowers purple.

Mollugo-leaved Milkwort. Fl. Oct. Jan. Pl. ½ to 1 foot.

109 P. varia'bilis (H. B. et Kunth, nov. gen. 5. p. 397. t. 509.) racemes spike-formed, rather loose; leaves scattered, remote, narrow, linear, glabrous, full of pellucid dots; stems ascending, fastigiately branched at the top. ⊙. S. Native of South America. Seeds conical, covered with retrograde hairs.

Var. α; flowers rose-coloured. On the banks of the river Orinoco.

Var. β; flowers white. Near Maypures.

Var. γ; stem simple. Near Esmeralda.

Variable-flowered Milkwort. Pl. ½ to ¾ foot.

110 P. crucia'ta (Lin. amœn. 2. p. 138.) racemes spike-formed, ovate, imbricated; wings of younger flowers with long points; leaves linear, 4 in a whorl; stem erect, branched, angular. ⊙. H. Native in wet places on the edges of bogs and rivulets from Canada to Carolina. Flowers red, mixed with green. Plant dwarf and spreading.

Cross-leaved Milkwort. Fl. July, Sept. Clt. 1739. Pl. ¾ ft.

111 P. brevifo'lia (Nutt. gen. amer. 2. p. 89.) racemes spike-formed, partly capitate; wings of flower cordate-ovate, acute; leaves oblong-linear, full of resinous dots, 4 in a whorl;

stem erect, branched, winged. ⊙. H. Native on the margins of sandy swamps of New Jersey, and on the banks of the Ohio. Flowers bright red.

Short-leaved Milkwort. Fl. July. Clt. 1824. Pl. ½ foot.

112 P. fastigia'ta (Nutt. gen. amer. p. 89.) racemes spike-formed, somewhat capitate; wings of calyx spreading, acute; leaves alternate, linear, acute; stem slender, fastigiately branched. ⊙. H. Native of New Jersey, Flowers red.

Fastigiate-branched Milkwort. Fl. Ju. Sep. Clt. 1824. Pl. ½ ft.

113 P. lu'tea (Lin. spec. 990.) racemes spike-formed, dense, ovate; wings of calyx mucronated; leaves oblong-lanceolate, acute, radical ones somewhat stalked and spatulate; stems simple, elongated; keel with a small, minute crest. ⊙. H. Native in wet woods and bogs from New Jersey to Florida. A fine species, with flowers of a golden yellow.

Yellow-flowered Milkwort. Fl. Jul. Aug. Clt. 1739. Pl. ¾ ft.

114 P. na'na (D. C. prod. 1. p. 328.) racemes spike-formed, dense, cylindrical; wings of calyx ovate, with a narrow point; leaves oblong-spatulate, stalked; stems simple, scarcely longer than the leaves. ⊙. H. Native in pine forests of Carolina and Georgia. P. viridéscens, Nutt. gen. 2. p. 88. not of others. P. lùtea β, Mich. Flowers green, with a tinge of yellow. P. lùtea β, nàna, Pursh, fl. amer. sept. 2. p. 465.

Dwarf Milkwort. Fl. July, Aug. Clt. 1815. Pl. ¼ foot.

115 P. viride'scens (Pursh, fl. amer. sept. 2. p. 465.) stem erect, very simple; leaves linear-lanceolate, bluntish; spike capitate, terminal. ⊙. H. Native of North America from Pennsylvania to Carolina. Flowers greenish-white with some red. In general habit the plant is like *P. incarnàta*. Perhaps the keel is without a crest. Perhaps the same as the preceding.

Greenish-flowered Milkwort. Fl. July, Aug. Pl. ½ foot.

116 P. angula'ta (D. C. prod. 1. p. 328.) racemes spike-formed, short, 8-10-flowered; wings of calyx oblong; leaves oval, with a narrow point; stems branched, ascending, angularly-winged, shrubby. ♄. S. Native of Brazil. Flowers purple?

Angular-branched Milkwort. Pl. ½ foot.

117 P. lancifòlia (St. Hil. fl. bras. 2. p. 42.) stem suffruticose, puberulous; leaves ovate, lanceolate, acuminated and very acute; racemes spike-formed; wings obovate, very blunt; seeds clavate, scarcely tomentose. ♄. S. Native of Brazil on the margins of woods in the province of Minas Geraes. Flowers greenish-white.

Lance-leaved Milkwort. Fl. Oct. March. Shrub 1 foot.

118 P. pulche'lla (St. Hil. fl. bras. 2. p. 30.) herbaceous; stem short, rather tufted, filiform, rather pubescent; leaves small, linear, tapering to both ends, very acute; racemes spike-formed, shortish, rather loose; wings obovate, with long claws rather longer than the keel; seeds cylindrical, hardly pilose. ⊙. S. Native of Brazil. Flowers whitish.

Pretty Milkwort. Fl. Sept. Oct. Pl. ¼ foot.

119 P. purpu'rea (Nutt. gen. 2. p. 88.) racemes spike-formed, ovate, imbricated; wings of calyx ovate, cordate, twice as long as the capsule; leaves alternate, oblong-linear; stems erect, fastigiately branched. ⊙. H. Native of North America. P. sanguínea, Mich. fl. bor. amer. 2. p. 52. and Pursh. Flowers purplish with the keel almost beardless. Bart. fl. amer. t. 47.

Purple-flowered Milkwort. Fl. July, Aug. Clt. 1739. Pl. ½ to ¾ foot.

120 P. sangui'nea (Lin. spec. 991.) racemes spike-formed, oblong; wings obovate, length of capsule; leaves alternate, narrow-linear; stem erect, fastigiately branched. ⊙. H. Native in woods on the sides of hills from New England to Carolina. P. viridéscens, Poir. dict. 5. p. 502.—Pluk. mant. t. 438. f. 5. Flowers rose-coloured, with the keel almost beardless.

Bloody Milkwort. Fl. July, Aug. Clt. 1739. Pl. ¼ to ½ ft.

121 P. seta'cea (Mich. fl. bor. amer. 2. p. 52.) racemes spike-formed, dense, oblong; leaves scale-like, almost wanting; stem erect, setaceous, almost simple. ⊙. H. Native of Carolina and Georgia. Flowers small, almost sessile.

Bristly-stemmed Milkwort. Fl. July, Aug. Pl. ½ foot.

122 P. gra'cilis (H. B. et Kunth, nov. gen. amer. 5. p. 401.) racemes spike-formed, slender, loose; leaves scattered, linear; stem erect, elongated, scarcely branched. ⊙. S. Native in humid places near the Maypures on the Orinoco. Flowers purple. Seeds obliquely oblong, covered with retrograde hairs.

Slender-spiked Milkwort. Fl. May. Pl. 1 foot.

123 P. paludòsa (St. Hil. fl. bras. 2. p. 8.) herbaceous, smooth; stem erect, branched, or simple; leaves narrow, linear, acute: racemes spike-formed; wings oblong, unguiculate, rather longer than the keel; seeds hairy, subglobose, or subcylindrical. ⊙. S. Native of Brazil in the sand in several places. Flowers yellow. Stigma 4-lobed.

Var. β, *myùrus* (St. Hil. l. c.) stems and branches much shorter; racemes longer, narrower; flowers very minute, at first yellowish-green, then purplish; seeds ovate-globose. ⊙. S. Native in the province of St. Paul. P. ténuis, D. C. prod. 1. p. 329.

Var. γ, *amethýstina* (St. Hil. l. c.) stem filiform, almost simple; racemes a little longer and rather narrower; flowers amethyst; seeds ovate-globose. ⊙. S. In Minas Geraes.

Var. δ, *ambígua* (St. Hil. l. c.) stem almost simple; racemes elongated, more crowded; flowers larger; capsule oblong; seeds ovate-globose.

Var. ε, *longispicàta* (St. Hil. l. c.) stem and branches shorter; leaves much longer, flattish; racemes longer and narrower; flowers hardly larger, amethyst blue; wings large elliptical; capsule oblong; seeds rather cylindrical, rather truncately-obtuse at the apex. ⊙. S. In St. Catherine in sandy places.

Var. ζ, *appendiculàta* (St. Hil. l. c.) stem filiform, almost simple, nearly leafless; racemes lax; capsule oblong; seeds cylindrical, truncately obtuse at the apex, unappendiculate or appendiculate. ⊙. S. In marshes near Gaxueirinha.

Var. θ, *gigantèa* (St. Hil. l. c.) stem tall, branched, almost leafless; flowers approximate, longer, pale-purplish; capsule oblong; seeds cylindrical, truncately obtuse at the apex, with short appendages. ⊙. S. In Minas Geraes.

Marsh Milkwort. Pl. ½ to 1 foot.

124 P. subti'lis (H. B. et Kunth, nov. gen. amer. 5. p. 393. t. 506.) racemes capitellate, dense; flowers glandular on the back; wings oblong, acute, longer than the keel; leaves form of scales, remote, linear-awl-shaped; stem erect, filiform, branched at the top. ⊙. S. Native in humid sandy places on the borders of the river Orinoco and in Brazil. Flowers small, white. Style 4-lobed. Seeds globose, smoothish, unappendiculate.

Delicate Milkwort. Fl. July, Sept. Pl. ½ foot.

125 P. atropurpu'rea (St. Hil. fl. bras. 2. p. 10.) stem herbaceous, rather twiggy, nearly leafless, sparingly and dichotomously branched; leaves scale-formed, hardly conspicuous, rather terete, acute; racemes spike-formed, rather pyramidal; wings almost equal in length to the keel, orbicular; seeds obovate-globose, rather hairy, with short appendages. ⊙. S. Native of Brazil in the province of Minas Geraes. Flowers dark purple. Style 4-lobed.

Dark-purple Milkwort. Fl. May. Pl. 1 to 1½ feet.

126 P. herbìola (St. Hil. fl. bras. 2. p. 12.) stem herbaceous, filiform, nearly leafless, sparingly branched; leaves small, very narrow-linear, acute; racemes capitate, dense; wings oblong-elliptic, obtuse, longer than the keel; seeds conically-oblong, rather pubescent, inappendiculate. ⊙. S. Native of Brazil in humid pastures of Serra da Canastra in the province of Minas Geraes. Flowers purple.

Small-herb Milkwort. Fl. March, June. Pl. ½ foot.

127 P. ju'ncea (St. Hil. fl. bras. 2. p. 13.) stem erect, angular, nearly leafless; leaves scale-formed, hardly conspicuous, rather ovate, acute; racemes capitate; wings elliptical, longer than the keel; seeds oblong, hairy. ⊙. S. Native of Brazil in the province of Minas Geraes on Serra da Canastra. Flowers pale-purple.

Rushy Milkwort. Fl. March. Pl. ¾ foot.

128 P. glochida'ta (H. B. et Kunth, nov. gen. amer. 5. p. 400.) racemes loose, slender, spike-formed; leaves narrow-linear, opposite, or in whorls, those on the branches scattered; stem erect, paniculately-branched. ⊙. S. Native in humid places near the rivers Orinoco and Magdalena. Herb glabrous. Flowers pale flesh-coloured. Seeds oblong, covered with hooked hairs.

Hooked-haired-seeded Milkwort. Fl. May, Aug. Pl. ½ ft.

129 P. ambi'gua (Nutt. gen. amer. 2. p. 89.) racemes spike-formed, acute, on long peduncles; wings of flower round, equalling the capsule in length; leaves linear, lower ones in whorls, the rest scattered; stem erect, twiggy, branched. ⊙. H. Native of New Jersey and Virginia. Flowers large, purplish.

Ambiguous Milkwort. Fl. July, Aug. Clt. 1824. Pl. ½ to 1 ft.

130 P. verticilla'ta (Lin. amœn. 2. p. 159.) racemes spike-formed, acute, peduncled; wings of calyx roundish; leaves linear, in whorls; stem erect, branched. ⊙. H. Native on the sides of dry hills and in pine-forests from New York to Carolina. Flowers very small, white, or sometimes pale red, but usually greenish. Pluk. mant. t. 438. f. 4.

Whorl-leaved Milkwort. Fl. Ju. July. Clt. 1739. Pl. ½ ft.

131 P. galioìdes (Poir. dict. 5. p. 503.) racemes spike-formed, very slender, loose, peduncled; wings roundish-obovate, somewhat emarginate, about equal in length with the keel; leaves linear-lanceolate, or linear-mucronate, 4 or 5 in a whorl, full of pellucid dots; stem erect, slender, sparingly branched, quadrangular. ⊙. S. Native of Cayenne and the Caribbee Islands as well as Brazil. Flowers purple.

Lady's Bedstraw-like Milkwort. Fl. Feb. March. Pl. ½ ft.

132 P. spergulæfòlia (St. Hil. fl. bras. 2. p. 28.) stems herbaceous, slender, beset with glandular pubescence; branches filiform; leaves small, very narrow-linear, acute, tapering to the base, 4 in a whorl, upper ones alternate; racemes spike-formed, loose, crowded into a kind of corymb; wings oblong-elliptical, rather longer than the keel; seeds elliptical, villous; hairs glandular. ⊙. S. Native of Brazil in the province of St. Paul. Flowers white.

Spurry-leaved Milkwort. Fl. Dec. Pl. ½ foot.

133 P. crucianelloìdes (D. C. prod. 1. p. 329.) racemes spike-formed, loose, on peduncles; wings of calyx oblong; leaves rhomb-ovate, wedge-shaped at the base, in whorls, uppermost ones alternate; stem erect, angular. ⊙. S. Native of St. Domingo. Flowers white or pale rose-coloured?

Crosswort-like Milkwort. Pl. ½ foot.

134 P. asperuloìdes (H. B. et Kunth, nov. gen. amer. 5. p. 403.) racemes spike-formed, slender, rather loose; flowers glandular on the back; leaves oblong, full of pellucid dots, glabrous, opposite, or 3 or 6 in a whorl; stems diffuse, tufted. ♃. S. Native of South America. Seeds oblong, covered with retrograde silky down. Flowers rose-coloured.

Woodruff-like Milkwort. Pl. 1 foot.

135 P. cypari'ssias (St. Hil. fl. bras. 2. p. 15.) herbaceous; stems usually umbellately branched; leaves numerous, rather terete, linear, very narrow, mucronate; racemes capitate, very obtuse; wings obovate, very blunt, equal in length to the keel; seeds globose, rather pilose. ⊙. S. Native of Brazil near Rio Janeiro by the sea-side and by the sides of lakes, where it is called *Alegrim da Praya*. Flowers purplish?

Cypress-like Milkwort. Fl. April, Aug. Pl. 1 foot.

136 P. polyce'phala (St. Hil. fl. bras. 2. p. 16.) herbaceous; stems usually umbellately crowded; leaves very numerous, approximate, needle-shaped, acute, rather terete; racemes capitate; wings oblong-elliptical, rather narrow, very acute, longer than the keel; seeds elliptical, punctate, smooth. ⊙. S. Native of Brazil in sand on the banks of the river Plate and many other places. Flowers whitish.

Many-headed Milkwort. Fl. Sep. Dec. Pl. ¼ to ¾ foot.

137 P. corisoìdes (St. Hil. fl. bras. 2. p. 17. t. 83.) stem herbaceous, procumbent; branches simple, angular, compressed and complanate; leaves fleshy, very numerous, deflexed, linear, obtuse, mucronate; racemes capitate, sessile; wings ovate-elliptical, obtuse, mucronulate, longer than the keel. ⊙. S. Native of Brazil by the sea-side in the province of Cis Platine. Flowers coloured with violet and white.

Coris-like Milkwort. Fl. Oct. Pl. ½ foot.

138 P. stri'cta (St. Hil. fl. bras. 2. p. 18.) stem short, strict; leaves imbricate, fleshy, linear, mucronulated, full of pellucid dots; racemes capitate, very obtuse; wings oblong-elliptical, very acute, longer than the keel; seeds rather cylindrical, hairy-villous. ⊙? S. Native of Brazil in the province of Minas Geraes. Flowers white, tinged with purple.

Straight Milkwort. Fl. April, Aug. Pl. ½ foot.

139 P. ri'gida (St. Hil. fl. bras. 2. p. 18.) stems suffruticose, somewhat dichotomous, straight, puberulous; leaves very numerous, imbricate, stiff, linear-lanceolate, mucronate, full of pellucid dots; racemes capitate, dense; wings elliptical, mucronate, longer than the keel. ⊙. S. Native of Brazil in the province of Goyaz at the base of the mountain called Serra das Caldas.

Stiff Milkwort. Fl. Aug. Pl. 1 foot.

140 P. coria'cea (St. Hil. fl. bras. 2. p. 19.) stems suffruticose, angular at the apex, erect; leaves sessile, coriaceous, imbricated, lanceolate, very acute, clammy and much nerved, and full of pellucid dots; racemes capitate, small; wings oblong, narrow, acuminated, longer than the keel; seeds oblong-clavate, very villous. ♄. S. Native of Brazil in the southern part of the province of Goyaz. Flowers greenish-white.

Coriaceous-leaved Milkwort. Fl. Aug. Shrub ½ foot.

141 P. poa'ya (Mart. mat. med. bras. fasc. 1. p. 13.) stem suffruticose, 5-angled; leaves coriaceous, 5-nerved; racemes spike-formed; wings oblong-elliptical, or obovate, obtuse, rather longer than the keel; seeds clavate, very villous. ♄. S. Native of Brazil in the provinces of Minas Geraes and Goyaz. *Poaya* is the name of the plant in Brazil, where the roots are used by the inhabitants for Ipecacuan. All emetic plants are called *Poaya* in Brazil. St. Hil. pl. usu. bras. no. 71.

Poaya Milkwort. Fl. April, Aug. Pl. 1 foot.

142 P. adenophy'lla (St. Hil. fl. bras. 2. p. 20.) stem suffruticose, erect, 5-angled, smooth; leaves sessile, obovate, obtuse, mucronate, full of pellucid tubercles; racemes spike-formed, elongated; wings oblong-elliptical, obtuse, scarcely shorter than the keel; seeds oblong-clavate, villous. ♄. S. Native of Brazil. Flowers greenish-white. This plant smells like *Anthoxánthum*.

Var. β, *parvifòlia* (St. Hil. l. c.) leaves much smaller, and very numerous, and somewhat imbricate, lanceolate, acute, mucronate. In the province of St. Paul.

Gland-leaved Milkwort. Fl. Dec. March. Shrub ½ foot.

143 P. Raddia'na (St. Hil. fl. bras. 2. p. 26.) stem herbaceous, erect, puberulous; leaves 4 in a whorl, rather terete, linear, acute, erectish; racemes spike-formed, loose; wings obovate, longer than the keel; seeds clavate, inappendiculate, beset with glandular hairs. ⊙. S. Native of Brazil in the province of Minas Geraes. Flowers elegant.

Var. β, subaphýlla (St. Hil. l. c.) stem much longer, slenderer, nearly leafless; branches slenderer; whorls of leaves much more distant, lower ones deciduous, upper ones very minute; upper part of the rachis quite naked, therefore the spikes of flowers appear to stand on long peduncles.

Raddi's Milkwort. Fl. Aug. Sep. Pl. ½ to ¾ foot.

144 P. paniculàta (Lin. amœn. 5. p. 402.) racemes somewhat spike-formed, loose, elongated; wings of calyx elliptical, tapering into the claws, about equal in length to the keel; leaves scattered, linear, tapering to both ends, mucronulate at the apex; stem erect, much branched at the top; branches puberulous. ⊙. S. Native throughout South America in dry places. Ker. bot. reg. t. 761. Flowers rose-coloured or pale purple.

Var. β, Brasiliàna (D. C. prod. 1. p. 329.) flowers smaller; leaves broader. Native of Brazil. Seeds cylindrical, pubescent.

Var. γ, Africàna (D. C. l. c.) leaves linear-awl-shaped. Native of Sierra Leone.

This beautiful little plant has much the smell and taste of *P. Sénega*, but is not so strong or disagreeable. It is a mild attenuant and sudorific, and may be administered in infusions or decoctions.

Panicled-flowered Milkwort. Fl. Jul. Aug. Clt. 1823. Pl. ½ ft.

145 P. scopària (H. B. et Kunth, nov. gen. amer. 5. p. 399.) racemes spike-formed, rather loose; leaves scattered, linear; stem erect, somewhat fastigiately-branched; root vermicular, twisted. ♃. S. Native near Mexico. Herb smooth. Flowers white. Seeds oblong, cylindrical, covered with retrograde silky hairs.

Broom Milkwort. Pl. ½ to 1 foot.

146 P. corymbòsa (Mich. fl. bor. amer. 2. p. 54.) racemes many, disposed in a terminal corymb; wings of calyx oblong, cuspidate; radical leaves obovate, cauline ones linear, uppermost ones awl-shaped. ♃. F. Native in bogs among sphagnum from Carolina to Florida. P. cymòsa, Walt. carol. 179. Flowers citron-yellow.

Corymbose Milkwort. Fl. June, Aug. Pl. 1 foot.

147 P. graminifòlia (Poir. dict. 5. p. 500.) racemes many, disposed into a terminal corymb; wings of calyx oblong, acute; radical leaves linear-spatulate, cauline ones linear-awl-shaped. ♃. F. Native of grassy places from Carolina to Florida. Perhaps *P. attenuàta*, Nutt. gen. amer. 2. p. 90. Flowers citron-yellow. A tall plant.

Grass-leaved Milkwort. Fl. July. Clt. 1824. Pl. 3 feet.

148 P. Balduìni (Nutt. gen. amer. 2. p. 90.) racemes numerous, corymbose, peduncled; wings of calyx lanceolate, cuspidate; radical leaves spatulate, cauline ones alternate, lanceolate; stem erect, angular, a little branched at the top. ♃. F. Native of Florida near St. Mary's. Flowers greenish-white.

Baldwin's Milkwort. Pl. ¾ foot.

149 P. Neæ'i (D. C. prod, 1. p. 329.) racemes many, short, crowded into a corymb: wings of calyx oblong, acute; leaves awl-shaped; stems many, rising from the root, at top a little branched. ⊙. G. Native of Peru and Chili. Flowers white.

Nee's Milkwort. Pl. ½ foot.

150 P. Muhlenbe'rgii; stem erect, pubescent; branches twiggy; leaves lanceolate, linear, ciliated; racemes elongated; bracteas deciduous; flowers distinct. ⊙. H. Native of Georgia. P. pubéscens, Muhl. not of Nutt.

Muhlenberg's Milkwort. Pl. ½ foot.

151 P. linoìdes (Poir. dict. 5. p. 449.) racemes somewhat spike-formed, elongated, acute; wings elliptical, obtuse, hardly longer than the capsule; leaves small, linear, acuminated, crowded, rather falcate; stems tufted, branched at the top; seeds oblong-clavate, rather pilose. ♃. S. Native of Brazil about Monte-Video and Buenos-Ayres. Habit of *Resèda glaúca*. Flowers white or green, usually coloured with purple.

Flax-like Milkwort. Fl. Nov. Pl. ½ to ¾ foot.

152 P. resedoìdes (St. Hil. fl. bras. 2. p. 31.) stem herbaceous, tufted, simple, puberulous, full of resinous dots; leaves numerous, narrow, linear, falcately curved, very acute; racemes spike-formed, rather loose; wings obovate, very blunt, rather longer than the keel; seeds subcylindrical, rather pilose. ⊙. S. Native of Brazil in the provinces of Rio Grande do Sul and Cis Platine. Flowers white, often mixed with blue and purple.

Mignonette-like Milkwort. Fl. Oct. Nov. Pl. ½ foot.

153 P. dunalia'na (St. Hil. fl. bras. 2. p. 32. t. 85.) stems very slender; leaves small, appressed, ovate-lanceolate, very much acuminated, mucronulate, cordate at the base; racemes spike-formed, slender; wings ovate-rhomboid, hardly longer than the keel; seeds rather cylindrical, incurved, smooth. ♄. S. Native of Brazil near a town called Rio Pardo. Flowers purplish, disposed in racemes resembling *Erìca vulgàris*.

Var. β, álba (St. Hil. l. c.) leaves less cordate at the base, less puberulous; flowers white or pale purple. ♄. S. In Minas Geraes.

Dunal's Milkwort. Fl. Feb. Sept. Sh. 1 foot.

154 P. a'lba (Nutt. gen. 2. p. 87.) racemes spike-formed, peduncled; wings of calyx roundish, length of corolla; leaves alternate, linear, with revolute margins; stem simple, elongated. ♃. F. Native of Upper Louisiana. P. Sénega, var. álba, Pursh. Flowers white. This plant possesses the same qualities as *P. Sénega*. no. 168. p. 359.

White-flowered Milkwort. Fl. June, July. Pl. ½ to 1 foot.

155 P. rube'lla (Pursh, fl. amer. sept. 2. p. 464.) pubescent; racemes rather loose, somewhat spiked, elongated; wings of calyx oval, very blunt; leaves lanceolate-linear, mucronated; stem erect, furrowed, a little branched at the top. ♃. H. Native in woods and on dry shady hills from Pennsylvania to Georgia. P. polýgama, Walt. Flowers pale red. This species approaches near to *P. vulgàris*.

Like some of the European species this plant is a powerful bitter, imparting its properties both to water and alcohol. In the United States of America it is administered in small doses, as a useful tonic and stimulant to the digestive organs. In large doses it operates as a cathartic and excites diaphoreses. Dr. Bigelow says its powers appear to resemble the *P. vulgàris* and *P. amàra* of Europe, which are considered tonic and expectorant.

Red-flowered Milkwort. Fl. June, July. Pl. ½ foot.

156 P. Duartea'na (St. Hil. fl. bras. 2. p. 34.) stem herbaceous, puberulous; leaves linear, acute, on short petioles, smooth; racemes spike-formed, narrow, loose; wings elliptical or obovate, bluntish, about equal in length with the keel; seeds clavate, rather pilose. ⊙. S. Native of Brazil in the province of Minas Geraes. Flowers greenish-white.

Duarte's Milkwort. Fl. Dec. Feb. Pl. 1 to 1½ foot.

157 P. Roubie'nna (St. Hil. fl. bras. 2. p. 35.) stem suffruticose, tufted, or a little branched; leaves obtuse, mucronulate, lower ones obovate; racemes spike-formed, truncate at the apex, loose; wings elliptical, very blunt, somewhat emarginate, equal in length to the keel; seeds rather cylindrical, incurved, villous, ♄. S. Native of Brazil in the province of Minas Geraes.

Roubieu's Milkwort. Fl. Mar. Shrub ½ to 1 foot.

158 P. Moquinia'na (St. Hil. fl. bras. 2. p. 36. t. 86.) stems suffruticose, prostrate, somewhat quadrangular, puberulous, leaves numerous, distich, lanceolate, mucronulate, puberulous, obsoletely-dotted; racemes capitate, obtuse, dense, on long peduncles; wings lanceolate, acute, longer than the keel; seeds cylindrical, pubescent. ♄. S. Native of Brazil in the province of St. Paul. The heads of flowers resemble those of *Jasiòne* or *Globulària*.

Moquin-Tandon's Milkwort. Fl. Mar. Sh. ½ foot.

159 P. obova'ta (St. Hil. fl. bras. 2. p. 37.) stem suffruti-

cose, crowded, puberulous; leaves usually obovate, mucronate, full of small pellucid dots; racemes capitate, dense; wings oblong-elliptical, rather narrow, acute, longer than the keel; seeds oblong-cylindrical, villous. ♄. S. Native of Brazil in the province of Rio Grande do Sul, among rocks. Flowers white.

Obovate-leaved Milkwort. Fl. Oct. Feb. Shrub ½ foot.

160 P. Cneo'rum (St. Hil. fl. bras. 2. p. 38.) stems suffruticose, ascending; leaves very numerous, narrow-linear, tapering to the base, mucronulate at the top, full of minute pellucid dots; racemes capitate, dense; wings ovate-lanceolate, mucronulate, about equal in length to the keel; seeds cylindrical, pubescent. ♄. S. Native of Brazil in the province of Minas Geraes.

Cneorum-like Milkwort. Fl. March. Shrub ½ foot.

161 P. bryoìdes (St. Hil. fl. bras. 2. p. 39.) stem suffruticose, crowded, dichotomous at the apex, puberulous, clammy; leaves small, very numerous, narrow, linear, acute, falcate, rather fleshy, full of pellucid dots; wings lanceolate, narrow, acute, rather glandular, hardly longer than the keel; seeds clavate-cylindrical, villous. ♄. S. Native of Brazil in the province of Minas Geraes in sandy places. Habit of *Erìca*. Flowers white, tinged with red.

Var. β, pygmæ'a (St. Hil. l. c.) stem 2 inches; leaves broader, less fleshy, lower ones rather obovate. Near Barbacena.

Bryum-like Milkwort. Fl. Sep. Dec. Shrub ½ foot.

162 P. pseudoeri'ca (St. Hil. fl. bras. 2. p. 40. t. 87.) stem suffruticose, dichotomous; branchlets pubescent; leaves very numerous, spreading, narrow linear, acute, full of pellucid dots; racemes small, terminal and lateral, spike-formed; wings elliptical, obtuse, glandular in the middle, rather longer than the keel; seeds oblong, a little incurved, villous. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers yellow, tinged with purple.

False-heath Milkwort. Fl. Sept. Shrub ½ foot.

163 P. densifòlia (St. Hil. fl. bras. 2. p. 41.) stem subherbaceous, erect, rather twiggy; branches umbellate, usually di-trichotomous; leaves very numerous, imbricated, linear, acute, full of pellucid dots; racemes spike-formed, rather pyramidal; wings elliptical, obtuse, mucronate, longer than the keel; seeds oblong, villous. ⊙. ♃. S. Native of Brazil on hills in the eastern part of the province of Cis Platine. Flowers yellowish.

Var. β, grandiflòra (St. Hil. l. c.) stems thicker; leaves longer, broader; flowers larger, greenish-white. In Minas Geraes.

Var. γ, mìnor (St. Hil. l. c.) stem much smaller, quadrangular, twiggy; leaves stiffer and broader; spikes much shorter. In Minas Geraes.

Dense-leaved Milkwort. Fl. Nov. Jan. Pl. 1 to 2 feet.

† *Species not sufficiently known, but evidently belonging to section Timoutou.*

164 P. sulca'ta (Willd. spec. 3. p. 878.) flowers crested; racemes terminal on peduncles; stems erect, furrowed, branched at the top; leaves linear, pressed to the stem. ⊙. S. Native of Brazil at Monte Video. Very like *P. paniculàta*. Flowers violaceous.

Furrowed-stemmed Milkwort. Fl. July, Aug. Pl. 1 foot.

165 P. tene'lla (Willd. spec. 3. p. 878.) flowers crested; racemes terminal, on very long peduncles; stem erect, branched at the top; leaves linear-ovate, mucronate. ⊙. S. Native of Panama. Like *P. paniculàta*. Flowers small, flesh-coloured.

Pliant Milkwort. Fl. July, Aug. Pl. 1½ foot.

166 P. Brazilie'nsis (Lin. mant. 99.) flowers crested, somewhat spiked; stems prostrate, very simple; leaves lanceolate. Native in Brazil. Flowers white.

Brazilian Milkwort. Pl. prostrate.

167 P. Guinee'nsis (Willd. spec. 3. p. 882.) flowers crested, nodding; racemes axillary, secund; leaves filiform; stem branched, herbaceous. Native of Guinea.

Guinea Milkwort. Fl. April, June. Pl. ½ foot.

Sect. VI. Se'nega (by mistake supposed to have first come from Senegal.) D. C. prod. 1. p. 330. Keel of flower beardless. Three outer sepals of calyx nearly equal. Leaves alternate. American herbs. The character given by M. Auguste St. Hilaire to this section is as follows. Style simple or 2-lobed; superior lobe longest. Caruncle of seed helmet-formed, usually with one appendage.

168 P. Se'nega (Lin. spec. 990.) stems many, rather erect, simple, terete; leaves ovate-lanceolate, upper ones acuminated; racemes somewhat spike-formed; wings of calyx orbicular; capsules elliptical, emarginate. ♃. F. Native of North America on the sides of hills and in dry woods from Carolina to Georgia. Woodv. med. bot. 3. t. 93. Sims, bot. mag. t. 1051. Flowers small, red. This is the famous *Senega* or *Snake-root*, formerly so celebrated for the bite of rattle-snakes, but other more efficacious remedies have supplanted it, as *Prenánthes* and *Liàtris*.

This plant has a branched woody contorted root, about half an inch thick, and covered with an ash-coloured bark, whence it is supposed to resemble the tail of the rattle-snake. It is inodorous; the taste is at first sweetish and nauseous, but after being chewed for less than a minute, becomes pungent and hot, producing a singular sensation in the fauces. Medically it is considered stimulating, expectorant, and diuretic, and in large doses emetic and cathartic; it increases absorption and the force of circulation, and consequently augments the natural excretions, and frequently occasions a copious ptyalism. It was introduced to the notice of physicians by Dr. Tennant, who having discovered that it was an antidote employed internally as well as applied externally to the wounds by the Senegaro Indians against the bite of the rattle-snake, and reasoning from the effects of the poison, and of the remedy in removing these, was induced to try it in pneumonic affections, and found it to afford very marked relief by promoting expectoration even in far advanced stages of inflammation, but it is apt to disorder the stomach and induce diarrhœa. On account of its stimulating and diaphoritic properties, however, it can be employed in these complaints only after the resolution of the inflammation by bleeding and evacuations. It proves more directly useful in humoral asthma, chronic catarrh, chronic rheumatism, and some kinds of dropsy. (Thoms. lond. dispens. p. 450.) In consequence of its well-ascertained power of exciting salivation, it has been introduced as a remedy in croup by Dr. Archer of Maryland; he gives two tea-spoonsful of a strong decoction of the root twice in an hour, according to the urgency of the symptoms, until it acts as an emetic or cathartic. Dr. Brandreth of Liverpool derived great benefit in some cases of lethargy from an extract of *seneka* combined with carbonate of ammonia.

A peculiar principle has lately been discovered in the root of this plant by Gehlen, to which he has given the name of senegin. It is a brown substance, and excites violent sneezing like tobacco. The powder of the root is given in doses from 20 to 30 grains. The decoction is made from one ounce of the root to two pints of water, boiled down to one pint and strained; this is given in doses of three ounces three or four times a-day.

Senega, Seneka, or Snake-root Milkwort. Fl. July, Aug. Clt. 1739. Pl. ¾ foot.

169 P. poly'gama (Walt. fl. carol. 179.) stems many, simple, erect and procumbent; leaves oblong, acute or linear-lanceo-

late; lower racemes apetalous. ♃. F. Native in the pine-barrens of Carolina. Calyx greenish-white, with pale yellow petals (Pursh.) Flowers red (Nutt.). Racemes axillary and terminal.

Polygamous Milkwort. Fl. July, Aug. Pl. ½ foot.

170 P. monti'cola (H. B. et Kunth, nov. gen. amer. 5. p. 405.) stems almost simple, hairy-pubescent, as well as the lanceolate, acute, remote leaves; racemes terminal, loose; wings of calyx elliptical, unguiculate at the base; capsules emarginate. ♃. G. Native on the arid mountain of Tumiriquiri in New Andalusia. Flowers rose-coloured.

Mountain Milkwort. Pl. 1 foot.

171 P. angustifo'lia (H. B. et Kunth, l. c. p. 405. t. 511.) stem branched, puberulous at the top; leaves remote, linear-lanceolate, acute, with revolute margins, glabrous, but puberulous on the nerve and veins on the under surface; racemes spike-formed, rather lax. ♃. S. Native on the banks of the river Orinoco near Carichana. Upper flowers white, the rest purple.

Narrow-leaved Milkwort. Pl. 1½ foot.

172 P. mo'llis (H. B. et Kunth, l. c.) stems villous, simple or branched; leaves lanceolate-oblong, soft, hoary; racemes spike-formed, rather lax. ♃. S. Native in sandy places near Carichana, on the river Orinoco. Seeds covered with retrograde hairs. Wings of calyx orbicularly-obovate. Flowers rose-coloured.

Soft Milkwort. Pl. ½ foot.

173 P. Nutka'na (Moc. et Sesse, icon. ined. and D. C. prod. 1. p. 330.) stems shrubby at the base, ascending; leaves oval, acuminated at both ends, stalked; racemes lax, 4-5-flowered; wings of calyx orbicular; capsules emarginate. Native on the north-west coast of North America, near Nutka. Flowers red?

Nutka Milkwort. Pl. ½ foot.

174 P. hebeca'rpa (D. C. prod. 1. p. 330.) stems simple; leaves ovate, reticulately veined; racemes 10-12-flowered; wings of calyx oval-oblong; capsule oval, pubescent. ♃. ♄. S. Native of St. Domingo. Perhaps P. ovàta, Poir. dict. 5. p. 498?

Downy-fruited Milkwort. Pl. ½ foot.

175 P. pedicella'ris (St. Hil. fl. bras. 2. p. 47.) stem suffruticose, horizontal; branches pubescent; leaves lanceolate, acuminated, smoothish; racemes capitate, loose; flowers on long pedicels; wings oblong-ovate, obtuse, rather pubescent. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers purplish-violet.

Pedicelled-flowered Milkwort. Fl. Feb. Shrub procumbent.

176 P. violoìdes (St. Hil. fl. bras. 2. p. 48.) stem suffruticose, slender, sparingly branched; leaves ovate or roundish, finely ciliated; racemes few-flowered, loose; wings elliptical, obtuse, finely ciliated; seeds oblong, very villous. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers white, tinged with violet.

Violet-like Milkwort. Fl. April. Shrub ½ foot.

177 V. la'xa (Mart. ex Spreng. syst. 3. p. 170.) branches twiggy; leaves lanceolate, acuminated, pubescent beneath; racemes lateral and terminal, few-flowered; wings obovate, equal in length to the corolla. ♄. S. Native of Brazil. Flowers purple.

Lax Milkwort. Shrub ½ to 1 foot.

178 P. viola'cea (Vahl. symb. 2. p. 79.) stem suffruticose, erect; branches herbaceous, pubescent; leaves ovate or lanceolate, acuminated, pubescent, full of pellucid dots; racemes spike-formed; flowers secund; wings elliptico-orbicular, very obtuse, equalling the oval smooth capsule; seeds cylindrical, silky, villous, unappendiculate. ♃. S. Native of Cayenne and Brazil. Flowers greenish, tinged with violet.

Violaceous-flowered Milkwort. Fl. March, April. Pl. ¼ ft.

179 P. cine'rea (Willd. spec. 3. p. 880.) stem erect, branched, hairy; leaves lanceolate, acuminated, somewhat tomentose; racemes 8-10-flowered; keel and margins of flowers fringed; capsules oblong, glabrous. ⊙. S. Native of Guiana and Cayenne. P. violàcea, Aubl. guian. t. 294. Flowers violaceous.

Cinerous Milkwort. Pl. ½ foot.

180 P. America'na (Mill. dict. no. 7.) stems erect, branched, younger ones pubescent; leaves oblong, mucronate, velvety-pubescent; racemes many-flowered; wings of calyx obovate; capsules orbicular, velvety. ♃. G. Native of South America near Vera Cruz. Flowers bluish-purple.

American Milkwort. Fl. June, July. Clt.? Pl. ½ foot.

181 P. pube'scens (Nutt. gen. amer. 2. p. 87.) stem erect, pubescent, twiggy, branched; leaves ovate-lanceolate, ciliated; keel of flower glandular at the top. ♃. F. Native of Georgia about Savannah. Flowers rose-coloured, cristate. This is one of the largest and finest species indigenous to North America.

Pubescent-branched Milkwort. Pl. 3 feet.

182 P. Torre'yi; stem branched, smooth, angular, erect; leaves linear, crowded, acutish; racemes somewhat spike-formed, slender, loose; keel beardless. ♃.? H. Native of North America on the Rocky Mountains. Polýgala, nov. spec. Torrey in ann. lyc. new york, 2. p. 164.

Torrey's Milkwort. Pl. 1 foot.

183 P. Caracasa'na (H. B. et Kunth, nov. gen. amer. 5. p. 407.) stems procumbent and erect; branches as well as elliptical acute leaves hairy-pubescent; racemes spike-formed, terminal, few-flowered; capsules elliptical, emarginate, pubescent. ♄. S. Native of dry places near Caraccas. Flowers blue.

Caraccas Milkwort. Shrub 1 foot.

184 P. monninoìdes (H. B. et Kunth, l. c. p. 408.) branches villously-pubescent; leaves ovate-oblong, somewhat acuminated, hairy-pubescent; racemes somewhat terminal. ♄. S. Native in the mountains of New Granada. Flowers white, tinged with purple.

Monnina-like Milkwort. Shrub 1 to 2 feet.

185 P. ligustroìdes (St. Hil. fl. bras. 2. p. 49.) stem shrubby; branches hardly puberulous; leaves lanceolate, acuminate, smooth; racemes short; wings obovate, obtuse; seeds ovate, furrowed both on the back and front, very villous. ♄. S. Native of Brazil in woods in the province of Minas Geraes. Flowers yellow, tinged with red and orange.

Privet-like Milkwort. Fl. Jan. March. Shrub 1 to 5 feet.

186 P. oleæfòlia (St. Hil. fl. bras. 2. p. 49.) stem shrubby; branches striated, tomentose; leaves coriaceous, oblong-lanceolate, acuminated, very acute, puberulous above, pubescent beneath; racemes short; wings ovate, very obtuse. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers crowded, yellow.

Olive-leaved Milkwort. Fl. Sept. Shrub 2 feet.

187 P. laure'ola (St. Hil. fl. bras. 2. p. 50. t. 89.) stem suffruticose, sparingly branched, pubescent; leaves lanceolate, oblong, acuminated; racemes few-flowered; wings oblong-triangular, obtuse; seeds oblong, 4-angled, hairy. ♄. S. Native of Brazil in woods near Rio Janeiro. Flowers greenish-yellow.

Laurel-like Milkwort. Shrub 1 to 3 feet.

188 P. cestrifòlia (St. Hil. fl. bras. 2. p. 51.) stem shrubby; branches erect, puberulous; leaves large, obovate-oblong, acuminated, soft; racemes extra-axillary, short, broadish; wings irregularly ovate, obtuse, shorter than the keel. ♄. S. Native of Brazil near Rio Janeiro. Flowers yellowish?

Cestrum-leaved Milkwort. Shrub 2 to 4 feet.

189 P. grandifòlia (St. Hil. fl. bras. 2. p. 52.) stem suffruticose, simple, scarcely puberulous at the apex; leaves large, lanceolate, with a short acumen, smooth; racemes supra-axillary, incurved, few-flowered; wings oblong, elliptical, acuminated,

longer than the keel. ♄. S. Native of Brazil near the town of Benevente. Flowers white, tinged with purple.

Great-leaved Milkwort. Fl. Oct. Shrub 2 to 3 feet.

190 P. rivinæfòlia (H. B. et Kunth, l. c. p. 409. t. 512.) stems herbaceous, rather simple, pubescent; leaves ovate, much acuminated, puberulous on both surfaces, ciliated; racemes spike-formed, terminal, many-flowered. 4. S. Native of Mexico near Ario. Flowers violet. Capsules elliptically-orbicular, emarginated, glabrous, ciliated.

Rivina-leaved Milkwort. Pl. ½ to 2 feet.

191 P. ovalifòlia (D. C. prod. 1. p. 331.) stems round, somewhat velvety; leaves oval, on short footstalks; racemes 7-8-flowered; wings of calyx obovate; capsules oval, pubescent. ♄. S. Native of New Spain. Flowers white, tinged with purple?

Oval-leaved Milkwort. Pl. 1 foot.

192 P. hebe'clada (D. C. prod. 1. p. 331.) stems shrubby, a little branched, erect, rather villous; leaves linear, obtuse or acute, pubescent; racemes elongated, loose; wings of flower obovate, very obtuse; capsules oblong, glabrous. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers pale-violet. Perhaps the same as the following.

Hairy-branched Milkwort. Shrub 1 to 2 feet.

193 P. brizoìdes (St. Hil. fl. bras. 2. p. 44. t. 88.) stem herbaceous, erect, simple, pubescent, rather naked below; leaves linear, acute, upper ones longest, approximate; racemes extra-axillary, rather narrow, few-flowered; flowers pendulous; wings wedge-shaped, obliquely truncate, equal in length with the keel; seeds oblong, very villous. ⊙. S. Native of Brazil in the province of Rio Janeiro. Flowers greenish, tinged with purple.

Briza-like Milkwort. Fl. Sept. Pl. ¾ foot.

194 P. Pohlia'na (St. Hil. fl. bras. 2. p. 45.) stem suffruticose, hairy; leaves oblong-ovate, rather acute, pilose, ciliated; racemes loose, few-flowered; wings cuneated, obliquely truncate, longer than the keel; seeds oblong, very villous. ♄. S. Native of Brazil in mountain pastures in the province of Minas Geraes. Flowers purple.

Pohl's Milkwort. Fl. March. Shrub ½ foot.

195 P. hirsu'ta (St. Hil. fl. bras. 2. p. 45.) stem suffruticose, hairy; leaves lanceolate-ovate, acuminated, ciliated; racemes loose, few-flowered; flowers pendulous; wings orbicularly-wedge-shaped, very obtuse, longer than the keel; seeds oblong, very villous. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers pale-purple.

Hairy Milkwort. Fl. Sept. Shrub ½ foot.

196 P. buxifòlia (H. B. et Kunth, l. c. p. 407.) stems branched, diffuse; branches hairy-pubescent; leaves oblong-elliptical, rounded at the top and somewhat emarginated, with revolute margins; racemes few-flowered, terminal as well as lateral. ♄. S. Native of Mexico near Santa Rosa. Flowers white.

Box-leaved Milkwort. Fl. Sept. Shrub 1 foot.

197 P. glandulòsa (H. B. et Kunth, l. c. p. 404. t. 510.) stems much branched, procumbent, covered with glandular dots; leaves obovately-wedge-shaped, mucronated, without nerves, somewhat puberulous, covered with pellucid dots; flowers on pedicels, generally solitary, extra-axillary or opposite the leaves. ♄. S. Native of New Spain. Seeds covered with retrograde pubescence. Viola punctàta, Willd. ex Schlecht. in Rœm. et Schult. syst. 5. p. 391. Flowers white.

Glandular-dotted-stemmed Milkwort. Shrub procumbent.

198 P. triphy'lla (Hamilt. mss. in D. Don, prod. fl. nep. p. 200.) wings of calyx obovate; lateral lobes of petal falcate, truncate and bidentate at the top; leaves ovate, acute, glabrous, finely serrulated, stalked; stem trichotomous at the apex; branches 3-leaved. ⊙. H. Native of Nipaul at Narainhetty. Flowers small, yellow, not crested.

Three-leaved Milkwort. Fl. July. Pl. ¼ foot.

Sect. VII. Chamæbu'xus (from χαμαι, *chamai*, on the ground, and βυζω, *buxo*, the box-tree, that is to say dwarf box-tree; resemblance in *P. chamæbúxus*.) Dill. nov. gen. t. 9. D. C. prod. 1. p. 331. Lower sepal of calyx concave-hollow, embracing a gland on the inside at the base. Keel slightly crested or callous at the tip. Flowers few, large. Herbs or subshrubs.

199 P. paucifòlia (Willd. spec. 3. p. 880.) stems very simple, erect, naked below; leaves ovate; flowers in threes, terminal; keel of flower crested. 4. H. Native in sphagnous bogs and swamps; principally on the mountains from Pennsylvania to Virginia. P. purpùrea, Ait. hort. kew. ed. 2. vol. 4. p. 244. but not of Nutt. Triclispérma grandiflòra, Raf. specch. 1. p. 117. Flowers larger than in any other American species, of a fine purplish colour.

Few-leaved Milkwort. Fl. May, Aug. Clt. 1812. Pl. ¼ ft.

200 P. uniflòra (Michx. fl. bor. amer. 2. p. 58.) stem ascending, almost simple; leaves oval, acute; flowers solitary, pedicelled, scattered; keel of flower beardless. 4. H. Native on the banks of Lake Ontario on the confines of Canada. Flowers nodding, perhaps pale purple.

One-flowered Milkwort. Pl. ¼ foot.

201 P. chamæbu'xus (Lin. spec. 989.) stems suffruticose, branched, procumbent; leaves oblong-lanceolate, mucronated; racemes 1-2-flowered; keel of flower crested. ♄. H. Native of mountain woods in many parts of Europe, particularly Germany, Austria, and Switzerland. Jacq. fl. aust. t. 233. Sims, bot. mag. t. 316. Flowers yellowish, tipped with purple.

Dwarf-box or Box-leaved Milkwort. Fl. May, July. Clt. 1658. Procumbent shrub ¼ to ½ foot.

202 P. venulòsa (Juss. in Poir. dict. 5. p. 493.) stem shrubby; leaves stalked, obovate, acuminated, large; flowers racemose; keel of flower crested. ♄. S. Native of Java.

Veiny-flowered Milkwort. Shrub.

203 P. oxyphy'lla (D. C. prod. 1. p. 331.) stem shrubby; leaves oblong, very much pointed; flowers in short racemes; keel of flower beardless; wings orbicular. ♄. S. Native of Brazil.

Sharp-leaved Milkwort. Shrub 1 foot.

204 P. specta'bilis (D. C. prod. 1. p. 331.) stem shrubby; leaves oval-oblong, acuminated, tapering to the base, upper ones generally opposite; flowers disposed in long racemes; keel of flower beardless; wings orbicular. ♄. S. Native of Para in South America.

Remarkable Milkwort. Shrub 1 foot.

205 P. Chine'nsis (Lin. spec. 989.) stem suffruticose, prostrate; leaves oval, obtuse; flowers in short racemes; keel of flower beardless; wings obovate. ♄. G. Native of China. Flowers probably purple.

China Milkwort. Shrub decumbent.

Sect. VIII. Brachy'tropis (from βραχις, *brachys*, short, τροπις, *tropis*, a keel; in allusion to the keel being much shorter than the wings). D. C. prod. 1. p. 332. Keel of corolla beardless, much shorter than the wings of the calyx. Perhaps a proper genus allied to *Comespérma*.

206 P. microphy'lla (Lin. spec. 989.) stems shrubby, twiggy; leaves very minute, elliptical; racemes axillary, sessile, 8-10-flowered. ♄. F. Native of Portugal in bushy places. Flowers blue? P. juniperìna, Cav. annal. cienc. nat. 1801. 4. p. 53.?

Small-leaved Milkwort. Fl. June, July. Shrub 1½ foot.

† *Doubtful species. The most of them will probably belong to Section* VI. Se'nega. *Keel of flower beardless.*

207 P. triflòra (Lin. fl. zeyl. 269.) flowers beardless;

peduncles generally 3-flowered, shorter than the leaves; stem herbaceous, erect; leaves linear, alternate. ⊙. S. Native of Ceylon. Flowers white.

Three-flowered Milkwort. Pl. ½ foot.

208 P. prostra'ta (Willd. spec. 3. p. 896.) flowers beardless; peduncles many-flowered; stems diffuse, herbaceous; leaves lanceolate, obtuse. ⊙. S. Native of the East Indies. Like *P. glaucoìdes*. Flowers white.

Prostrate Milkwort. Pl. prostrate.

209 P. multiflòra (Poir. dict. 5. p. 497.) flowers beardless; racemes long, terminal? stems herbaceous, branched, twiggy; leaves linear, few. ♄.? S. Native of Sierra Leone. Flowers blue?

Many-flowered Milkwort. Pl. ½ foot.

210 P. thunbe'rgii (D. C. prod. 1. p. 333.) flowers beardless, racemose; leaves ovate, unarmed. ♄. G. Native of the Cape of Good Hope. P. microphýlla, Thunb. prod. 121. but not of Lin. Flowers purple.

Thunberg's Milkwort. Shrub 1 foot.

211 P. mucrona'ta (Willd. spec. 3. p. 888.) flowers beardless; racemes terminal? stem shrubby with hairy branches; leaves lanceolate, mucronated, downy on the under surface. ♄. S. Native of South America. Flowers purple.

Mucronate-leaved Milkwort. Shrub ½ foot.

212 P. myrtilloìdes (Willd. spec. 3. p. 889.) flowers beardless; racemes opposite the leaves; stem shrubby with procumbent branches; leaves roundish-ovate, reticulately veined. ♄. S. Native of South America. Flowers white.

Myrtle-like Milkwort. Shrub 1 foot.

213 P. Mexica'na (Moc. et Sesse. fl. mex. icon. ined. and D. C. prod. 1. p. 333.) flowers beardless, at length drooping; racemes terminal? somewhat spiked; stems simple, erectish; leaves linear, acute. ♄. G. Native in Mexico. Flowers purple?

Mexican Milkwort. Shrub 1 foot.

214 P. linariæfòlia (Poir. dict. 5. p. 495.) flowers almost beardless? racemes terminal? dense, ovate; stem herbaceous, round; leaves linear, upper ones disposed in whorls.

Flax-weed-leaved Milkwort.

215 P. unguicula'ta (Poir. dict. 5. p. 494.) flowers beardless, crowded, axillary; petals 2, unguiculate; calyx 4-sepalled; stem shrubby; leaves ovate, mucronate. ♄. S. Native of? Perhaps a proper genus.

Unguiculate-petalled Milkwort. Shrub.

216 P. ramosi'ssima (Cav. annal. cienc. nat. 1801. 4. p. 53.) stem herbaceous, much branched; leaves linear; spikes terminal; flowers minute. ♄.? G. Native in the island of Teneriffe.

Much-branched Milkwort. Pl. ½ foot.

217 P.? the'zans (Lin. mant. 260. exclusive Burm. syn. 2.) flowers beardless, solitary; peduncles 1-flowered, axillary; leaves alternate, linear-lanceolate. ♄. S. Native of Java and Japan. Icon. Burm. fl. zeyl. p. 195. t. 85. is truly a species of *Ionídium*. P. thèa, Burm. fl. ind. p. 154. is a species of *Leptospérmum*, as is seen by the specimens collected by Burman, now in the herbarium of M. Benj. Delessert. P. triphýlla and P. pinnàta of Burm. prod. f. cap. p. 20. are leguminous plants.

Tea-like Milkwort. Shrub.

Cult. All the species of *Polýgala* are very shewy, therefore they deserve to be cultivated in every garden. Those belonging to the section *Psychánthus* are all natives of the Cape of Good Hope, these will thrive well in two thirds peat and one-third turfy loam, with a good quantity of sand mixed with it; and to have the cuttings proper for putting in, the shoots should be topped, they will then push out numerous young ones, which should be taken off close to the old branch, when about three inches long, and in a growing state, these plant in pots of sand, and place bell-glasses over them; the pots must then be put into a close frame or the propagation-house, and the glasses must be taken off and wiped occasionally. The perennial species belonging to other sections thrive best in a sandy peat soil; they should be always kept in small pots, and may be either increased by seed or dividing the plants. The shrubby kinds in the same way as recommended for those belonging to *Psychánthus*. The annual species should be sown about the end of March in pots; they also prefer a sandy peat soil and heat. Most of them would grow in the open border in warm situations. *P. chamæbúxus* will grow in the open border.

II. SALOMO'NIA (in honour of Solomon, King of the Hebrews, son of David, one of the first botanists, died 975). Lour. coch. ed. Willd. p. 18. D. C. prod. 1. p. 333.

Lin. syst. *Monadélphia, Tetrándria.* Calyx quinquefid; segments equal. Keel cucullate. Petal 3-lobed, with the lateral lobes falcate, intermediate one cucullately saccate, inclosing the genitals, not crested. Filaments connate into a membranous sheath including the style. Anthers 4, 1-celled, conglutinate around the stigma. Style tapering to the base, dilated and compressed at the apex; stigma small, obtuse, pruinose. Capsules 2-lobed, 2-celled, compressed, usually ciliary-serrated; cells 1-seeded. Small Asiatic herbs with alternate broadish leaves and slender spike of minute rose-coloured flowers, each flower furnished with a cuspidate bractea.

1 S. Cantone'nsis (Lour. l. c.) herb glabrous, erect, branched; leaves cordate, acute, on very short footstalks; wings equal in length to the keel; capsules truncate, with crestedly-toothed margins. ⊙. H. Native of China about Canton. S. petiolàta, D. Don. fl. nep. p. 200. Salmònea Cantonénsis, Vahl. enum. 1. p. 8.

Canton Salomonia. Fl. July. Pl. ¼ foot.

2 S. ede'ntula (D. C. prod. 1. p. 334.) herb glabrous, erect, branched; leaves broad-ovate, mucronate, on very short footstalks; capsules with toothless margins. ⊙. H. Native of Nipaul. Perhaps the same as the last.

Toothless-capsuled Salomonia. Fl. June, July. Pl. ¼ foot.

3 S. oblongifòlia (D. C. prod. 1. p. 334.) herb glabrous, erect, very simple; leaves oval or elliptical, mucronulate, sessile; wings shorter than the keel; capsules truncate, with crestedly-toothed margins, in a double series. ⊙. H. Native of Nipaul. S. sessilifòlia, D. Don, fl. nep. p. 201. Flowers purple.

Oblong-leaved Salomonia. Fl. June, July. Pl. ¼ foot.

4 S.? cilia'ta (D. C. prod. 1. p. 334.) stem erect, branched, hairy, as well as the peduncles; leaves lanceolate, obtuse; capsules ciliary-toothed. ⊙. H. Native of the East Indies. Polýgala ciliàta, Lin. spec. 991.

Ciliated-capsuled Salomonia. Pl. ½ foot.

Cult. These plants will require to be sown in pots in the month of March, in a mixture of sand, loam and peat, then placed in a moderate hot-bed, and in the month of May they may be planted out in the borders in a sheltered situation.

III. COMESPE'RMA (from κομε, *kome*, the hair of the head, and σπερμα, *sperma*, a seed; in allusion to the tuft of hairs at the end of the seeds, f. 69. *c.*). Labill. spec. nov. holl. 2. p. 21. D. C. prod. 1. p. 334.

Lin. syst. *Monadélphia, Octándria.* Calyx 5-sepalled, deciduous; two inner sepals of the form of wings, three outer ones small. Petals 3-5, united with the tube of the stamens, the lower one keel-formed, 3-lobed (f. 69. *a.*), middle lobe beardless, entire, or emarginate, 2 lateral petals scale-formed (f. 69. *a.*) 2 superior ones alternating with the superior sepals of the calyx. Stamens 8, united into a tube, which is cleft in front, free at the apex. Anthers bursting by a terminal pore. Fruit baccate or capsular, 2-celled, spatulate (f. 69. *b.*), tapering towards the base. Seeds with a long tuft of hair at their base (f. 69. *c.*). Erect

or scandent shrubs, rarely herbs. Bracteas 2 or 3 at the base of the flowers. Flowers small, disposed in compound panicles or simple racemes.

1 C. RETU'SA (Labill. l. c. t. 160.) shrub glabrous, erect; leaves oblong, obtuse; racemes contracted; middle lobe of corolla entire. ♄. G. Native of Van Diemen's Land. Flowers purple.

Retuse-leaved Comesperma. Fl. May, Aug. Sh. 1 to 2 ft.

2 C. SECU'NDA (Banks' herb. and D. C. prod. 1. p. 334.) shrub pubescent, erect; leaves ovate, mucronate; racemes secund. ♄. G. Native of New Holland near Endeavour river. Flowers purple.

Side-flowering Comesperma. Shrub 1 to 2 feet.

3 C. CORIDIFÒLIA (Cuning. in Fields' trav. p. 337.) this species is nearly allied to *C. conférta* of Lab. but it is not described in the above work. ♄. G. Native of New Holland on the Blue Mountains. Flowers purple.

Coris-leaved Comesperma. Shrub 1 to 2 feet.

4 C. CONFE'RTA (Labill. specim. nov. holl. 2. t. 161.) shrub erect, glabrous; leaves linear, crowded, erect, with revolute margins; racemes contracted; middle lobe of corolla emarginated. ♄. G. Native of Van Diemen's Land. Leaves 7-8 lines long. Flowers purple. (f. 69.)

FIG. 69.

Crowded-leaved Comesperma. Sh. 1 foot.

5 C. ERICÌNA (D. C. prod. 1. p. 334.) shrub glabrous, erect; leaves linear, with somewhat revolute margins, obliquely erect; racemes rather lax; middle lobe of corolla entire. ♄. G. Native on the eastern coast of New Holland. Leaves 3 or 4 lines long. Flowers purple.

Heath-like Comesperma. Fl. May, Aug. Clt. 1822. Shrub 2 feet.

6 C. FLA'VA (D. C. prod. 1. p. 334.) shrub glabrous, erect; leaves linear, flat, erect; racemes contracted; middle lobe of corolla entire. ♄. G. Native on the eastern coast of New Holland. Flowers yellow.

Yellow-flowered Comesperma. Shrub 1 to 2 feet.

7 C. CALYME'GA (Labill. specim. nov. holl. 2. t. 162.) herb glabrous, erect; leaves lanceolate; wings or two inner sepals scarcely exceeding in length the rest of the sepals; middle lobe of lower petal entire. ♃. G. Native of Van Diemen's Land. C. isocàlyx, Spreng. syst. 3. p. 172. Flowers purple.

Large-calyxed Comesperma. Pl. 1 foot.

8 C. NUDIU'SCULA (D. C. prod. 1. p. 334.) shrub glabrous, erect, twiggy; leaves linear, rather setaceous, acute, upper ones very small; racemes rather lax; wings hardly exceeding in length the rest of the sepals. ♄. G. Native of New Holland at King George's Sound. Flowers purple.

Nakedish Comesperma. Shrub 1½ foot.

9 C. VIRGA'TA (Labill. specim. nov. holl. 2. t. 159.) shrub glabrous, erect, twiggy; leaves lanceolate-linear, bluntly acuminated; racemes elongated; middle lobe of corolla emarginate. ♄. G. Native of New Holland. Flowers purple.

Twiggy Comesperma. Shrub 3 feet.

10 C. VOLU'BILIS (Labill. l. c. t. 163.) herb glabrous, twining; leaves very few, lanceolate; racemes contracted; middle lobe of corolla toothed. ♃. ◡. G. Native of Van Diemen's Land. Flowers purple.

Twining-stemmed Comesperma. Pl. twining.

11 C. KUNTHIA'NA (St. Hil. fl. bras. 2. p. 54. t. 90.) stem shrubby; branches spreading, tomentose; leaves lanceolate or roundish, acute or very obtuse, and as if they were emarginate, sometimes mucronulated, pubescent on both surfaces; panicle somewhat pyramidal, dense, leafy at the base; wings orbicular, ciliated. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers whitish.

Kunth's Comesperma. Fl. April. Shrub 3 to 4 feet.

12 C. FLORIBU'NDA (St. Hil. fl. bras. 2. p. 55. t. 91.) stem shrubby, scandent; branches thick, angular at the top; leaves oblong, obtuse at the base, acuminate at the apex, smooth above and puberulous below; panicle composed of bundles of flowers, rather leafy; wings obovate, hardly emarginate, puberulous in the middle. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers whitish or yellowish.

Bundle-flowered Comesperma. Fl. March. Shrub 3 to 7 ft.

13 C. LAURIFÒLIA (St. Hil. fl. bras. 2. p. 56.) stem shrubby, erect; branches angular at the apex, tomentose; leaves elliptical, lanceolate, with a short acumen, smooth above, and tomentosely-pubescent below; panicle very loose; wings ovate-orbicular, ciliated at the base. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers greenish-white.

Laurel-leaved Comesperma. Fl. Feb. Shrub 5 feet.

Cult. The species of the genus *Comespérma* thrive best in a mixture of sandy-loam and peat; and young cuttings will root freely if planted in sand under a bell-glass, those of the stove species in heat. They are all worthy of cultivation.

IV. BADIE'RA (M. Badier, a French botanist, and friend of De Candolle's.) D. C. prod. 1. p. 334.—Penæ'a, Plum. gen. p. 22. t. 25. but not of Lin.

Lin. syst. *Monadélphia, Octándria.* Calyx 5-sepalled, deciduous; sepals almost equal in size and length. Three lower petals somewhat joined at the base; middle one of these concave, beardless. Stamens 8, monadelphous. Capsules compressed, obcordate, 2-celled, with furrowed margins. Seeds glabrous, with a large oily arillus, filling the cell from above. American shrubs.

1 B. DIVERSIFÒLIA (D. C. prod. 1. p. 334.) racemes short, axillary; leaves oval, oblong, acuminated at both ends. ♄. S. Native of Jamaica in woods. Polýgala diversifòlia, Lin. amœn. 2. p. 140.—Browne, jam. t. 5. f. 3 and 4.—Sloan. jam. 141. hist. 2. p. 32. t. 170. f. 2. Flowers greenish-white.

This shrub is called in Jamaica *Bastard Lignum-Vitæ*, because it tastes not unlike the gum of that wood, and is sometimes used for the same purposes.

Variable-leaved Badiera. Shrub 8 feet.

2 B. DOMINGE'NSIS (D. C. prod. 1. p. 335.) racemes axillary, very long, pubescent; leaves oblong-lanceolate, obtuse. ♄. S. Native of the mountains in St. Domingo. Polýgala Domingénsis, Jacq. amer. ed. min. 252. B. Berteriàna, Spreng. syst. 3. p. 172. Flowers greenish-yellow.

St. Domingo Badiera. Shrub 3 to 6 feet.

3 B. PENÆ'A (D. C. prod. 1. p. 135.) flowers solitary, axillary, on peduncles; leaves obovate, obtuse. ♄. S. Native of South America. Polýgala Penæ'a, Lin. amœn. 2. p. 140. Plum. ed. Burm. t. 214. f. 1. Flowers probably yellowish.

Pena's Badiera. Shrub 3 to 8 feet.

4 B. ACUMINA'TA (D. C. prod. 1. p. 335.) racemes lateral, opposite the leaves; leaves oblong, acuminated, shorter than the racemes. ♄. S. Native of New Spain. Polýgala acuminàta, Willd. spec. 2. p. 887. Very like *B. diversifòlia*, according to Willdenow. Flowers greenish-yellow.

Acuminated-leaved Badiera. Shrub 3 to 6 feet.

5 B. DIVARICA'TA (D. C. prod. 1. p. 335.) racemes axillary, panicled, velvety; leaves oval-oblong, glabrous; wings obovate. ♄. S. Native of Para in Brazil. Perhaps belonging to this genus.

Divaricated-branched Badiera. Shrub 3 to 8 feet.

Cult. The species of *Badièra* will do well in a mixture of loam, peat, and sand; and young cuttings will root if planted in a pot of sand, with a bell-glass placed over them, in heat.

V. SOULA'MIA (*Soulamou* is the name of the tree in the Moluccas.) Lam. dict. 1. p. 449. D. C. prod. 1. p. 335.

Lin. syst. *Monadélphia, Hexándria.* Calyx of 5 sepals, 3 outer ones very small, 2 inner ones larger, concave. Petal 1, concave. Stamens 6? Capsules (samara) not opening, compressed, suberose, orbicular, emarginate, 2-celled. Seeds without albumen. According to Lam. the character is as follows: Calyx small, trifid. Petals 3. Stigma sessile. Samara 2-celled, obcordate; cells 1-seeded. A shrub with crowded ovate leaves, tapering to the base, quite entire, and veiny. Racemes short, axillary.

1 S. ama'ra (Lam. l. c.) ♄. S. Native of the Moluccas and Java on rocky places by the sea-side. Rex amaròris, Rumph. amb. 2. p. 129. t. 40. Leaves large, oval-oblong, entire. Flowers white, racemose. The whole plant is very bitter, and is used as a strengthening medicine in its native country, and as a counterpoison. It is called *Caju Soulamou* in the island of Ternatea.

Bitter Soulamia. Fl. Dec. Shrub 10 feet.

Cult. As this shrub has not yet been introduced to the gardens the mode of cultivating it is unknown, but we would recommend its being grown in a mixture of loam and sand, and young cuttings will no doubt root if planted in a pot of sand, placed under a hand-glass, in heat.

VI. MURA'LTIA (in honour of John Von Muralt, a Swiss botanist.) Neck. elem. no. 1382. D. C. prod. 1. p. 335. Heistèria, Berg. cap. 185. but not of Lin.

Lin. syst. *Monadélphia, Hexándria.* Calyx glumaceous, of 5 sepals. Sepals almost equal. Petals 3, connected, middle one bifid, with obtuse lobes. Ovary crowned with 4 horns or tubercles. Capsules 2-valved, 2-celled, crowned with 4 horns or 4 tubercles. Shrubs, natives of the Cape of Good Hope, with a rigid spiny habit. Flowers small, axillary, sessile, usually purple or red.

* *Leaves mucronately-pungent at their apex.*

1 P. Heiste'ria (D. C. prod. 1. p. 335.) leaves triquetrous, stiff, spiny at the apex, in bundles; branchlets puberulous; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Heistèria púngens, Berg. cap. 185. Polýgala, Heistèria, Lin. spec. 989. Curt. bot. mag. t. 340. Horns longer than the capsule. Flowers small, purple.

Var. β. pilòsa, (D. C. l. c.) leaves flattish, hairy, and ciliated.

Heister's Muraltia. Fl. Jan. Clt. 1787. Shrub 2 to 3 feet.

2 M. confe'rta (D. C. prod. 1. p. 335.) leaves oblong-lanceolate, in crowded bundles, rather spiny at the top, with scabrous margins; branchlets hairy; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Perhaps Polýgala thymifòlia, Thunb. prod. 121. Flowers purple. Horns longer than the capsule.

Crowded-leaved Muraltia. Fl. April, Sept. Sh. 2 to 3 feet.

3 M. brevifòlia (D. C. prod. 1. p. 335.) leaves elliptical-oblong, scattered, with a recurved spiny point at the apex, younger ones and branchlets pubescent; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Capsules pubescent. Flowers purple.

Short-leaved Muraltia. Shrub 2 feet.

4 M. serpyllifòlia (D. C. prod. 1. p. 335.) leaves ovate, spiny at the top, with somewhat revolute margins; nerve on the under surface hairy; branches hairy; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Flowers purple. Horns shorter than the capsule.

Wild-Thyme-leaved Muraltia. Shrub 2 feet.

5 M. alopecuroìdes (D. C. prod. 1. p. 335.) floral leaves ovate, with a spiny point at the apex, crowded, glabrous, ciliated, lower leaves almost linear; branches rather hairy; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Polýgala alopecuroìdes, Lin. mant. 260. Sims, bot. mag. t. 1006. Flowers purple. Horns length of capsule.

Fox-tail-like Muraltia. Fl. May, Aug. Clt. 1800. Pl. 2 to 4 feet.

6 M. trine'rvia (D. C. prod. 1. p. 335.) leaves ovate, cordate, 3-nerved, glabrous, with a pungent point; branches angular, glabrous; flowers axillary on pedicels. ♄. G. Native of the Cape of Good Hope. Flowers purple. Capsule 2-horned.

Three-nerved-leaved Muraltia. Shrub 2 to 3 feet.

7 M. squarròsa (D. C. prod. 1. p. 335.) leaves lanceolate, spiny at the top, stiff, in bundles, upper ones spreading, lower ones reflexed; branchlets villous; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Polýgala squarròsa, Thunb. prod. 121. Muráltia, no. 3493, Burch. cat. is only a variety of this plant. Flowers purplish.

Squarrose Muraltia. Fl. May, Aug. Clt. 1820. Shrub 3 ft.

8 M. stipula'cea (Burch. trav. 1. p. 19 and 29.) leaves linear, convex on the under surface, mucronate, glabrous, in bundles, distant; branchlets somewhat pubescent; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Polýgala stipulàcea, Lin. mant. 260. exclusive of the synonyme of Sieb. Andr. bot. rep. t. 263. Sims, bot. mag. 1715. Flowers red mixed with white.

Stipular Muraltia. Fl. Ap. Sept. Clt. 1801. Shrub 2 to 3 ft.

9 M. juniperifòlia (D. C. prod. 1. p. 336.) leaves triquetrous, awl-shaped, mucronate, straight, and are as well as branches glabrous; flowers axillary, on very short pedicels; capsules crowned by 4 tubercles. ♄. G. Native of the Cape of Good Hope. Polýgala juniperifòlia, Poir. 5. p. 496. Flowers purplish.

Juniper-leaved Muraltia. Fl. April, Sept. Clt. 1810. Sh. 2 ft.

10 M. ericæfòlia (D. C. prod. 1. p. 336.) leaves trigonal, awl-shaped, mucronate, straight, in bundles, glabrous; branchlets somewhat pubescent; flowers axillary, sessile; capsules crowned by 4 horns. ♄. G. Native of the Cape of Good Hope. Perhaps Polýgala míxta, Thunb. prod. 121? but not of Lin. Flowers red mixed with white.

Heath-leaved Muraltia. Fl. May, Sept. Shrub 2 to 3 feet.

11 M. sprengelioìdes (Burch. cat. no. 4957.) leaves somewhat trigonal, mucronate, pungent, scattered, at length spreading, and are as well as branches glabrous; flowers axillary, on very short pedicels. ♄. G. Native of the Cape of Good Hope. Flowers purple.

Sprengelia-like Muraltia. Shrub 2 to 3 feet.

12 M. satureioìdes (Burch. cat. no. 5617.) leaves somewhat trigonal, mucronate, pungent, in bundles, with somewhat puberulous margins; branches pubescent; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Leaves hardly 2 lines in length. Flowers purple. Capsules 4, rarely 3-horned.

Savory-like Muraltia. Shrub 1½ foot.

13 M. tenuifòlia (D. C. prod. 1. p. 336.) leaves awl-shaped, recurved at the apex, mucronate, spreading, in bundles, very fine; branches pubescent; flowers axillary, almost sessile. ♄. G. Native of the Cape of Good Hope. Polýgala tenuifòlia, Poir. dict. 5. p. 497. but not of Willd. Flowers purple. Capsules crowned by 4 diverging horns.

Fine-leaved Muraltia. Shrub 2 feet.

14 M. aspa'latha (D. C. prod. 1. p. 336.) upper leaves

linear, somewhat trigonal, acuminated, pungent, hairy; lower leaves awl-shaped, glabrous; branches hairy; flowers axillary, sessile; capsules pubescent, 4-horned. ♄. G. Native of the Cape of Good Hope. Flowers purple?

Aspalathus-like Muraltia. Shrub 2 feet.

15 M. DIFFU'SA (Burch. cat. no. 916 and 354.) leaves linear, acuminated, pungent, scattered, distant; branches very slender, diffuse; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Polýgala micrántha, Willd. spec. 2. p. 892. Andr. bot. rep. 324. Flowers purple.

Diffuse-branched Muraltia. Fl. year. Clt. 1800. Sh. 2 ft.

16 M. VIRGA'TA (Burch. cat. no. 7074. and 7104.) leaves linear-awl-shaped, pungent, scattered, straight, and are as well as very slender branches glabrous; flowers axillary, sessile; sepals oblong, very much pointed. ♄. G. Native of the Cape of Good Hope. Polýgala micrántha, Thunb. prod. cap. 121.? Flowers small, purple. Stems many, rising from the root.

Twiggy-branched Muraltia. Fl. year. Clt. 1812. Sh. 2 ft.

17 M. LINOPHY'LLA (Burch. cat. no. 510.) leaves linear, almost awl-shaped, somewhat pungent, scattered, and are as well as branches finely puberulous or smooth; flowers axillary, sessile; sepals ovate-oblong, mucronate. ♄. G. Flowers purple. Very like the preceding plant, but differing in the shape of the sepals. Perhaps Polýgala filifórmis, Thunb. prod. 121.

Flax-leaved Muraltia. Fl. May, July. Clt. 1819. Shrub 2 ft.

18 M. MACRO'CERAS (D. C. prod. 1. p. 336.) leaves linear, awl-shaped, mucronate, straight, in crowded bundles, and are as well as the very slender branches glabrous; flowers axillary, sessile; horns longer than the capsule. ♄. G. Native of the Cape of Good Hope. Burch. cat. no. 3984. Flowers purple.

Long-horned-capsuled Muraltia. Fl. May, Aug. Clt. 1812. Shrub 2 feet.

19 M. MI'XTA (Lin. fil. suppl. 316.) leaves linear-awl-shaped, mucronulate, straight, in crowded bundles, and are as well as very slender branches glabrous; flowers axillary, sessile; horns shorter than the capsule. ♄. G. Native of the Cape of Good Hope. Polýgala míxta, Andr. bot. rep. t. 455. Sims, bot. mag. 1714. Flowers purple, mixed with white.

Mixed-flowered Muraltia. Fl. year. Clt. 1791. Shrub 2 ft.

20 M. CILIA'RIS (D. C. prod. 1. p. 336.) leaves linear, awl-shaped, mucronate, spreading, in bundles, and are as well as branches hispidly-ciliated; flowers axillary, sessile; capsules almost unarmed. ♄. G. Native of the Cape of Good Hope. Burch. cat. no. 5566. Flowers purplish?

Var. β, laxiúscula (D. C. l. c.) leaves shorter and more distant. ♄. G. Perhaps a proper species.

Ciliated-leaved Muraltia. Fl. May, July. Clt. 1824. Shrub 2 feet.

§ 2. *Leaves bluntish at the apex.*

21 M. PUBE'SCENS (D. C. prod. 1. p. 336.) leaves linear, spreading, in bundles, and are as well as branchlets velvety-pubescent; flowers axillary, solitary. ♄. G. Native of the Cape of Good Hope. A very distinct species. Flowers purple.

Pubescent Muraltia. Shrub 2 feet.

22 M. HU'MILIS (D. C. prod. 1. p. 337.) leaves lanceolate-linear, erect, scattered; stem dwarf, much branched; flowers axillary, sessile, solitary. ♄. G. Native of the Cape of Good Hope. Polýgala hùmilis, Lodd. bot. cab. 420. Flowers purple.

Dwarf Muraltia. Fl. May, July. Clt. 1818. Shrub 1 foot.

23 M. DEPRE'SSA (Burch. cat. no. 6264.) leaves somewhat trigonal, callous, glabrous, in rosulate-bundles; younger branches pubescent; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Perhaps the same as the preceding. A low, much branched shrub. Flowers purple.

Depressed Muraltia. Shrub ½ foot.

24 M. BREVICO'RNU (D. C. prod. 1. p. 337.) leaves linear, obtuse, glabrous, tuberculated on the outside at the base, scattered; branches twiggy, glabrous, flowers axillary, sessile; capsules crowned with very short horns. ♄. G. A very distinct species. Flowers purple.

Short-horned-capsuled Muraltia. Shrub 1 foot.

25 M. OBOVA'TA (D. C. prod. 1. p. 337.) leaves obovate, obtuse, somewhat fascicled, and are as well as branches glabrous; flowers axillary, sessile. ♄. G. Native of the Cape of Good Hope. Flowers purple. Habit of *Múndia*, but without prickles.

Obovate-leaved Muraltia. Shrub 2 feet.

† *Species not sufficiently known, and perhaps many of them are identical with some of those described above.*

26 M. PHYLICOÌDES (D. C. prod. 337.) leaves linear-lanceolate, mucronate, with revolute margins, under surface as well as branches pubescent. ♄. G. Native of the Cape of Good Hope. Polýgala phylicoìdes, Thunb. prod. 121. Flowers purple.

Phylica-like Muraltia. Shrub 2 feet.

27 M. THYMIFÒLIA (D. C. l. c.) leaves oblong-lanceolate, keeled, mucronate, denticulated, and are as well as divaricating branches glabrous. ♄. G. Native of the Cape of Good Hope. Polýgala thymifòlia, Thunb. prod. 121. Flowers purple.

Thyme-leaved Muraltia. Shrub 2 feet.

28 M. PILÒSA (D. C. prod. 1. p. 337.) leaves lanceolate, mucronate, stiff, hairy; branchlets velvety. ♄. G. Native of the Cape of Good Hope. Polýgala pilòsa, Thunb. prod. 121. Flowers purple.

Hairy-leaved Muraltia. Shrub 2 feet.

29 M. FILIFO'RMIS (D. C. prod. 1. p. 337.) leaves trigonal, mucronate, solitary. ♄. G. Native of the Cape of Good Hope. Polýgala filifórmis, Thunb. Flowers purple.

Filiform-branched Muraltia. Fl. May, Dec. Clt. 1812. Shrub 1½ foot.

30 M. PAUCIFLÒRA (D. C. prod. 1. p. 337.) leaves linear, mucronated; flowers axillary, pedunculated. ♄. G. Polýgala pauciflòra, Thunb. prod. 121. Flowers purple.

Few-flowered Muraltia. Shrub 2 feet.

31 M. BURMA'NNI (D. C. l. c.) leaves ovate-linear, straight, pressed to the stem. ♄. G. Native of the Cape of Good Hope. Polýgala ericoìdes, Burm. fl. cap. prod. p. 20. Flowers probably purple.

Burmann's Muraltia. Shrub 2 feet.

32 M. POIRE'TTII (D. C. prod. 337.) leaves awl-shaped, and are as well as twiggy branches glabrous; flowers axillary, sessile, crowded. ♄. G. Native of the Cape of Good Hope. Polýgala ericoìdes, Poir. dict. 5. p. 497. Perhaps the same as *M. virgàta*. Flowers purple.

Poiret's Muraltia. Shrub 2 feet.

33 M. DUMÒSA (D. C. prod. 1. p. 337.) leaves somewhat linear, reflexed at the apex; flowers sessile, solitary. ♄. G. Native of the Cape of Good Hope. Polýgala dumòsa, Poir. dict. 4. p. 495. Flowers purple.

Bushy Muraltia. Shrub 2 feet.

34 M.? LA'XA (D. C. prod. 1. p. 337.) leaves lanceolate, solitary; flowers racemose. ♄. G. Native of the Cape of Good Hope. Polýgala láxa, Thunb. prod. 121. Flowers probably purple.

Lax Muraltia. Shrub 2 feet.

35 M.? FASCICULA'TA (D. C. l. c.) leaves very slender, somewhat ciliated; branches fascicular; flowers sessile, solitary, and in pairs. ♄. G. Native of the Cape of Good Hope. Polýgala fasciculàta, Thunb. Poir. dict. 5. p. 502. Perhaps the same as *M. ciliàris*. Flowers purple?

Fasciculated-leaved Muraltia. Shrub 1½ foot.

36 M. STRIA'TA (D. C. prod. 1. p. 337.) leaves almost terete,

unarmed. ♄. G. Native of the Cape of Good Hope. Polýgala striàta, Thunb. prod. 121. Flowers probably purple.

Striated Muraltia. Shrub 2 feet.

37 M.? PARVIFLÒRA (D.C. prod. 1. p. 337.) leaves setaceous, smoothish, minute, stipulate? branches slender; flowers axillary, solitary, sessile. ♄. G. Native of the Cape of Good Hope. ⊙? G. Polýgala parviflòra, Poir. dict. 5. p. 504.

Small-flowered Muraltia. Shrub 1 foot.

Cult. Murâltia is a beautiful genus of pretty furze-like shrubs, which deserve to be cultivated in every green-house; they all succeed well in a sandy peat soil; and cuttings taken from the young branches, and planted in sand, with a bell-glass placed over them, will root readily.

VII. MU'NDIA (from *mundus*, neat; appearance of plants). Kunth, nov. gen. amer. 5. p. 392. in adn. D. C. prod. 1. p. 337.

LIN. SYST. *Monadélphia, Hepto-Octándria.* Calyx of 5 sepals, glumaceous, permanent, 2 inner sepals wing-formed, 3 outer ones small. Petals 3 or 5, scarcely united at the base, but united with the tube of the stamens at the base, middle petal cucullate, beardless. Stamens 7-8, rather villous, monadelphous at the base with the tube cleft in front. Anthers opening by a pore at the top. Disk urceolate, girding the base of the ovary. Drupe 2-celled, and sometimes from abortion only 1-celled, 1-seeded. Seeds smooth. Albumen fleshy. Much branched, furze-like shrubs; branches spinose at the apex. Leaves leathery, quite entire. Flowers axillary, pedicellate, guarded by 3 unequal bracteas. A genus with a calyx almost like that in *Murâltia*, but with a fruit like that of *Monnìna*.

1 M. SPINÒSA (D. C. prod. 1. p. 338.) branches smooth, spinescent at the apex, angular; leaves scattered, spatulate, obtuse, rather mucronate; flowers sessile; keel 1-lobed. ♄. G. Native of the Cape of Good Hope. Polýgala spinòsa, Lin. amœn. 2. p. 141. U'lex Capénsis, Lin. spec. 1046. ex Burm. herb. Flowers small, white with a red keel. Berry eatable.

Var. α, latifòlia (D. C. l. c.) leaves obovate or oval; branches short, spinose at the top.

Var. β, angustifòlia (D. C. l. c.) leaves oblong or lanceolate; branches twiggy. Polýgala vimínea, Houtt. in herb. Deless.

Spinose Mundia. Fl. Jan. May. Clt. 1780. Shrub 2 feet.

2 M. BRAZILIE'NSIS (St. Hil. fl. bras. 2. p. 58. t. 92.) branches spreading, puberulous; leaves lanceolate, acute at the base, obtuse at the top, usually emarginate, thin; flowers not crested; wings rhomboid, tapering into the claw, bluntish, equal in length with the 3-lobed keel. ♄. S. Native of Brazil. A spinose shrub with blue flowers, which at length become yellowish.

Brazilian Mundia. Fl. Oct. Shrub 2 to 3 feet.

Cult. Neat furze-like shrubs, which deserve to be preserved in every collection of greenhouse plants. A sandy peat soil suits them best, and young cuttings planted in sand and a bell-glass placed over them will root. *M. spinòsa* often produces fruit in England, by which it may be increased in abundance.

VIII. MONNI'NA (Monnino, Count de Flora Blanca, a Spanish promoter of botany.) Ruiz et Pav. fl. per. syst. 1. p. 169. Kunth, nov. gen. amer. 5. p. 409. D. C. prod. 1. p. 338. Hebeándra, Bonpl. ges. berl. 1808. p. 40.

LIN. SYST. *Monadélphia, Octándria.* Flowers resupinate. Calyx of 5 deciduous sepals (f. 70. *a.*); 2 inner sepals wing-formed, 3 outer ones ovate, and 2 of these are often united. Petals 3-5, connate at the base (f. 70. *b.*), with the middle one concave and often 3-toothed. Stamens 8; filaments hairy, rather diadelphous, or united into a tube which is cleft in front; anthers bursting by an oblique chink at the apex. Fruit drupaceous or capsular, cordate or obovate (f. 70. *d.*), 2-celled, 2-seeded, or from abortion 1-celled, 1-seeded (f. 70. *c.*), indehiscent, at least in all the Brazilian species, sometimes girded by a membranous margin. Seeds smooth or pilose, hanging almost from the top of the cell (f. 70. *d.*). Albumen none or sparing. Shrubs or herbs, natives of South America. Leaves of all rather large, usually with revolute margins. Flowers usually with a white or yellowish corolla, and blue calycine wings, disposed in compound or simple, terminal or lateral racemes; pedicels guarded by 3 bracteas. The greater part of the species are not well known.

SECT. I. HEBEA'NDRA (εβε, *hebe*, hairy, and ανερ ανδρος, a man; in allusion to the stamens being hairy). D. C. prod. 1. p. 338. Drupes without a winged margin.

* *Racemes compound.*

1 M. POLYSTA'CHYA (Ruiz et Pav. l. c.) shrubby; leaves ovate, acutish; panicles and branchlets villous. ♄. G. Native of the Andes of Peru in thickets, especially at Pillao, where it is called Yalhoi. Flowers yellowish. The whole plant, more especially the root, is very bitter and saponaceous, hence very useful in medicine. It is said to have the same properties as *Polýgala Sénega*, and is particularly used in dysentery. Ruiz, diss. madr. 1805. icon.

Many-spiked Monnina. Fl. May. Shrub 3 or 5 feet.

2 M. LIGUSTRIFÒLIA (Kunth, nov. gen. amer. 5. p. 417.) leaves oblong-lanceolate, acute, tapering to the base, reticulately veined, membranous; branchlets and panicles pubescent; racemes in threes. ♄. S. Native of Quito in warm places near Ayavaca. Flowers yellowish but with blue wings.

Privet-leaved Monnina. Fl. May. Shrub 2 to 6 feet.

3 M. LATIFÒLIA (Bonpl. ges. berl. 1808. p. 40. under the name of Hebeándra) herbaceous; leaves obovate-oblong, acuminated, under surface pubescent; branches furrowed; racemes panicled. ♃. S. Native of New Granada on Mount Quindiu.

Broad-leaved Monnina. Pl. 1 foot.

4 M. PARVIFLÒRA (H. B. et Kunth, nov. gen. amer. 5. p. 419.) leaves ovate-oblong, tapering to the base, lessened toward the apex, under surface pubescent, reticulately veined, membranaceous; branches terete, soft, hairy; racemes panicled, somewhat corymbose. ♄. G. Native of New Granada on Mount Quindiu. Hebeándra parviflòra, Bonpl. ges. berl. 1808. p. 40. Flowers white, but with blue wings.

Small-flowered Monnina. Fl. Sept. Shrub 3 to 4 feet.

5 M. FASTIGIA'TA (Bonpl. ges. berl. 1808. p. 40. under Hebeándra) leaves oblong, acuminated at both ends, under surface soft, pubescent; racemes compound. ♄. G. Native of New Granada on Mount Quindiu. Perhaps sufficiently distinct from *M. parviflòra.*

Fastigiate-branched Monnina. Shrub 2 to 4 feet.

6 M. PUBE'SCENS (H. B. et Kunth. nov. gen. amer. 6. p. 418. t. 505.) leaves oblong, acute, somewhat mucronate, tapering towards the base, reticulately-veined, membranaceous, upper surface puberulous, under surface as well as branchlets hairy-pubescent; racemes solitary and in threes. ♄. S. Native of Caraccas. Hebeándra pubéscens, Bonpl. ges. berl. 1808. p. 40. Flowers with blue wings.

Pubescent Monnina. Fl. Feb. Shrub 3 feet.

7 M. PILÒSA (H. B. et Kunth, nov. gen. amer. 5. p. 419.) leaves oblong, acuminated, reticulately veined, membranous, upper surface puberulous, under surface hairy, but especially the nerves and veins; racemes many, disposed in a corymb-like bundle. ♄. S. Native of Quito near Ayavaca. Flowers blue.

Hairy-veined Monnina. Fl. Aug. Shrub 6 feet.

8 M. Æ'STUANS (D. C. prod. 1. p. 338.) shrubby; leaves lanceolate, stalked, and are as well as branches somewhat pubescent; racemes branched, puberulous. ♄. S. Native of New Granada. Polýgala æ'stuans, Lin. suppl. 315. Flowers blue.

Scorching Monnina. Shrub 6 feet.

9 M. CESTRIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 413. t. 502.) leaves oblong-lanceolate, acute, veiny, leathery, tapering to the base, with revolute margins, and are as well as branchlets glabrous; racemes many, disposed in crowded corymbs. ♄. S. Native of South America near the city of Quito. Hebeándra cestrifòlia, Bonpl. l. c.? Flowers with blue wings.

Cestrum-leaved Monnina. Shrub 3 feet.

10 M. PHYTOLACCÆFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 413. t. 503.) leaves elliptical-oblong, acute at both ends, reticulately-veined, thickish, glabrous; branchlets rather hairy; racemes generally in threes. ♄. S. Hebeándra padifòlia, Bonpl. l. c. Flowers with blue wings and yellow petals.

Var. α; branchlets rather hairy; leaves elliptical-oblong, acute at both ends. Native of New Granada near Mariquita.

Var. β; branchlets villous; leaves oblong, narrowed and acute at both ends. Native of Caraccas on Mount Avila. Hebeándra padifòlia, Bonpl. l. c.

Phytolacca-leaved Monnina. Fl. Ju. Dec. Shrub 2 to 4 feet.

11 M. OBSCU'RA; leaves leprous, oblong-lanceolate, with revolute margins, tapering to both ends; racemes simple or rather compound, lateral and terminal, loose; stem much branched. ♄. S. Native of Mexico. Like *M. salicifòlia.*

Obscure Monnina. Shrub 2 feet.

12 M. DE'PPEI; pubescent; leaves ovate or roundish, bluntish; racemes corymbose, lateral and terminal, forming a panicle. ♄. S. Native of Mexico. Flowers blue.

Deppe's Monnina. Shrub 1½ foot.

* * *Racemes simple and solitary.*

13 M. XALAPE'NSIS (H. B. et Kunth, nov. gen. amer. p. 414.) leaves oblong, acuminated, tapering to the base, reticulately-veined, membranous, smoothish; racemes solitary or in pairs. ♄. G. Native of Mexico near Xalapa. Hebeándra euonymoìdes, Bonpl. l. c. Flowers with blue wings.

Xalapa Monnina. Fl. March. Shrub 2 to 6 feet.

14 M. NEMORÒSA (H. B. et Kunth, nov. gen. amer. p. 410. t. 504.) leaves elliptical-oblong, acute, mucronate, tapering, and revolute at the base, obsoletely denticulated, rather veiny, thickish, glabrous, younger ones as well as branchlets pubescent; racemes bifid or simple. ♄. S. Native of the province of Quito in thickets. Hebeándra mucronàta, Bonpl. l. c. Flowers with a yellow corolla and blue wings.

Grove Monnina. Shrub 2 to 6 feet.

15 M. MYRTILLOI'DES (Bonpl. ges. berl. 1808. p. 40. under the name of *Hebeándra*) leaves elliptical, acute at both ends, rather coriaceous, racemes simple. ♄. S. Native of Peru in groves. Wings of flowers blue.

Myrtle-like Monnina. Shrub 2 to 4 feet.

16 M. OBTUSIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 411.) leaves oblong, obtuse, wedge-shaped at the base, obsoletely veined, rather leathery, and are as well as branchlets glabrous; racemes solitary. ♄. S. Native of New Granada near Almaguer. Hebeándra Phylliræoìdes, Bonpl. l. c. Flowers violet and white.

Obtuse-leaved Monnina. Fl. Dec. Shrub 12 feet.

17 M. CRASSIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 411.) leaves linear-oblong, rounded at the apex, obtuse at the base, veinless, fleshy, leathery, glabrous; branchlets pubescent, leafy; racemes solitary. ♄. S. Native on mountains about Quito. Flowers with blue wings.

Thick-leaved Monnina. Shrub 6 feet.

18 M. REVOLU'TA (H. B. et Kunth, nov. gen. amer. 5. p. 412. t. 501.) leaves oblong-lanceolate, acute, at base bluntish, with revolute margins, veinless, leathery, hairy; branchlets pubescent; racemes solitary. ♄. S. Native on the Andes in the province of Pasto. Hebeándra revolùta, Bonpl. l. c. Flowers white, with blue wings (f. 70.).

FIG. 70.

Revolute-leaved Monnina. Fl. Dec. Shrub 2 feet.

19 M. RUPE'STRIS (H. B. et Kunth, nov. gen. amer. 5. p. 415.) leaves oblong, somewhat acuminated, mucronate, narrowed at the base, irregularly and undulatedly denticulated, reticulately veined, membranaceous, smoothish; branchlets hairy; racemes solitary. ♄. S. Native of New Granada on Mount Saraguru. Perhaps Hebeándra celastroìdes and ligustrìna of Bonpl. l. c.? Flowers with blue wings.

Rock Monnina. Shrub 2 feet.

20 M. CONFE'RTA (Ruiz et Pav. fl. per. syst. 1. p. 173.) shrubby; leaves crowded, oblong, with a very small point; racemes short, corymbose, terminal. ♄. S. Native in thickets on the Andes. Flowers bluish. Drupe ovate, glabrous.

Crowded-leaved Monnina. Shrub 1½ foot.

21 M. CARDIOCA'RPA (St. Hil. fl. bras. 2. p. 60. t. 93.) stem suffruticose, hairy; leaves broad-linear, tapering to the base, very obtuse, and as if they were emarginate, denticulated, full of glandular dots; racemes spike-formed, loose, solitary; wings obovate-orbicular, very obtuse; capsule 2-celled, heart-shaped, smooth, wingless. ♄. S. Native of Brazil. Flowers pale blue.

Heart-fruited Monnina. Fl. Feb. Shrub 1 foot.

22 M. SELLÒI (Spreng. syst. 3. p. 175.) erect; stem beset with branched pili; leaves oblong or obovate-lanceolate, tapering to both ends, but much more so at the base, with ciliated revolute margins; young leaves pilose on the nerves beneath; racemes terminal, solitary, elongated; flowers large. ♃. S. Native of Brazil. Perhaps M. tristaniæfòlia, St. Hil.

Sello's Monnina. Shrub 2 to 6 feet.

23 M. LANCIFÒLIA; erect; leaves lanceolate, finely reticulated, with a strong middle nerve; racemes lateral and terminal, crowded near the tops of the branches. ♄. S. Native of Brazil. Plant smooth. Flowers rather large.

Lance-leaved Monnina. Shrub 2 to 4 feet.

24 M. TUBERÒSA; racemes loose, simple, terminal, or lateral; leaves ovate-oblong, acuminated, membranous, smooth; stem suffruticose, climbing; branchlets pubescent. ♄. S. Native of Brazil. Roots tuberous. Flowers blue.

Tuberous-rooted Monnina. Pl. 1 foot.

25 M. CROTALARIOÌDES (D. C. prod. 1. p. 339.) shrubby; leaves elliptical, acuminated at both ends, lower ones ovate; branchlets covered with pressed pubescence; racemes elongated. ♄. S. Native of South America. Berry ovate, black.

Crotalaria-like Monnina. Shrub 2 feet.

26 M. MEXICA'NA; pubescent, suffruticose; leaves oblong-lanceolate, acute; racemes terminal, solitary; stem branched; root hard, woody. ♄. S. Native of Mexico.

Mexican Monnina. Shrub 1 foot.

27 M. CÆRU'LEA; stem suffruticose, erect, pilose; leaves smooth, but rather hairy on the nerves beneath, oblong, acuminated, acute; racemes solitary, slender, elongated. ♄. S. Native of Mexico. Flowers blue.

Blue-flowered Monnina. Shrub 1½ foot.

28 M. LANCEOLA'TA (D. C. prod. 1. p. 339.) suffruticose? leaves lanceolate, acuminated, glabrous; branches divaricating; racemes elongated, pedunculated. ♄.? S. Native of Peru. Polýgala lanceolàta, Poir. dict. 5. p. 498.

Lanceolate-leaved Monnina. Shrub 1½ foot.

29 M. salicifòlia (Ruiz et Pav. fl. per. syst. 1. p. 172.) shrubby; leaves lanceolate, smooth on the upper surface, with a small point; branches hairy; racemes short, almost pyramidal. ♄. S. Native of Peru among decayed rocks. Flowers purple.

Willow-leaved Monnina. Shrub 2 feet.

30 M. pa'llida (Spreng. syst. 3. p. 175.) leaves oblong, tapering to both ends, and are as well as the branches smooth; racemes axillary, simple; fruit smooth. ♄. S. Native of Brazil.

Pale Monnina. Shrub.

31 M. longifòlia (D. C. prod. 1. p. 339.) suffruticose; leaves narrow-lanceolate, very long; branches rather velvety; racemes short, rather lax, pyramidal. ♄. S. Native of Brazil. Polýgala salicifòlia, Poir. dict. 5. p. 498.

Long-leaved Monnina. Shrub 1 to 2 feet.

32 M. bifurca'ta (Moc. et Sesse, fl. mex. icon. ined. and D.C. prod. 1. p. 339.) stem herbaceous, forked at the apex; leaves lanceolate on short footstalks, upper ones somewhat opposite, glabrous; racemes terminal, in pairs. ♃. S. Native of Mexico.

Bifurcate-stemmed Monnina. Pl. 2 feet.

33 M. ciliolòsa (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 340.) suffruticose, dichotomous; leaves oblong, acute, lessened at the base; leaf-stalks short, ciliated; racemes short. ♄. S. Native in Mexico.

Ciliary-footstalked Monnina. Shrub 1 to 2 feet.

34 M. linearifòlia (Ruiz et Pav. fl. per. syst. 1. p. 173. D. C. prod. 1. p. 340.) suffruticose; leaves linear, almost sessile, glabrous; racemes long, naked at the base. ♃. G. Native of Chili in subalpine places.

Linear-leaved Monnina. Shrub 1 to 2 feet.

35 M. herba'cea (D. C. prod. 1. p. 340.) herbaceous; at top a little branched, glabrous; leaves rhomb-lanceolate; racemes rather elongated; drupe pubescent, wingless. ☉. S. Native of Peru near Lima.

Herbaceous Monnina. Pl. 1 foot.

Sect. II. Peroca'rya (from πτερον, *pteron*, a wing, and καρυον, *karyon*, a nut; fruit girded by a wing). D. C. prod. 1. p. 340. Fruit expanded at the margin into a membranous wing.

36 M. macrosta'chya (Ruiz et Pav. fl. per. syst. 1. p. 173.) herbaceous; leaves lanceolate-rhomboid; racemes very long, lateral, and terminal; drupes glabrous, girded by a narrow, nervous, toothed membrane. Native on the hills of Peru. Flowers with purple wings?

Long-racemed Monnina. Fl. Aug. Sep. Pl. 2 feet.

37 M. peroca'rpa (Ruiz et Pav. fl. per. syst. 1. p. 174.) herbaceous, glabrous; leaves lanceolate, lower ones somewhat ovate; racemes very long; drupes girded by a membrane, which is emarginate at both ends. ♃. S. Native of Peru. Flowers purple. Plant bitter.

Wing-fruited Monnina. Fl. Aug. Sep. Pl. 1 to 2 feet.

38 M. angustifòlia (D. C. prod. 1. p. 340.) herbaceous, glabrous; leaves linear, lower ones somewhat lanceolate; racemes very long; drupes girded by a membrane. ♃. S. Native of Peru about Lima.

Narrow-leaved Monnina. Pl. 1 foot.

39 M. resedoìdes (St. Hil. fl. bras. 2. p. 61. t. 94.) stem subherbaceous, sparingly branched, somewhat dichotomous; leaves oblong-lanceolate, acute, undulately-denticulated, smoothish; racemes spike-formed, loose; wings obovate; capsule 2-celled, heart-shaped, with a narrow wing. ♃. S. Native of Brazil on the banks of the river Uruguay. Flowers violet.

Reseda-like Monnina. Fl. Jan. Pl. 1½ foot.

40 M. cunea'ta (St. Hil. fl. bras. 2. p. 62. t. 95.) stem herbaceous, almost simple, puberulous; leaves wedge-shaped, linear, obtuse or truncately emarginate, mucronulate, quite entire; racemes spike-formed, very narrow, lax; wings obovate, very obtuse; capsule 1-celled, elliptic, smooth, broadly winged. ♃. S. Native of Brazil in the eastern part of the province of Cis Platine. Flowers purple, nodding.

Wedge-leaved Monnina. Fl. Oct. Pl. 2 feet.

41 M. emargina'ta (St. Hil. fl. bras. 2. p. 63.) stem woody at the base, puberulous; leaves wedge-shaped, cordate at the apex, with a recurved mucrone in the recess, quite entire, smoothish; racemes spike-formed, loose; wings somewhat orbicular; capsule 1-celled, elliptic, pubescent, winged. ♄. S. Native of Brazil in the northern part of the province of Rio Grande do Sul. Flowers purple.

Emarginate-leaved Monnina. Fl. June. Pl. 1½ foot.

42 M. stenophy'lla (St. Hil. fl. bras. 2. p. 64.) stem woody; a little striated, sparingly-branched; leaves linear, bluntish, mucronulate, quite entire, smooth; racemes spike-formed; wings orbicular; capsule 1-celled, orbicular, pubescent, winged. ♄. S. Native of Brazil on Mount Serra da Caraca in the province of Minas Geraes. Flowers purple.

Narrow-leaved Monnina. Fl. May. Shrub 2 to 3 feet.

43 M. tristania'na (St. Hil. fl. bras. 2. p. 65.) stem rather woody at the base, rather angular, puberulous, sparingly branched; leaves linear, tapering to the base, obtuse, mucronulate, quite entire; racemes spike-formed, very loose; wings ovate, very blunt; capsule 1-celled, elliptical, winged. ♃. S. Native of Brazil in the province of Minas Geraes. Flowers purplish.

Tristan's Monnina. Fl. Aug. Oct. Pl. 3 to 4 feet.

44 M. Richardia'na (St. Hil. fl. bras. 2. p. 66.) stem suffruticose, simple, angular at the apex, pubescent; leaves elliptical, very blunt, mucronulate, quite entire, smoothish, upper ones oblong-linear or linear, pubescent; racemes spike-formed, loose; wings orbicular; capsule 1-celled, elliptically-orbicular, pubescent, winged. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers purple.

Richard's Monnina. Fl. May, Sept. Pl. 1 to 1½ foot.

Cult. None of the species of this genus are worth cultivating for ornament. They will all thrive well in a mixture of loam and peat, and young cuttings will root readily if planted in a pot of sand with a bell-glass placed over them, in heat.

IX. JA'CKIA (to the memory of Dr. Jack, a meritorious botanist who travelled in Sumatra). Blum. bijdr. ex Schlecht. Linnæa. 1. p. 646.

Lin. syst. *Diadélphia, Octándria.* Calyx of 5 equal, deciduous sepals, which are imbricate in the bud. Petals 5, middle one keel-formed. Stamens 8; filaments diadelphous, tumid at the base. Ovary on a very short pedicel, semi-orbicular; cells 2-4-seeded. Drupe globose, containing a 1-seeded nucleus. Seeds without albumen, but the endopleura is nevertheless tumid. Cotyledons large, thick. Radicle short, superior. Shrubs or trees with stipulas in the axillæ of the leaves, these are spinescent. Leaves coriaceous, entire. Flowers in axillary and terminal racemes.

1 J. vitelli'na (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 647.) leaves elliptical-oblong, obtusely acuminated, flat; racemes compound, twin, terminal, longer than the leaves or axillary, solitary. ♄. S. Native of Java. Monnìna vitellìna, Spreng.

Yellow-barked Jackia. Tree 30 feet.

2 J. exce'lsa (Blum. l. c.) leaves elliptical-oblong, waved; racemes compound, axillary, and terminal, crowded, shorter than the leaves. ♄. S. Native of Java. A large tree. Monnìna excélsa, Spreng. syst. app. p. 265.

Tall Jackia. Tree 60 feet.

3 J. longifòlia (Blum. l. c.) leaves ovate-oblong, acuminated, flat; racemes compound, axillary, and terminal, much shorter than the leaves. ♄. S. Native of Java. Monnìna longifòlia, Spreng. syst. app. p. 265.

Long-leaved Jackia. Tree.

Cult. A mixture of loam, peat, and sand will suit this genus well, and young cuttings will root if planted in a pot of sand, with a hand-glass placed over them, in heat.†

X. BREDEME'YERA (in honour of Bredemeyer, a German botanist). Willd. nov. act. nat. scrut. berl. 3. p. 411. t. 6. D. C. prod. 1. p. 340.

Lin. syst. *Monodélphia, Octándria.* Calyx of 5 sepals, two inner sepals petal-formed. Petals 3, with the middle one keel-formed. Stamens 8, monadelphous at the base. Drupe ovate, with a 2-celled nut. A doubtful genus.

1 B. floribu'nda (Willd. l. c.). ♄. S. Native of Caraccas by the margins of woods. Leaves alternate, oblong-lanceolate, very entire, glabrous, on short footstalks. Bracteas awl-shaped, situated at the base of the pedicels. Flowers small, yellow, disposed in terminal panicles.

Bundle-flowered Bredemeyera. Shrub 5 to 8 feet.

Cult. This shrub will thrive well in a mixture of sand, loam, and peat. Cuttings taken from young branches and planted in the same kind of soil will root freely under a hand-glass, in heat.

XI. SECURIDA'CA (from *securis*, a hatchet; in allusion to the form of the wing at the end of the pod). Lin. gen. no. 852. Lam. ill. t. 599. D. C. prod. 1. p. 340. but not of Tourn.

Lin. syst. *Monadélphia, Octándria.* Calyx 5-sepalled, 2 inner sepals petal-formed, 3 outer ones small. Petals 5, almost joined together and united to the tube of the stamens at their base; the middle one forming a keel which is 3-lobed at the top, the 2 lateral ones are scale-formed, the superior 2 conniving. Stamens 8, united into a tube at the base, which is cleft in front but free at the apex; anthers bursting by a pore at the apex. Capsules ovate, indehiscent, 1-celled, 1-seeded, ending in a hatchet-formed, leafy wing at the apex, and often marginated. Seed naked, hanging from the top of the cell. Albumen sparing. Climbing shrubs. Leaves alternate, ovate, or oblong, entire. Flowers in lateral or terminal racemes. Pedicels furnished with 3 bracteas at the base.

* *Stems twining and climbing.*

1 S. virga'ta (Swartz, fl. ind. occid. 3. p. 1231.) glabrous; stem climbing; branches twiggy; leaves roundish, very blunt; racemes terminal; wing of capsule rounded. ♄. ◡. S. Native of Jamaica, Hispaniola, Porto-Rico, Trinidad, &c. in bushy places.—Plum. ed Burm. t. 248. f. 1. Leaves deciduous, hardly half an inch long. Flowers fragrant, variegated.

Twiggy-branched Securidaca. Clt. 1739. Shrub climbing.

2 S. volu'bilis (Lin. spec. 992.) stem twining; branchlets somewhat pubescent; leaves oval-oblong, acute; racemes lateral; wing of capsule obovate, appendiculated on the back from the base. ♄. ◠. S. Native of South America near Santa Martha and Carthagena as well as in Trinidad. S. scándens, Kunth. Flowers red or purple, fragrant.

Twining Securidaca. Clt. 1739. Fl. March. Shrub twining.

3 S. ovalifo'lia (St. Hil. fl. bras. 2. p. 68.) stem suffruticose, climbing, branched; leaves thin, ovate, or orbicularly-ovate, very blunt and finely nerved, smooth above and pilose beneath; wings of flower obovate, scarcely ciliated at the base; wing of capsule finely ciliated and denticulated. ♄. ◡. S. Native of Brazil near Rio Janeiro. Flowers yellowish-white.

Oval-leaved Securidaca. Fl. Dec. Shrub climbing.

4 S. rivinæfòlia (St. Hil. fl. bras. 2. p. 69.) stem shrubby, climbing; branches tomentose; leaves elliptical, sometimes rather orbicular, with a very short acumen, smoothish above and tomentose beneath; wings of flowers obovately-orbicular, very blunt, hardly ciliated; wing of fruit? ♄. ◡. S. Native of Brazil in the province of Minas Geraes near a village called Curumatahy. Flowers purple.

Rivina-leaved Securidaca. Fl. Sept. Shrub climbing.

5 S. lanceola'ta (St. Hil. fl. bras. 2. p. 69.) stem shrubby, climbing; branches spotted, puberulous at the apex; leaves lanceolate, lower ones obovate or somewhat orbicular, finely nerved, all smooth above and puberulous beneath; racemes rather loose; wings of flower somewhat elliptically orbicular, finely ciliated; wing of fruit crested. ♄. ◡. S. Native of Brazil near Rio Janeiro. Flowers purple.

Lanceolate-leaved Securidaca. Shrub climbing.

6 S. mo'llis (H. B. et Kunth, nov. gen. amer. 5. p. 421.) stem climbing; branchlets pubescent; leaves roundish-ovate, obtuse at both ends, upper surface puberulous, under surface soft, pubescent; racemes terminal. ♄. ◡. S. Native on the banks of the river Amazon. P. coriàcea, Bonpl. Lower petal spatulate. Flowers violaceous.

Soft-leaved Securidaca. Fl. Aug. Shrub twining.

7 S. pube'scens (D. C. prod. 1. p. 341.) stem climbing; leaves oval, ovate, or obovate, under surface as well as branchlets somewhat pubescent; racemes terminal. ♄. ◡. S. Native of Cayenne and Guiana. Perhaps two species are here confused. Flowers purplish.

Var. α, *obovàta* (D. C. l. c.) leaves obovate, obtuse.

Var. β, *ovàta* (D. C. l. c.) leaves ovate, acutish.

Pubescent Securidaca. Shrub climbing.

8 S. hebe'clada (D. C. prod. 1. p. 341.) stem rather climbing; branches and nerves of leaves on the under surface as well as pedicels clothed with velvety hairs; leaves oval, mucronate, shining on the upper surface; racemes terminal, rather leafy. ♄. ◡. S. Native in Brazil. Flowers the size of those of *S. virgàta*, very smooth. Fruit unknown.

Hairy-branched Securidaca. Shrub climbing.

9 S. acumina'ta (St. Hil. fl. bras. 2. p. 70.) stem shrubby, climbing; branches hirsutely-tomentose; leaves ovate, acuminated, smooth above, pilose beneath; racemes rather conical, broadish; wings irregularly orbicular, puberulous in the middle on the back. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers purple.

Acuminate-leaved Securidaca. Fl. Jan. Shrub climbing.

10 S. tomentòsa (St. Hil. fl. bras. 2. p. 71. t. 96.) branches woody, hirsutely-tomentose; leaves elliptically ovate, somewhat emarginate, obtuse, ciliated, smooth and shining above, but tomentose beneath; racemes capitate, sessile; wings of flower obovate, very blunt; outer sepals ciliated. ♄. ◡. S. Native of Brazil. S. divaricàta, Mart.? Flowers purplish.

Tomentose Securidaca. Shrub climbing.

11 S. divarica'ta (Mart. in act. bonn. vol. 11.) branches twisted; leaves ovate-elliptical, very obtuse, coriaceous, shining above, tomentose beneath; racemes dense, panicled. ♄. ◡ S. Native of Brazil. Flowers purplish.

Divaricate-branched Securidaca. Shrub climbing.

12 S. complica'ta (H. B. et Kunth, nov. gen. amer. 5. p. 423.) stem climbing; leaves ovate-elliptic, obtuse, rounded at the base, covered with complicated hairs on the under surface; branchlets soft, hairy. ♄. ◡. S. Native on the banks of the river Orinoco. S. péndula, Bonpl. Bearing two glands at the base of the leafstalks in place of stipulas. Lower petal linear-oblong, equalling in length the upper one. Flowers purplish.

Complicated-haired Securidaca. Fl. May. Shrub climbing.

** *Stems erect.*

13 S. ere'cta (Lin. spec. 992.) stem erect; leaves oblong, acute at both ends; branchlets and pedicels somewhat pubescent; racemes terminal, simple. ♄. S. Native of Hispaniola

and St. Thomas, among stones. Jacq. amer. p. 197. t. 183. f. 39. Swartz. obs. 294. Flowers purple.

Erect Securidaca. Shrub 12 feet.

14 S. PANICULA'TA (Lam. ill. t. 599. f. 2. Poir. dict. 7. p. 52.) stem erect; leaves oval-oblong, rather acute; branches smoothish; racemes terminal, somewhat compound. ♄. S. Native of Cayenne. Wing of fruit appendiculate on the back from the base. Flowers purple.

Panicled-flowered Securidaca. Shrub 6 feet.

15 S. BRAZILIE'NSIS (Spreng. syst. 3. p. 175.) leaves obovate, obtuse, pubescent beneath as well as the branches; flowers panicled. ♄. S. Native of Brazil. Flowers purplish?

Brazilian Securidaca. Shrub 6 feet.

Cult. The species of *Securidàca* grow well in a mixture of loam, peat, and sand, and if cuttings are planted in a pot of sand, with a bell-glass placed over them, they will root readily.

XII. CARPOLO'BIA (from καρπος, *karpos*, a fruit, and λοβος, *lobos*, a pod; in allusion to the berry containing a silky pod or seed.)

Lin. syst. *Monadélphia, Octándria.* Sepals 5, somewhat bilabiate. Petals 3-5, with a large keel; the rest nearly equal, all unguiculate. Stamens 8, monadelphous? Drupe containing 1 villous, silky seed, or a silky 1-seeded legume. Smooth-branched shrubs, with alternate, entire leaves. Flowers disposed in axillary few-flowered racemes.

1 C. VERSI'COLOR; leaves oval, acuminated, mucronate, entire; peduncles 3-5-flowered. ♄. S. Native of Sierra Leone on the mountains. Flowers cream-coloured, striated.

Party-coloured-flowered Carpolobia. Shrub 4 feet.

2 C. DU'BIA; leaves ovate-oblong, acuminated, cordate at the base, on long footstalks; racemes in panicles, many-flowered; stamens distinct? ♄. S. Native of Sierra Leone. Flowers white.

Doubtful Carpolobia. Shrub 4 feet.

3 C. LU'TEA; leaves ovate, acuminated, mucronate; on short footstalks; peduncles 2-5-flowered. ♄. S. Native of Sierra Leone. Flowers yellow.

Yellow-flowered Carpolobia. Shrub 4 feet.

4 C. A'LBA; leaves ovate-lanceolate, acuminated, on short footstalks; peduncles usually 2-flowered. ♄. S. Native of Sierra Leone. Flowers white, streaked with red.

White-flowered Carpolobia. Shrub 6 feet.

Cult. These shrubs will grow freely in a mixture of loam and sand, and young cuttings will strike root in sand under a hand-glass, in heat.

XIII. KRAME'RIA (in honour of John George Henry and William Henry Kramer, M.D., father and son, German botanists; the former published Tentamen Botanicum in 1728 and 1744, the latter Flora Austriæ in 1756; it must also distinguish John Rudolf Kramer, who wrote a dissertation on *Myrtus* in 1731). Lœfl. itin. 195. Ruiz et Pav. prod. fl. per. t. 3. Juss. mem. mus. 1. p. 390. D. C. prod. 1. p. 341.

Lin. syst. *Monadélphia, Tetra-Hexándria.* Sepals 4 (f. 71. *a.*), rarely 5, irregular, spreading, silky on the outside and coloured on the inside. Petals 4-5, in 2 series, 3 inner ones unguiculate, with the claws united at the base. Stamens 3 or 4, somewhat monadelphous at their base or free; anthers opening by 2 pores at the apex (f. 71. *d.*). Fruit globose, indehiscent, covered with bristly prickles (f. 71. *e. b.*), 1-celled, 1-seeded (f. 71. *e.*), or incompletely 2-celled, 2-seeded. Embryo straight. Albumen none. Diffuse, many-stemmed shrubs. Leaves alternate, entire, simple or trifoliate. Flowers axillary, or on the top of the branchlets, generally solitary or disposed in spike-formed racemes. Pedicels usually furnished with 2 or 3 bracteas.

* *Leaves simple.*

1 K. IXÌNA (Lin. spec. 177.) leaves ovate-lanceolate, with spiny points, villously-pubescent; pedicels axillary, bibracteate, disposed in terminal racemes. ♄. S. Native of Cumana, where it is called *cordilla breva*, also near Angustura on the Orinoco, and St. Domingo. Flowers purple, tetrandrous. Whether there be any thing viscid in this plant which might induce its discoverer to adopt the Greek word ixine does not appear.

Ixina Krameria, Shrub procumbent.

2 K. SECUNDIFLÒRA (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 341.) leaves linear, acute, villous; pedicels longer than the leaves, furnished with two bracteas, disposed in a secund raceme. 4. S. Native of Mexico. Flowers probably red.

Secund-flowered Krameria. Pl. 1 foot.

3 K. PAUCIFLÒRA (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 341.) leaves oblong-linear, villous; pedicels few, longer than the leaves, bearing 2 bracteas on the middle of each; lower lobe of calyx gibbous. 4. G. Native of Mexico. Flowers probably red.

Few-flowered Krameria. Pl. 1 foot.

FIG. 71.

4 K. TRIA'NDRA (Ruiz. et Pav. fl. per. 1. t. 93.) leaves oblong, acutish, silky-villous; pedicels rather longer than leaves, furnished with two bracteas, disposed in a short raceme. ♄. G. Native of Peru on declivities of sandy mountains, where the root is called *Rattany*, or *Ratanhia*. It possesses powerful tonic and astringent qualities. According to the analysis of a French chemist it contains gallic acid, but neither tannin nor resin.

This plant is gathered in large quantities, from which a beautiful extract is prepared, which, as well as the root, is imported into Portugal for improving the colour and richness of red wine. From this use in manufacturing of wine, the Portuguese and Spanish merchants have kept its properties so concealed, that in this country the root was unknown till very lately: the deep colour it communicates to port wine renders it an article of great and deserved value to the manufacturer of wine. The sensible properties chiefly reside in the cortical part of the root; the ligneous part is tough and somewhat mucilaginous. On being slightly masticated the root discovers a grateful astringency, and is slightly aromatic and bitter. These qualities are imparted, as well as its colouring matter, to cold and boiling water and to proof spirit. The tincture made with brandy approaches very near to the flavour of port wine. The foreign extract, which is a gum-resin, is a very beautiful transparent article. The extract made from a decoction or infusion of the root is powdery, and not so astringent as the powdered root. Dr. Duncan asserts that the foreign extract of this root cannot be discovered from *kino*, but this melts and swells on exposure to the heat, and thus it does when as dry as *kino*, which becomes charred on exposure to heat. *Rhatany* is a very valuable tonic medicine for indigestion arising from direct debility. The solution of the foreign extract, dissolved in a camphoretic mixture, is a remedy in advanced stages of typhus fever; and it possesses all the good qualities of port wine and is exempt from its pernicious ingredient alcohol. It is an excellent tonic to accompany the use of diuretics, cathartics and absorbent stimulants in cases of dropsy. It may be substituted for *bark* or *kino*.

The compound tincture of *Rhatany* is a pleasant and efficacious stomachic; taken in doses of a tea-spoonful in a little water 3 or 4 times a day it will prove a good remedy in indigestion, heart-burn, cramp of the stomach, nervous irritability, &c.

The simple tincture is made with three ounces of the powdered root to a quart of proof spirit, and is much used by dentists with equal parts of rose-water as a lotion to astringe the gums. Equal parts of powdered Rhatany-root, oris-powder, areca-nut, and charcoal form the best tooth-powder.

Rhatany or *Triandrous* Krameria. Shrub 1 foot.

5 K. GRANDIFLÒRA (St. Hil. fl. bras. 2. p. 73. t. 97.) stem suffruticose, prostrate, almost simple, smooth below and hairy above; leaves lanceolate, very acute, spinulose, lower ones smoothish, upper ones hairy; racemes spike-formed; flowers large, secund. ♄. S. Native of Brazil in the southern part of the province of Goyaz. Flowers red.

Great-flowered Krameria. Fl. June. Shrub prostrate.

6 K. RUSCIFÒLIA (St. Hil. fl. bras. 2. p. 74.) stem suffruticose, prostrate; branches simple, flexuous, pilose below and villous above; leaves lanceolate-ovate, very acute, spinulose, villous; racemes spike-formed, flexuous, flowers secund. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers red.

Butcher's-Broom-leaved Krameria. Shrub prostrate.

7 K. TOMENTÒSA (St. Hil. fl. bras. 2. p. 74.) stem suffruticose, erect, tomentose, branched; leaves ovate, elliptical, spinulose, tomentose; racemes spike-formed, short, few-flowered. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers red.

Tomentose Krameria. Fl. May. Shrub 1 foot.

8 K. ARGE'NTEA (Mart. in act. bonn. vol. 11.) leaves oblong, acutish, rather thick, acute from a deciduous point, upper ones villous; racemes spike-formed, villous. ♄. S. Native of Brazil. Flowers red?

Silvery Krameria. Shrub prostrate.

9 K. LINEA'RIS (Ruiz et Pav. fl. per. 1. t. 94. f. a.) prostrate; leaves linear-awl-shaped, villous; pedicels downy, furnished with two bracteas. ♄. G. Native on argillaceous hills in Peru. K. pentapétala, Ruiz et Pav. syst. fl. per. p. 35. Flowers red.

Linear-leaved Krameria. Shrub prostrate.

10 K. GLA'BRA (Spreng. new. entd. 2. p. 157.) leaves oblong-lanceolate, shining; fruit smoothish. Native in Brazil. Flowers probably red.

Glabrous Krameria. Shrub 1 foot.

11 K.? LANCEOLA'TA (Torrey. in ann. lyc. new york. vol 2. p. 166.) plant hoary-pubescent; leaves lanceolate, acute, villous; pedicels twice the length of the leaves, axillary. ♄. H. Native of North America on the Rocky Mountains.

Lanceolate-leaved Krameria. Shrub.

** *Leaves trifoliate.*

12 K. CISTISOI'DES (Cav. icon. 4. p. 590.) leaves stalked, trifoliate; leaflets oblong, villous; pedicels twice as long as leaf-stalks. ♄. S. Native of New Spain. Flowers violet or red.

Cytisus-like Krameria. Shrub 3 feet.

Cult. The species of *Kramèria* will thrive well in loam mixed with plenty of sand, and young cuttings, if planted in a pot of sand with a bell-glass placed over them, will root readily.

ORDER XXIV. TREMA'NDREÆ (plants agreeing with *Tremándra* in important characters). R. Brown. gen. rem. p. 12. D. C. prod. 1. p. 343.

Calyx of 4 (f. 72. *a.*) or 5, unequal sepals, which are valvate when in the bud, and somewhat united at the base, deciduous. Petals equal in number with the sepals (f. 72. *b.*), and alternating with them; these are involute in the bud, inclosing the stamens, and much larger than the calyx, also deciduous. Stamens hypogynous, distinct, 2 in front of each petal, therefore there are 8 or 10 in each flower; filaments erect; anthers inserted by the base, 2-4-celled, bursting by a pore or tube at the apex. Ovary ovate (f. 72. *c.*), compressed, 2-celled; each cell containing 1-3 ovulæ (f. 72. *d.*). Capsule ovate, compressed, 2-celled, 2-valved (f. 72. *c.*), bearing a dissepiment in the middle of each valve. Seeds pendulous, ovate, with a naked umbilicus, and terminated by a caruncle-like appendage, inserted at the apex of the dissepiment. Embryo cylindrical, straight, placed in the axis of a fleshy albumen, with the radicle pointing towards the umbilicus, not superior.

This is a small order containing elegant, erect, heath-like shrubs, natives of New Holland, usually beset with pili, which are tipped with capitate glands. The leaves are either alternate or in whorls, without stipulas, entire or toothed. The pedicels are axillary, solitary, and 1-flowered. The flowers are usually purple, and may be compared to those of *Bauèra*, as well as the habit of the shrubs. This order is allied to *Polygàleæ*, also to *Droseràceæ*, but differs from the first in the stamens being free as well as in having regular flowers, and from the last in the capsule being 2-celled, and from all in cells of the anthers. Nothing is known of the properties of the plants contained in this order.

Synopsis of the genera.

1 TETRATHE'CA. Sepals 4 (f. 72. *a.*), nearly equal. Petals 4 (f. 72. *b.*). Stamens 8; anthers 4-celled. Seeds usually solitary in the cells.

2 TREMA'NDRA. Sepals 5. Petals 5. Stamens 10; anthers 2-celled.

I. TETRATHE'CA (from τετρα, *tetra*, fourfold, and θηκη, *thece*, a cell; in allusion to the 4 cells of the anthers, for which the plants are remarkable). Smith, nov. holl. 1. t. 2. Labill. nov. holl. specim. 1. p. 95. t. 122, 123. D. C. prod. 1. p. 343.

LIN. SYST. *Octándria, Monogýnia.* Calyx of 4, almost equal sepals (f. 72. *a.*). Petals 4 (f. 72. *b.*). Stamens 8; anthers 4-celled. Seeds generally solitary. Shrubs beset with glandular hairs, with the habit of *Bauèra*.

1 T. JU'NCEA (Smith, nov. holl. 1. t. 2.) leaves alternate, few, lanceolate, and are as well as branches glabrous. ♄. G. Native of New Holland. Stems 2-edged, almost naked. Flowers either white or purple.

Rushy Tetratheca. Fl. July, Aug. Clt. 1803. Shrub 1 ft.

2 T. GLANDULÒSA (Labill. nov. holl. 1. p. 95. t. 123. but not of Smith.) leaves alternate, ovate-oblong, toothed, and are as well as branches covered with glandular hairs; sepals ovate-lanceolate. ♄. G. Native of Van Diemen's Land. Very like *T. pilòsa*, but the flowers are larger. Flowers purple.

Glandular Tetratheca. Fl. Jul. Aug. Clt. 1822. Sh. ½ to 1 ft.

3 T. PILÒSA (Labill. nov. holl. 1. p. 95. t. 122.) leaves scattered or in whorls, oblong-linear, entire, with revolute margins, and are as well as branches covered with glandular hairs; sepals almost orbicular. ♄. G. Native of Van Diemen's Land. T. glandulòsa, Smith, exot. bot. t. 21. Flowers axillary, solitary, purple. Peduncles furnished each with a bractea at the base. Sepals orbicular, acute, ciliated with glandular hairs. Petals obovate.

Hairy Tetratheca. Fl. July, August. Clt. 1822. Shrub ½ to 1 foot.

4 T. denticula'ta (Sieb. ex Spreng. syst. append. p. 147.) leaves opposite, linear, revolute, a little denticulated, and are pilose as well as the branches; sepals lanceolate, acute, glandular. ♄. G. Native of New Holland. Flowers red.

Denticulated-leaved Tetratheca. Shrub 1 foot.

5 T. ericæfòlia (Smith, exot. bot. p. 87. t. 20.) leaves linear, 5-6 in a whorl, with revolute scabrous margins; branches scabrous; sepals ovate, acutish. ♄. G. Native of New Holland. Rudge, in Lin. trans. 8. t. 11. Peduncles and calyxes smooth. Flowers somewhat nodding. Petals obovate, rose-coloured, but sometimes white (f. 72.).

Heath-leaved Tetratheca. Fl. July, Aug. Clt. 1820. Shrub ½ to 1 foot.

6 T. thymifòlia (Smith, exot. bot. t. 22.) leaves 4 in a whorl, lanceolate, acute, ciliated; branches rather hairy; sepals lanceolate, acute, ciliated. ♄. G. Native of New Holland. Peduncles and calyxes scabrous. Sepals more acute than in *T. ericæfòlia*, to which it is nearly allied. Petals purple.

FIG. 72.

Thyme-leaved Tetratheca. Fl. July, Aug. Clt. 1824. Shrub ½ to 1 foot.

7 T. rubioìdes (Cuning. in Fields, geogr. new south wales, p. 336.) leaves 5 or 6 in a whorl, linear, falcate, upper surface scabrous; branches hoary; peduncles solitary, axillary, drooping. ♄. G. Native of New Holland on rocky declivities of the Blue Mountains. Flowers purple. Allied to *T. ericæfòlia*.

Madder-like Tetratheca. Fl. July, Aug. Clt. 1825. Shrub 1 foot.

Cult. The species of this beautiful genus of little shrubs deserve to be cultivated in every green-house, but they are very difficult to preserve, as well as extremely difficult to procure, as seeds seldom vegetate after a voyage from their places of natural growth. They thrive best in a mixture of very sandy loam and peat. Young cuttings will root freely if planted in a pot of sand, with a bell-glass placed over them.

II. TREMA'NDRA (from τρεμω, *tremo*, to tremble, to shake, and ανερ ανδρος, *aner andros*, a male; the anthers being slightly fixed by their base to the points of the filaments, shake from the least motion or breath of air.) R. Brown. ined. and D. C. prod. 1. p. 344.

Lin. syst. *Decándria*, *Monogýnia*. Calyx of 5 sepals. Petals 5. Stamens 10; anthers 2-celled. Shrubs, with the habit of *Heliánthemun*, beset with starry hairs.

1 T. stelli'gera (R. Br. ined. and D. C. prod. 1. p. 344.) erect; leaves ovate, entire, under surface hoary, upper surface beset with rough stellate hairs. ♄. G. Native on the eastern coast of New Holland. Habit of plant like *Hermánnia* or *Heliánthemum alyssoìdes*. Flowers purple?

Star-bearing Tremandra. Shrub 1 to 1½ foot.

2 T. diffu'sa (R. Br. ined. and D. C. prod. 1. p. 344.) diffuse, much branched; leaves ovate, with a few deep teeth, upper surface glabrous, under surface scabrous from a few scattered stellate hairs. ♄. G. Native of New Holland. Flowers purple?

Diffuse-branched Tremandra. Shrub 1 foot.

Cult. The species of this genus require the same treatment as *Tetrathèca*.

Order XXV. PITTOSPO'REÆ (shrubs agreeing with *Pittósporum* in many important characters.) R. Br. gen. rem. ter. austr. p. 10. D. C. prod. 1. p. 345.

Calyx of 5 deciduous sepals, which are sometimes free, and sometimes united together to the middle (f. 73. *a*.) they are imbricate in the bud. Petals 5, hypogynous, with the claws conniving, sometimes united, with spreading lamina (f. 73. *d. c*.) which are imbricate in the bud. Stamens 5 (f. 73. *d*.) hypogynous, distinct, alternating with the petals. Ovary 1, free (f. 73. *c*.) with the cells or placentas 2-5 or many-seeded. Style 1 (f. 73. *f*.), crowned by numerous stigmas (f. 73. *g*.) which are equal in number to the placentas or cells of the ovary. Pericarp capsular or baccate; cells many-seeded, sometimes incomplete. Seeds usually covered with glutinous pulp. Embryo minute, placed near the umbilicus in a fleshy albumen, with a longish radicle and short cotyledons.

This order contains beautiful trees and shrubs, or climbing shrubs as *Billardièra*, with alternate simple feather-nerved leaves, destitute of stipulas, usually entire. Flowers terminal or axillary, sometimes polygamous; they are from white to yellow, usually of a bell-shaped form, with a spreading border. This order is distinguished from the neighbouring tribes in the seeds being enveloped in resinous pulp, and in the imbricate æstivation of the petals and sepals. Nothing is known of the properties of the plants contained in this order.

Synopsis of the Genera.

1 Billardie'ra. Sepals and petals 5, which last have the claws somewhat convolute at the edges, approximate. Berry ellipsoid, terminated by the style. Climbing or twining shrubs.

2 Pitto'sporum. Sepals (f. 73. *a*.) and petals 5 (f. 73. *b*.) which last have their claws conniving into a connate tube (f. 73. *d*.). Capsule 2-3-valved, 1-celled, with a dissepiment in the middle of each valve. Seeds covered with resinous pulp. Erect trees or shrubs.

3 Bursa'ria. Calyx 5-toothed. Petals 5, distinct. Capsule compressed, obcordate, 2-celled, 2-valved. Seeds covered with resin. A spiny, branched shrub.

4 Sena'cia. Calyx 5-toothed. Petals 5, distinct. Capsule or berry 2-valved, half-2-celled. Seeds 4-8, arillate, adnate to the middle or base of the dissepiment. Shrubs with the habit of *Celástrus*.

I. BILLARDIE'RA (in honour of Jean Jacques Julien Labillardiére, a celebrated French botanist, who visited Syria and afterwards New Holland in d'Entrecasteux's expedition, author of Novæ Hollandiæ plantarum specimen, 2 vol. 4to. &c.) Smith, exot. bot. t. 1. D. C. prod. 1. p. 345. but not of Vahl. nor Mœnch.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx of 5 acuminated sepals. Petals 5, with approximate claws, which are somewhat convolute at their edges, forming a bell-shaped flower. Berry elliptical, terminated by the style. Climbing shrubs, natives

of New Holland and Van Diemen's Land, with 1-2-flowered axillary or terminal pedicels, and eatable fruit generally of bluish colour when ripe.

* *Leaves entire.*

1 B. sca'ndens (Smith, nov. holl. t. 1.) branches climbing, younger ones villous; leaves linear-oblong, entire; pedicels 1-flowered, villous, shorter than the flower; berries velvety. ♄. ◡. G. Native on the western coast of New Holland. Adult branches glabrous. Leaves 1½ inch long and 2 lines broad. Flowers cream-coloured. Sims, bot. mag. 801. B. Canariénsis, Wend. hort. her. 3. t. 15.

Climbing Apple-berry. Fl. June, Aug. Clt. 1790. Shrub climbing.

2 B. muta'bilis (Sal. par. lond. t. 48.) branches climbing, younger ones rather villous; leaves lanceolate-linear, entire; peduncles 1-flowered, glabrous, length of flower; berries glabrous. ♄. ◡. G. Native of New Holland. Flowers cream-coloured, at length purplish. Sims, bot. mag. t. 1313.

Changeable-flowered Apple-berry. Fl. June, Sept. Clt. 1795. Shrub climbing.

3 B. fusifo'rmis (Labill. nov. holl. t. 90.) branches hardly climbing, younger ones rather villous; leaves lanceolate, entire; panicles few-flowered; berries spindle-shaped, villous. ♄. ◡. G. Native of Van Diemen's Land. Flowers cream-coloured, changing to bluish. Petals spreading.

Spindle-shaped Apple-berry. Fl. May, Aug. Clt. 1823. Shrub climbing.

4 B. longiflòra (Labill. nov. holl. t. 89.) branches climbing, younger ones scarcely pubescent; leaves lanceolate, entire; pedicels 1-flowered, glabrous, one-half shorter than the flower; berries almost globose, torose, glabrous. ♄. ◡. G. Native of Van Diemen's Land. Sims, bot. mag. t. 1507. Flowers pale-yellow. This is a free growing species and abundant flowerer. It has a very fine appearance when covered with its bluish fruit.

Long-flowered Apple-berry. Fl. May, Aug. Clt. 1810. Shrub climbing.

5 B. angustifòlia (D. C. prod. 1. p. 345.) branches climbing, younger ones pubescent; leaves linear, entire, flat, glabrous; pedicels 1-flowered, and are as well as oblong berries glabrous. ♄. ◡. G. Native of New Holland. Leaves acute. Pedicels glabrous. Flowers cream-coloured. Petals acute.

Narrow-leaved Apple-berry. Fl. May, Sep. Clt. 1820. Shrub climbing.

6 B. rosmarinifòlia (D. C. prod. 1. p. 345.) branches climbing, glabrous; leaves linear, somewhat reticulately-nerved, glabrous, with revolute margins. ♄. ◡. G. Native of New Holland on the eastern coast. Flowers cream-coloured?

Rosemary-leaved Apple-berry. Fl. May, Sep. Sh. climbing.

* * *Leaves variable, some entire, others toothed or cut.*

7 B. parviflòra (D. C. prod. 1. p. 346.) branches climbing, younger ones rather villous; leaves oblong, glabrous, entire, or with a few teeth at the apex; pedicels 1 or 3-flowered, bracteate, rather hispid. ♄. ◡. G. Native on the eastern coast of New Holland. Sepals villous, hispid. Flowers 4 or 5 lines long, bluish when dry. Petals acute.

Small-flowered Apple-berry. Fl. May, Aug. Clt. 1825. Shrub climbing.

8 B. variifòlia (D. C. prod. 1. p. 346.) branches filiform, villous; leaves oblong, rather villous, entire, and somewhat pinnatifidly-toothed; pedicels villous, hardly longer than the calyx. ♄. ◡. G. Native of New Holland at King George's Sound. Sepals villous. Flowers cream-coloured, 4 lines long, disposed in a kind of corymb on the tops of the branches.

Various-leaved Apple-berry. Fl. May, Aug. Shrub climbing.

Cult. The species of *Billardièra* are desirable shrubs for the conservatory. They thrive well in an equal portion of loam and peat. Cuttings planted in a pot of sand, with a bell-glass placed over them will root readily. They may also be raised from seed, which several of the species produce in abundance.

II. PITTO'SPORUM (from πιττη, *pitte*, resin, and σπορος, *sporos*, a seed; in allusion to the seeds being covered with resinous pulp.) Banks in Gært. fr. 1. p. 286. t. 59. D. C. prod. 1. p. 346.

Lin. syst. *Pentándria, Monogýnia.* Calyx of 5 sepals (f. 73. *a.*). Petals 5 (f. 73. *b.*) with the claws conniving into a connate tube (f. 73. *d.*). Capsules smooth or hairy (f. 73. *c.*) 2-5-valved, 1-celled, bearing a dissepiment in the middle of each valve. Seeds covered with a resinous pulp. Shrubs, with entire permanent leaves, with the habit of *Laurel.* Flowers tubular, with a spreading border disposed in terminal cymes or racemes; they are either white or yellowish.

1 P. coria'ceum (Ait. hort. kew. ed. 1. vol. 3. p. 488.) leaves obovate, obtuse, coriaceous, quite smooth; peduncles umbellately branched, many-flowered, and are as well as the calyxes villous. ♄. G. Native of Madeira on the mountains. Andr. bot. rep. t. 151. Lodd. bot. cab. t. 569. Flowers bluish-white.

Leathery-leaved Pittosporum. Fl. May, June. Clt. 1783. Shrub 8 feet.

2 P. viridiflòrum (Sims, bot. mag. t. 1684.) leaves obovate, retuse, cuneated at the base, shining, under surface reticulated; panicle somewhat globose, terminal, glabrous. ♄. G. Native of the Cape of Good Hope. P. Capénse and arbutifòlium of gardeners. P. Sinénse, Desf. cat. 231. Capsules 3-valved. Flowers greenish-yellow, smelling like jasmine.

Green-flowered Pittosporum. Fl. May, June. Clt. 1806. Shrub 6 feet.

3 P. Tobìra (Ait. hort. kew. ed. 2. p. 27.) leaves obovate, obtuse, coriaceous, quite smooth; peduncles 1-flowered, pubescent, disposed in aggregate umbels. ♄. G. Native of Japan. Sims, bot. mag. 1396. Tobìra, Kœmpf. amœn. t. 797. Euónymus Tobìra, Thunb. jap. 99. P. Chinénse, Donn, cant. 48. Capsules usually 3-valved, but sometimes 3 to 5 valved; valves thick, leathery, almost woody. Flowers white. *Tobira* is the name of the shrub in Japan.

Tobira Pittosporum. Fl. March, Aug. Clt. 1804. Sh. 12 ft.

4 P. undula'tum (Andr. bot. rep. t. 393.) leaves oval-lanceolate, undulated, tapering at both ends, and are as well as the footstalks glabrous; peduncles terminal, aggregate, pubescent, branched, many-flowered. ♄. G. Native of New Holland. Vent. hort. cels. t. 76. Delauny, herb. amat. t. 36. Ker. bot. reg. t. 16. Schrad. gen. em. t. 4. Flowers white.

Undulated-leaved Pittosporum. Fl. Feb. June. Clt. 1789. Shrub 10 feet.

5 P. revolu'tum (Ait. hort. kew. ed. 2. vol. 2. p. 27.) leaves elliptical-oblong, bluntish, under surface pubescent, with revolute margins; peduncles terminal, villous, disposed in aggregate umbels. ♄. G. Native of New Holland at Port Jackson. Ker. bot. reg. 186. Lodd. bot. cab. t. 506. Flowers yellow.

Revolute-leaved Pittosporum. Fl. Feb. May. Clt. 1795. Shrub 6 feet.

6 P. tomentòsum (Bonpl. nav. t. 21.) leaves oboval-oblong, acute at both ends, upper surface glabrous, under surface as well as branches pubescently-tomentose, flat; peduncles aggregate, terminal. ♄. G. Native of New Holland. Sweet, fl. austr. t. 33. Flowers yellow.

Tomentose-leaved Pittosporum. Fl. April, June. Clt. 1824. Shrub 4 to 6 feet.

FIG. 73.

7 P. FU'LVUM (Rudge trans. Lin. soc. 10. p. 298.) leaves broad-lanceolate, obtuse; footstalks and nerves of leaves tomentose; branches tomentose; peduncles aggregate; sepals spreading. ♄. G. Native of New Holland. Flowers yellowish. Perhaps sufficiently distinct from *P. tomentòsum* (f. 73.)

Fulvous-leaved Pittosporum. Fl. April, May. Clt. 1820. Shrub 2-4 feet.

8 P. FERRUGI'NEUM (Ait. hort. kew. ed. 2. vol. 2. p. 27.) leaves elliptical, acuminated at both ends, upper surface glabrous, under surface covered with rusty tomentum on the nerves and leafstalks; peduncles terminal, branched, disposed in aggregate umbels. ♄. S. Native of Guinea? Sims, bot. mag. t. 2075. Flowers yellow.

Var. β? filàrium (D. C. prod. 1. p. 347.) bark thready. Rump. amb. 7. p. 13. t. 7. Native of the Molucca islands.

Rusty-leaved Pittosporum. Fl. Feb. May. Clt. 1787. Shrub 6 feet.

9 P. HI'RTUM (Willd. enum. p. 261.) leaves ovate-oblong, under surface pubescent, adult ones glabrous; leafstalks and branches hairy. ♄. G. Native of the Canary Islands. P. hirsùtum, Link. enum. 233. Flowers white?

Hairy-branched Pittosporum. Fl. May, June. Clt. 1822. Shrub 4 feet.

10 P. LAURIFÒLIUM (Willd. sel. in Rœm. and Schult. syst. 5. p. 432.) leaves oblong, obtuse, coriaceous; peduncles 1-flowered, lateral, and aggregate. ♄. G. Native of Teneriffe. Flowers white?

Laurel-leaved Pittosporum. Shrub 6 feet.

11 P.? PHYLLIRÆÒIDES (D. C. prod. 1. p. 347.) leaves oblong, mucronate, coriaceous, flat, very smooth, almost veinless; pedicels lateral, 1-flowered, solitary. ♄. G. Native of New Holland. Capsules ovate, somewhat compressed, 2-valved, rather fleshy, and even on the outside. Flowers yellow.

Phylliræa-like Pittosporum. Shrub 4 feet.

† *Species scarcely known except by name, and probably some of them are identical with some of those described above.*

12 P. TENUIFÒLIUM (Gært. fr. 1. p. 286. t. 59.) capsules 3-valved, rather globose, wrinkled. ♄. G. Native of New Holland.

Thin-leaved Pittosporum. Fl. May, June. Clt. 1820. Shrub 4 feet.

13 P. UMBELLA'TUM (Gært. fr. 1. p. 286.) capsules 3-valved, compressedly-globose, scabrous on the outside from elevated dots. ♄. G. Native of Australia.

Umbellate-flowered Pittosporum. Fl. May, June. Sh. 4 ft.

14 P. EXPE'NSE (Nois. hort. ex Steud. nom. 628.) ♄. G.

Expensive Pittosporum. Fl. April, June. Clt. 1820. Shrub 6 feet.

15 P. TUBERCULA'TUM (Zeyh. ex Steud. nom. 628.) ♄. G.

Tuberculated Pittosporum. Fl. April, June. Shrub.

16 P. ANDERSÒNII (Fisch. in cat. hort. roy. peterb.) ♄. G. Flower yellow. Cultivated in Chelsea botanic garden in 1824.

Anderson's Pittosporum. Fl. April, June. Clt. 1824. Sh. 4 ft.

17 P. MAURITIA'NUM (Lodd. cat. 1825.) ♄. S. Perhaps P. ferrugíneum var. β, filàrium.

Mauritian Pittosporum. Fl. Ap. Ju.? Clt. 1825. Sh. 8 feet.

Cult. All the species of *Pittósporum* are handsome shrubs, with good foliage and pretty flowers, well adapted for conservatories. They thrive best in an equal mixture of loam and peat. Ripened cuttings will root freely if planted in sand under a hand-glass, or one species may be grafted on another. *P. Tobìra*, a native of Japan, is nearly hardy, as well as those species native of the Canary Islands; these may be preserved against a south wall, with the assistance of a mat, in severe weather.

III. BURSA'RIA (from *bursa*, a pouch; the capsules very much resemble those of *Thlaspi bursa-pastoris*, which resemble a female's pocket.) Cav. icon. 4. t. 350. D. C. prod. 1. p. 347.

LIN. SYST. *Pentándria, Monogynia.* Calyx 5-toothed. Petals 5, distinct. Capsules compressed, obcordate, somewhat stipitate, 2-celled, 2-valved (almost as in *Polýgala.*) The seeds according to Cav. are clothed with resin.—An elegant much branched shrub, with oblong-cuneated, entire small leaves, and small white flowers, which are disposed either in lateral or terminal panicles.

1 B. SPINÒSA (Cav. l. c.) ♄. G. Native of New Holland. Branches either spiny or unarmed. Leaves small, wedge-shaped. Itèa spinòsa, Andr. bot. rep. t. 314. Sims, bot. mag. 1767. Cyrílla spinòsa, Spreng. nov. prov. 15.

Spiny-branched Bursaria. Fl. July, Dec. Clt. 1793. Shrub 10 feet.

Cult. This is a very desirable shrub for a green-house or conservatory, being an abundant flowerer, and very shewy when covered all over with its elegant little white blossoms. An equal mixture of sandy loam and peat is the best soil for it; and young cuttings will root freely if planted in sand under a bell-glass. (Swt.)

IV. SENA'CIA (in honour of John Senac, a distinguished French physician, was born in Gascony about the close of the 17th century; he died 1770.) Comm. ined. Du. Pet. Th. obs. pl. isl. d' afr. p. 27. D. C. prod. 1. p. 347.—Senàciæ. sp. Lam. ill. 2. p. 95.

LIN. SYST. *Pentándria, Monogýnia.* Calyx 5-toothed, small. Petals 5, distinct, lanceolate. Stamens 5, hypogynous. Younger capsules berry-formed, at length 2-valved, half 2-celled. Seeds 4-8, adhering to the base and middle of the dissepiments, arillate; with horny albumen. Embryo small, situated at the base of the seed.—Smooth branched shrubs, with feather-nerved entire leaves, and terminal corymbs of white flowers. These shrubs have the habit of *Celástrus*, and are apt to be confused with that genus if not particularly examined. The hypogynous insertion of the stamens is sufficient to distinguish them.

1 S. UNDULA'TA (Lam. ill. no. 2709.) leaves lanceolate, waved; flowers terminal, disposed in umbellate corymbs; fruit 4-sided, on short pedicels. ♄. S. Native of the Mauritius, where it is called by the French *Bois de Joli Cœur* on account of the hardness of its wood. Celástrus undulàtus, Lam. dict. 1. p. 662. Flowers white. Ovary somewhat stipitate. Style short.

Var. β; leaves oval-lanceolate.

Waved-leaved Senacia. Clt. 1785. Shrub 15 feet.

2 S. NIPAULE'NSIS (D. C. prod. 1. p. 347.) leaves lanceolate, flattish; flowers terminal, disposed in umbellate corymbs; fruit sessile, 4-seeded. ♄. G. Native of Nipaul. Celástrus verticillàtus, Roxb. hort. beng. 18. not of Fl. Peru. Leaves not in whorls, but crowded around the corymbs of flowers. Capsules somewhat compressed. Valves after opening mucronate at the apex. Flowers white.

Nipaul Senacia. Clt. 1820. Shrub 12 feet.

3 S. LANCEOLA'TA (Lam. ill. no. 2710.) leaves lanceolate, flattish; flowers disposed in umbellate corymbs; seeds 8, 4 in the bottom and 4 in the middle of the cells. ♄. S. Native of the Mauritius. See Pet. Th. l. c. Flowers white?

Lanceolate-leaved Senacia. Shrub 10 feet.

4 S. ELLÍPTICA (Lam. ill. no. 2711.) leaves elliptical, obtuse; flowers axillary, disposed in something like fascicles. ♄. S. Native of the Antilles. Like *Rhámnus sarcomphàlus*. A very doubtful species. Perhaps referable to *Celástrus* or *Maytènus*. Flowers white.

Elliptical-leaved Senacia. Shrub.

Cult. All the species of *Senàcia* will grow well in a mixture of loam and peat, or any rich light soil; and ripened cuttings planted in a pot of sand under a hand-glass, placed in heat, will root freely.

ORDER XXVI. FRANKENIA'CEÆ (plants agreeing with *Frankènia* in many important particulars.) St. Hil. mem. plac. cent. p. 39. and mem. mus. 12. p. 77. D. C. prod. 1. p. 349.

Calyx of 4-5 erect (f. 74. *b.*) or spreading (f. 77. *a.* f. 76. *a.*) sepals, united at the base into a furrowed tube (f. 74. *a.*), or cleft to the base (f. 76. *a.* f. 77. *a.*), permanent, equal, rarely unequal, lanceolate or linear acute. Petals hypogynous, equal in number to the sepals, and alternating with them, sometimes unguiculate (f. 74. *b.*). Claws length of calyx, with a spreading limb (f. 74. *b.*) in this case the throat is usually crowned with petal-like scales as in *Caryophýlleæ*, sometimes sessile, spreading (f. 76. *b.*), sometimes with a 5-petalled (f. 76. *d.*) or 5-toothed urceolus (f. 77. *d.*) between the petals and the stamens. Stamens hypogynous, sometimes equal in number with the petals (f. 74. *d.*), in this case they are alternate with them; or double that number, when this is the case the alternate ones are opposite the petals, but sometimes multiple that number; filaments filiform (f. 74. *d.*) or very short. Anthers roundish, linear or elliptical, bursting laterally by 2 pores at the apex, seldom at the base. Ovary 1 (f. 74. *g.* f. 77. *e.* f. 76. *e.*), free. Style filiform (f. 74. *e.*), simple (f. 77. *d.*). bifid or trifid (f. 74. *f.*). Capsule ovate-oblong (f. 77. *e.*), somewhat trigonal, 2-3-valved (f. 74. *g.* f. 75. *d.*), 1-celled or incompletely 3-celled from the valves being bent inwards at the edges; valves bearing seminiferous placentas at the margins on both sides (f. 74. *g.*), many-seeded. Seeds small. Embryo straight in the middle of the albumen, with a short radicle pointing towards the umbilicus, and flat leafy cotyledons. This order is composed of elegant little herbs, subshrubs or shrubs, with simple and branching stems, and opposite alternate whorled or crowded, entire, ciliated or toothed leaves, stipulate or exstipulate, when this last is the case the base is produced into stem-clasping membranes, usually furnished with glands; the stipulas when present are usually fringed. The flowers are either white, rose-coloured, or yellow, axillary or terminal, when they are axillary the peduncles are 1-flowered, when they are terminal they are either disposed in corymbs or loose racemes. Pedicels always propped by a leaf or bractea.

This order differs from *Violarièæ* and *Caryophýlleæ* as well as from all the neighbouring orders, in the seeds being fixed to the margins of the valves, to marginal parietal nerves or dissepiments, not to intervalvular placentas, as in *Violarièæ*, nor to central placentas as in *Caryophýlleæ*. The medicinal virtues of the plants contained in this order are very slight. The seeds of all are truly difficult to preserve in a living state for more than a few weeks, therefore very few of the plants of this order are to be met with in gardens, but the whole are very easy to introduce as plants.

Synopsis of the Genera.

SECT. I. FRANKE'NIÆ. Sepals united into a tube (f. 74. *a.*). Petals unguiculate; claws length of calyx. Stamens 6.

1 FRANKE'NIA. Petals and sepals 4-5. Stamens 6. Style 3-cleft (f. 74. *f.*) lobes oblong, stigmatose inside. Flowers usually with a crown of scales in the throat. Capsule 3- (f. 74. *g.*) 4 valved, many-seeded.

2 BEATSO'NIA. Petals and sepals 4-5. Stamens 6. Style bifid; lobes ending in a globular stigma. Capsule 2-valved, few-seeded. Petals appendiculate.

SECT. II. SAUVA'GEÆ. Petals and sepals spreading, not unguiculate, usually furnished with an urceolus or inner corolla, situated between the petals and stamens. Stamens 5-7 or indefinite.

3 LUXEMBU'RGIA. Sepals and petals 5 (f. 75. *e.*), unequal. Anthers 7 or indefinite, almost sessile, united into a secund mass, each bursting by 2 pores at the apex. Style awl-shaped, incurved. Capsule 3-valved (f. 75. *d.*), many-seeded. Seeds winged at the apex.

4 SAUVAGE'SIA. Sepals and petals 5 (f. 76. *a. c.*), with filiform appendages between the 5 petal-like scales or inner corolla (f. 76. *d.*). Stamens 5 between the scales and the petals. Style simple. Capsule incompletely 3-celled, 3-valved.

5 LAVRA'DIA. Petals and sepals 5 (f. 77. *a. b.*), with a monapetalous 5-toothed urceolus or corolla (f. 77. *d.*), including the stamens. Style simple. Capsule incompletely 3-celled, 3-valved, many-seeded.

SECT. I. FRANKE'NIÆ (plants agreeing with *Frankènia*, in having a tubular calyx and unguiculate petals.) Calyx tubular. Petals unguiculate, with the claws the length of the calyx, furnished with an appendage at the top on the inner side of each claw. Style bifid or trifid. Small heath-like herbs or subshrubs. Leaves opposite or in whorls.

I. FRANKE'NIA (in honour of John Frankenius, professor of botany at Upsal, who first enumerated the plants of Sweden in Speculum Botanicon, 1638; died 1661.) Lin. gen. no. 445. D. C. prod. 1. p. 349.

LIN. SYST. *Hexándria, Monogýnia.* Style 3-cleft; lobes oblong, stigmatose within. Capsules 3-4-valved.—Small prostrate heath-like plants, with the flowers usually rising from the forks of the stem, or disposed in terminal corymbs.

1 P. PULVERULE'NTA (Lin. spec. 474.) leaves opposite, in whorls, obovate, retuse, glabrous, under surface powdery, with the petioles ciliated; root slender; flowers axillary and terminal, subsolitary. ⊙. H. Native in sand by the sea-side in various parts of Europe, Siberia, Tauria, and perhaps New Holland; in England on the Sussex coast very rare, between Bognor and Brighthelmston. Smith, engl. bot. 2222. Fl. græc. t. 344. Clus. hist. 2. p. 186. f. 2. Stems prostrate. Flowers axillary, solitary, pale-red.

Powdery Sea-heath. Fl. July, Aug. England. Pl. prostrate.

2 F. NODIFLO'RA (Lam. ill. t. 262. f. 4.) leaves ovate, glabrous, not ciliated on the footstalks; stems prostrate, and are as

well as calyx glabrous. ♄. ♃. G. Native of the Cape of Good Hope. Frankènia, Burch. cat. no. 513. Flowers pale-red in axillary corymbs.

Knot-flowering Sea-heath. Fl. Ju. Aug. Clt. 1818. Pl. prostrate.

3 F. Nóthria (Thunb, prod. 58. fl. cap. ed. Schult. 1. p. 295.) leaves clustered, linear, glabrous, with revolute margins, ciliated at the base; branchlets pubescent; stems prostrate, and are as well as calyxes glabrous. ♄. ♃. G. Native of the Cape of Good Hope. Nóthria rèpens, Berg. cap. 171. t. 1. f. 2. Flowers pale red, terminal, aggregate. Petals toothed.

Nothria Sea-heath. Fl. June, Aug. Clt. 1816. Prostrate creeping plant.

4 F. læ̀vis (Lin. spec. 473.) leaves clustered, linear, glabrous, with revolute margins, ciliated at the base; stems prostrate, rooting, and are as well as calyxes glabrous; flowers terminal, or axillary, solitary. ♄. ♃. H. Native in muddy salt marshes by the sea-side in many parts of Europe and the Canary Islands. In England chiefly on the eastern coast. Smith, engl. bot. t. 205.—Mich. gen. t. 22. f. 1. Flowers rising from the forks of the stem in the same manner as in most of the species, flesh-coloured, but sometimes white with yellow claws.

Smooth Sea-heath. Fl. July, Aug. England. Pl. creeping.

5 F. interme̊dia (D. C. prod. 1. p. 349.) leaves in whorls, linear, with revolute margins, glabrous, ciliated at the base; stems prostrate, velvety; calyxes hispid; flowers aggregate. ♄. ♃. H. Native on the sea-shore in the south of Europe, particularly along the shores of the Mediterranean and Algiers. F. hirsùta, var. Calábrica, Lin. F. hirsùta, D. C. fl. fr. 4. p. 766.—Mich. gen. t. 22. f. 2. Flowers pale red or white.

Intermediate Sea-heath. Fl. Ju. Aug. Clt. 1820. Pl. trailing.

6 F. grandiflòra (Cham. et Schlecht. Linnæa. 1. p. 35.) leaves obovately-cuneated, mucronulate, with revolute margins, rather coriaceous, ciliated at the base. ♄. F. Native of New California in the sand by the sea-side. Stem trailing, woody at the base. Flowers axillary and terminal, solitary, sessile; scales of throat bifid. Stamens 6-7. Capsule lanceolate, obsoletely triquetrous. Petals reddish?

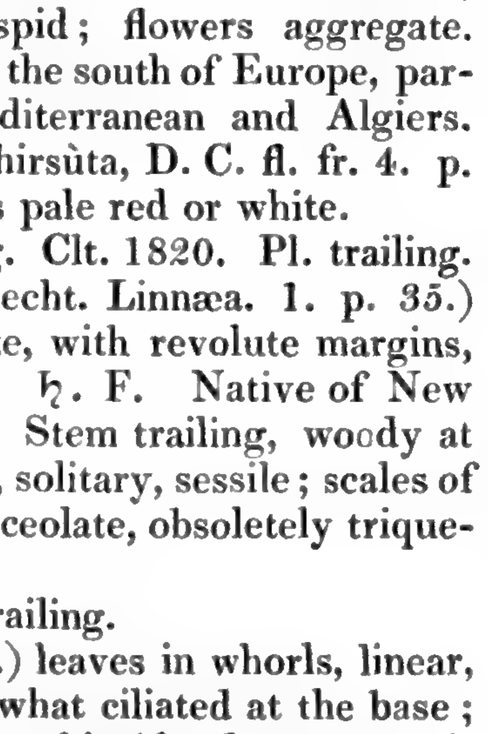
Great-flowered Sea-heath. Shrub trailing.

7 F. híspida (D. C. prod. 1. p. 349.) leaves in whorls, linear, with revolute margins, glabrous, somewhat ciliated at the base; stems diffuse, and are as well as calyxes hispid; flowers terminal, solitary. ♄. ♃. H. Native in salt marshes and on rocks from the island of Cyprus to Siberia. F. hirsùta, var. Crética, Lin. F. hirsùta, Sibth. fl. græc. t. 313. Flowers white.

Hispid Sea-heath. Fl. June, Aug. Clt. 1789. Pl. prostrate.

8 F. corymbòsa (Desf. atl. 3. p. 315. t. 93.) leaves clustered, linear, with revolute margins, glabrous, somewhat ciliated at the base; stems velvety, erect; calyxes glabrous; flowers in terminal corymbs. ♄. F. Native of Barbary near Arzeau by the sea-shore. Flowers rose-coloured (f. 74.).

FIG. 74.



Corymbose-flowered Sea-heath. Fl. June, July. Clt. 1823. Sh. ½ ft.

9 F. ericæfòlia (C. Smith, in Buch. can. p. 30.) leaves in whorls, linear, stalked, with revolute margins, somewhat ciliated at the base, upper surface glabrous, under surface as well as stems and calyxes pruinosely-velvety; flowers aggregate, terminal. ♄. G. Native of the Canary Islands on the sea-shore. Flowers rose-coloured.

Heath-leaved Sea-heath. Fl. June, July. Clt. 1815. Shrub prostrate.

10 F. Kre̊bsii (Cham. in Schlecht. Linnæa. 1. p. 36.) leaves linear, with revolute margins, smooth, rather ciliated at the base; stems flagellæform, and are as well as the calyxes hispid; flowers disposed in branched panicles; petals twice the length of the calyx. ♄. G. Native of the Cape of Good Hope. Like *F. híspida*, but the flowers are double the size. Stems 2 feet long. Leaves in whorls?

Krebs's Sea-heath. Shrub creeping.

11 F. velutì̀na (D. C. prod. 1. p. 350.) leaves linear-oblong, obtuse, not ciliated at the base, soft and velvety on both surfaces, but the stems and calyxes are not so. ♄. F. Native in fields about Mogodor. Flowers red.

Velvety-leaved Sea-heath. Fl. June, July. Shrub ½ foot.

12 F. mo̊llis (Bieb. suppl. 276.) leaves ovate-lanceolate, acute, villous; flower-bearing branches alternate, panicled, villous; flowers on pedicels, disposed in racemose panicles. ♄. H. Native of Tauria? The whole plant is clothed with soft hoary hairs. Flowers red.

Soft Sea-heath. Fl. June. Aug. Clt. 1824. Shrub prostrate.

13 F. thymifòlia (Desf. atl. 1. p. 316.) leaves oblong, obtuse, small, rather stiff, glabrous, cinerous, ciliated at the base; stems erect, younger ones hardly puberulous; calyxes glabrous; flowers axillary, sessile. ♄. F. Native in the sand of the desert of Barbary about Tozzer, also in Spain about Aranjuez. Flowers red.

Thyme-leaved Sea-heath. Fl. June, August. Shrub ½ foot.

14 F. microphẙlla (Cav. icon. 6. t. 597. f. 1.) leaves oval, small, quadrifariously-imbricated, glabrous; stems prostrate, and are as well as calyxes glabrous; flowers solitary, terminal and axillary. ♄. S. Native of South America. Flowers red.

Small-leaved Sea-heath. Shrub prostrate.

15 F. fruticulòsa (D. C. prod. 1. p. 350.) leaves linear, acutish, with revolute margins, glabrous, not ciliated at the base; stems erect, glabrous; calyxes acute, glabrous. ♄. G. Native of New Holland in the island of St. Francisco in the sand by the sea-side. Flowers pink.

Shrubby Sea-heath. Fl. June, July. Shrub 1 foot.

16 F. pauciflòra (D. C. syst. 1. p. 350.) leaves linear, almost filiform, with revolute margins, glabrous, ciliated at the base; stems erectish, canescent, and are as well as acute calyxes, glabrous. ♄. G. Native of New Holland on the western coast. Hook, in bot. mag. 2896. Flowers pink.

Few-flowered Sea-heath. Fl. June, Jul. Clt. 1824. Sh. 1 ft.

17 F. tetrape̊tala (Labill. nov. holl. 1. p. 114.) leaves linear, almost filiform, with revolute margins; flowers solitary, terminal, 4-petalled; lobes of calyx 4, with tomentose margins. ♄. G. Native of New Holland and Van Diemen's Land. Flowers pink?

Four-petalled Sea-heath. Shrub ¾ foot.

18 F. revolůta (Forsk. æg. 75.) leaves in whorls, ovate, with revolute margins; stems dichotomous; capsules 4-valved; flowers terminal, usually solitary. ♄. F. Native in the deserts of Alexandria. Habit of *F. corymbòsa*, but the flowers are scattered and solitary. Calyx 5-sepalled. Flowers rose-coloured.

Revolute-leaved Sea-heath. Shrub ½ foot.

Cult. Frankènia is a genus of beautiful little evergreen shrubs or herbs, ornamented with pretty little flesh-coloured or reddish flowers. The hardy species are well adapted for ornamenting rock-work, or to be grown in small pots and placed among other alpine plants as well as those marked frame; the greenhouse species should be placed on the front shelf of a greenhouse during winter. They all thrive well in a mixture of loam, sand, and peat, but the pots require to be well drained with potsherds. They are readily increased by cuttings, which

should be planted under a hand-glass in sand, by seeds, or by dividing at the roots.

II. BEATSO'NIA (Mr. Beatson, who wrote an account of the island of St. Helena.) Roxb. fl. st. hel. in Beats. trav. p. 300. D. C. prod. 1. p. 350.

LIN. SYST. *Hexándria, Monogýnia.* Style bifid; lobes crowned by globular stigmas. Capsules 2-valved, few-seeded. Perhaps sufficiently distinct from *Frankènia.*

1 B. PORTULACOI'DES (Beats. itin. p. 300.) leaves roundish, fleshy, glabrous; stem shrubby, bushy. ♄. G. Native of St. Helena on rocks by the sea-side on the south side of the island. Frankènia portulacæfòlia, Spreng. syst. 2. p. 134. Flowers red?

Purslane-like Beatsonia. Shrub ½ foot.

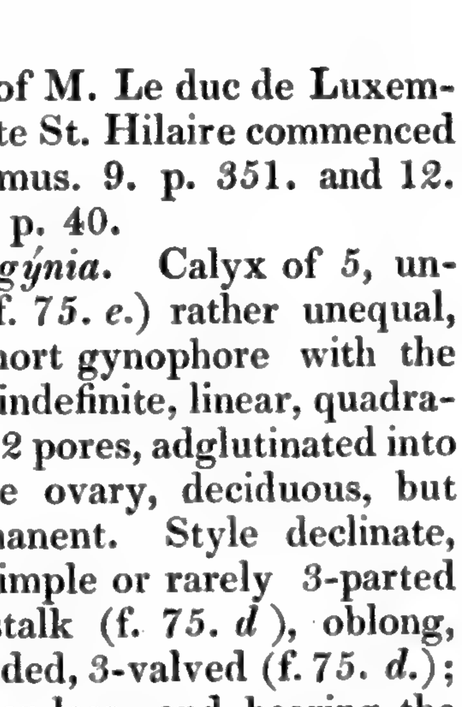
Cult. This plant will thrive well in a mixture of peat and sand, and cuttings will root readily in the same kind of mould under a hand-glass.

SECT. II. SAUVA'GEÆ (plants agreeing with *Sauvagèsia* in having a spreading calyx and corolla). Calyx of 5 equal (f. 76. *a.* f. 77. *a.*) or unequal spreading sepals. Petals 5, equal or unequal, spreading, usually with a 5-leaved (f. 76. *d.*) or tubular, 5-toothed (f. 77. *d.*), urceolus or inner corolla, situated between the petals and stamens in *Sauvagèsia*, and inclosing the stamens in *Lavràdia.* Style simple. Elegant plants with alternate leaves and feathery stipulas.

III. LUXEMBU'RGIA (in honour of M. Le duc de Luxembourg, under whose auspices M. Auguste St. Hilaire commenced his voyage to Brazil). St. Hil. mem. mus. 9. p. 351. and 12. p. 83. Plectanthèra, Mart. fl. bras. 1. p. 40.

LIN. SYST. *Octo-Polyándria, Monogýnia.* Calyx of 5, unequal, deciduous sepals. Petals 5 (f. 75. *e.*) rather unequal, deciduous. Anthers inserted on a short gynophore with the pistil, almost sessile, definite, or usually indefinite, linear, quadragonal, 2-celled, bursting at the apex by 2 pores, adglutinated into a mass on one side, usually clasping the ovary, deciduous, but the rudiments of the filaments are permanent. Style declinate, pyramidately-subulate, crowned by a simple or rarely 3-parted stigma. Ovary sessile or on a short stalk (f. 75. *d*), oblong, triangular. Capsule 1-celled, many-seeded, 3-valved (f. 75. *d.*); valves bent inwards at the edges, more or less, and bearing the seeds on the margins. Seeds numerous, oblong, girded by a membrane which is broadest at the top, with a double covering, both membranous. Umbilicus at the narrowest extremity of the seed. Albumen fleshy. Embryo slender, straight, with the radicle almost touching the umbilicus. Elegant, branched, smooth shrubs, with the habit of some species of *Rhododéndron.* Leaves alternate, toothed, mucronate, oblong, elegantly lined. Stipulas lateral, twin, caducous or permanent, setaceously-ciliated. Flowers beautiful yellow, disposed in terminal racemes or corymbs. Peduncles jointed above the base, furnished with 2 bracteas.

FIG. 75.



1 L. SPECIÒSA (St. Hil. mem. mus. 12. p. 86. t. 3.) leaves almost sessile, oblong, obtuse, tapering to the base; flowers large, disposed in racemes; stamens numerous. ♄. S. Native of Brazil on mountains near Milhoverde at the height of 3700 feet. (f. 75.)

Shewy Luxemburgia. Fl. Oct. Shrub 3 to 4 feet.

2 L. CORYMBÒSA (St. Hil. in mem. mus. 12. p. 87. t. 4.) leaves on short footstalks, oblong, narrow, acutish, cuneated and tapering at the base; flowers large, few, disposed in corymbs; stamens numerous. ♄. S. Native of Brazil on the mountains called Serra da Caraca, at the height of 6000 feet, by the sides of rivulets.

Corymbose-flowered Luxemburgia. Fl. Feb. Sh. 5 to 6 ft.

3 L. POLYA'NDRA (St. Hil. mem. mus. 12. p. 88.) leaves stalked, oblong-elliptical, rather cuneated at the base; flowers middle-sized, disposed in racemes; stamens numerous. ♄. S. Native of Brazil in the province of Minas Novas on mountains. The specific name is very inapplicable, as the two preceding species are polyandrous as well as this plant. This shrub is called *Congoha do Campo* and *Mate do Campo* in Brazil.

Polyandrous Luxemburgia. Shrub 4 to 5 feet.

4 L. OCTA'NDRA (St. Hil. in mem. mus. 9. p. 351. and 12. p. 89.) leaves almost sessile, oblong-elliptical, narrow, somewhat cuneated at the base; flowers small, disposed in racemes; sepals ciliated; stamens definite, 7-12. ♄. S. Native of Brazil with the preceding. Plectanthèra floribúnda, Mart. fl. br. 1. p. 40. t. 26.

Octandrous Luxemburgia. Fl. Feb. Shrub 2 to 6 feet.

Cult. Luxembúrgia is a genus of truly elegant shrubs, with large beautiful yellow flowers, and serrated, shining, stiff leaves, having the habit of some species of *Rhododéndron.* None of the species have been introduced to the gardens of Europe, therefore the mode of cultivating and propagating them in the gardens is unknown; but should any person be fortunate enough to introduce them in a living state, we recommend their being grown in a mixture of loam and sandy peat, giving them plenty of water in the summer season. Young cuttings will no doubt root freely in a pot of sand, with a bell-glass placed over them, in heat.

IV. SAUVAGE'SIA (so called by Linnæus in honour of his distinguished friend and correspondent Francis Boissier de Sauvages, a celebrated physician of Montpelier, and inventor of modern nosology, died in 1767). Lin. gen. no. 112. Jacq. amer. p. 77. D. C. prod. 1. p. 315. St. Hil. in mem. mus. 11. p. 97.

LIN. SYST. *Pentándria, Monogýnia.* Calyx deeply 5-parted (f. 76. *a.*), spreading, permanent, closed when in fruit. Outer petals 5 (f. 76. *b.*), equal, spreading, obovate, deciduous. Inner petals (scales?) 5 (f. 76. *d.*), opposite the outer ones, erect, with incumbent margins, conniving into a tube, permanent, with filiform appendages between the outer and inner corolla (f. 76. *c.*), which are indefinite or definite in number, they are permanent and dilated at the apex. Stamens 5, permanent, alternating with the petals; filaments very short, adhering to the base of the inner petals; anthers fixed by their base, linear, 2-celled, opening laterally at the apex. Style erect, crowned by a blunt hardly manifest stigma. Ovary superior (f. 76. *e.*), 1-celled, many-seeded. Capsule oblong or ovate-oblong, acutely 3-lobed, rarely ovate and bluntish as in *S. tenélla*, more or less profoundly 3-valved, empty above. Seeds disposed in two rows on the margins of the valves, minute and favosely-scrobiculate. Albumen fleshy. Radicle pointing towards the umbilicus, longer than the cotyledons. Elegant, smooth subshrubs, rarely herbs. Leaves simple on short petioles, rarely sessile. Stipulas lateral, twin, ciliated, permanent. Flowers axillary, or disposed in terminal racemes, sometimes bracteate, white, rose, or violet-coloured. Parts of flowers twisted in the bud.

1 S. RACEMÒSA (St. Hil. in mem. mus. 11. p. 98.) stem shrubby, almost simple; leaves elliptical-oblong or elliptical-ovate or ovate, acutish, toothed; stipulas ciliated, curled; racemes terminal, almost simple; segments of calyx acute, shorter than the corolla; filiform appendages numerous. ♄. S. Native of Brazil in humid pastures or marshes in the provinces of St. Paul

and Minas Geraes. S. ovàta, Mart. fl. bras. 1. p. 36. t. 24. f. 2. Calyx reddish or rather violaceous. The five outer petals flesh or rose-coloured. The five inner ones red or dark purple, or variegated with red and purple, girded on the outside with an indefinite number of filiform appendages.

Var. β, nàna (St. Hil. l. c.) stems hardly the length of a finger; leaves much smaller.

Racemose-flowered Sauvagesia. Fl. Dec. May. Sh 1 to 2 ft.

2 S. SPRENGE'LII (St. Hil. l. c. p. 99.) stem shrubby, erect, hardly branched; leaves small, lanceolate, acute, remotely serrated; racemes terminal; segments of calyx unequal, very blunt, shorter than the corolla; filiform appendages numerous. ♄. S. Native of Brazil and Guiana in moist meadows. S. erécta, Spreng. neue. entd. 1. p. 296. exclusive of the synonymes. S. serpyllifòlia, Mart. fl. bras. 1. p. 37. t. 25. Flowers red; the five inner petals girded on the outside by an indefinite number of filiform appendages.

Var. β, gràcilis (St. Hil. l. c. p. 101.) stem more slender and longer; leaves narrower, less crowded; racemes few-flowered; pedicels shorter, and are as well as bracteas generally solitary.

Sprengel's Sauvagesia. Fl. May. Shrub ½ foot.

3 S. LA'XA (Mart. fl. bras. 1. p. 38.) stem herbaceous, loose, elongated, erectish; leaves linear-lanceolate, acute, serrulated; flowers disposed in terminal racemes; sepals acute. ↄ. S. Native of Brazil in humid meadows. S. rubiginòsa, var. β, luxùrians, St. Hil. in mem. mus. 11. p. 102. Flowers pink.

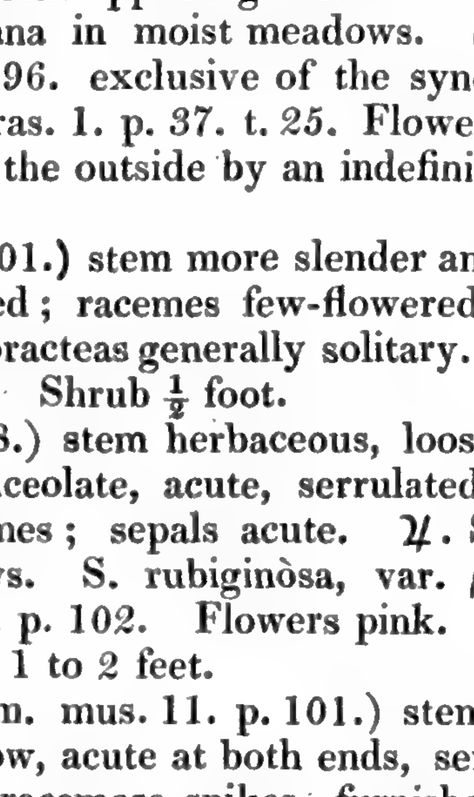
Loose Sauvagesia. Fl. Nov. Pl. 1 to 2 feet.

4 S. RUBIGINÒSA (St. Hil. in mem. mus. 11. p. 101.) stems suffruticose; leaves lanceolate, narrow, acute at both ends, serrated; flowers terminal, disposed in racemose spikes, furnished with bracteas; segments of calyx hardly unequal, oblong, acute, longer than the outer petals; filiform appendages numerous. ♄. S. Native of Guiana and Brazil in dry meadows. An erect or decumbent much-branched shrub. Inner petals girded on the outside by numerous filiform appendages.

Rusty Sauvagesia. Shrub 1 to 2 feet.

5 S. ERE'CTA (Lin. spec. 1. ed. p. 241.) root fibrous; stems suffruticose and usually branched, erect, or ascending; leaves lanceolate, acute at both ends, serrulated; flowers axillary, solitary or twin, sometimes in threes; generally nodding; segments of calyx ovate-oblong, acute, or lanceolate, acuminated, a little longer than the corolla; filiform appendages numerous. ♄. or ↄ. S. Native in humid meadows and on the borders of rivulets and fountains as well as in marshes throughout South America and the West Indies, also in Guinea, Madagascar, and Java. Jacq. amer. p. 77. t. 51. f. 3. St. Hil. mem. mus. 11. pl. 6. t. I. A. S. erécta, Aubl. guian. 1. p. 253. t. 100. f. b. Lam. ill. II. p. 119. t. 140. f. 1 and 2. S. erécta and nùtans, Pers. ench. 1. p. 253. S. erécta, Adìma, and nùtans, Poir. encyclo. VI. p. 669, 670. suppl. 5. p. 72. S. erécta, Adìma, and Peruviàna, Rœm. et Schult. syst. 5. p. 437 and 438. S. Adìma, Spreng. neue. entd. 1. p. 294. S. erécta and geminiflòra, Ging. viol. p. 27. t. II, X. The five outer petals are white, and sometimes flesh-coloured. The five inner ones purple at base and white at the apex, girded on the outside by numerous filiform appendages. This plant is called *Yaoba* by the Caribbs, *Yerba de St. Martin* by the Peruvians. This is a truly polymorphous plant.

FIG. 76.



Var. β, stricta (Mart. fl. bras. 1. p. 38.) root fibrous; stems erect, and are as well as the branches very straight.

Erect Sauvagesia. Fl. May to Oct. Clt. 1823. Pl. ½ to 1 ft.

6 S. ADI'MA (Aubl. guian. 1. p. 251. t. 100. f. a. Mart. fl. bras. 1. p. 37.) root creeping; stem herbaceous, procumbent, branched; branches flexuous; leaves lanceolate, somewhat spatulate, acute, serrulated; peduncles filiform, axillary, solitary; segments of the calyx ovate, setaceously-acuminated. ↄ. S. Native of Brazil on rocks at the river Niger, also in Guiana. M. Aug. St. Hilaire considers *S. erécta* and *S. Adìma* to be identical, but Martius considers them specifically distinct. Perhaps *S. Adìma* of all authors is the same as this plant. Flowers red. *Adima* is the name of the plant in Guiana. The negroes and creoles of Guiana use the leaves of this plant, as well as those of *S. erécta*, instead of *spinach*; they are mucilaginous; the roots are supposed to be emetic.

Adima Sauvagesia. Pl. procumbent.

7 S. TENE'LLA (Lam. ill. 2. p. 119.) stem herbaceous, weak, generally simple; leaves sessile, linear-lanceolate, rarely toothed; stipulas small; flowers axillary or terminal; outer petals a little longer than the calyx; filiform appendages five or fewer. ⊙. S. Native of Guiana in moist places. St. Hil. in mem. mus. II. p. 105. pl. 6. t. 1. f. β. Flowers pale red.

Weak Sauvagesia. Fl. July. Clt. 1820. Pl. ½ foot.

8 S. LINEARIFÒLIA (St. Hil. in mem. mus. 11. p. 106. pl. 6. t. 2. f. a.) stem suffruticose, 4 inches high; leaves linear-acute, rarely serrated; flowers axillary; petals a little shorter than the calyx; filiform appendages 5. ♄. S. Native of Brazil in the sandy part of the province of Minas Geraes called Distritodos-Diamantes, near the place where the diamonds which are vulgarly called Servico do Rio Pardo are found, at the height of about 4000 feet above the level of the sea, but very rare. S. pusílla, Mart. fl. bras. 1. p. 35. t. 24. f. 1. Flowers white or rose-coloured. Sepals ciliated at the apex.

Linear-leaved Sauvagesia. Shrub ¼ to ½ foot.

† *Species not sufficiently known.*

9 S. ERICOI'DES (Ging. mss. et D. C. prod. 1. p. 316.) stem simple; leaves crowded, linear-lanceolate, with very entire, revolute margins; stipulas bristly, awl-shaped; racemes dichotomous; sepals ovate, acuminated, 3-times shorter than the petals. ⊙. ↄ. S. Native of Brazil in moist places. S. péndula, Mart. ex Steven. in litt. Flowers pinkish.

Heath-like Sauvagesia. Fl. June, Aug. Pl. ½ foot.

10 S. ? FRUTICÒSA (Mart. in litt. et D. C. prod. 1. p. 316.) stem much branched, covered with lanceolate, bristly-pectinated permanent stipulas; branches fastigiate; leaves crowded at the top of branchlets, linear, acute, with sharp, serrulated, revolute margins; peduncles axillary, 1-flowered. ♄. S. Native of Brazil on rocks. Flowers pinkish.

Shrubby Sauvagesia. Fl. Feb. Sh. 1 foot.

11 S. SALICIFÒLIA (Ging. mss. and D. C. prod. 1. p. 316.) stems branched, ascending; leaves lanceolate, with revolute, quite entire margins; stipulas awl-shaped, awned, entire; flowers solitary, almost sessile. ♄. S. Native of Brazil. Flowers pink? Perhaps a species of *Lavràdia*.

Willow-leaved Sauvagesia. Shrub ½ foot.

Cult. Sauvagèsia is a genus of elegant little annual or shrubby plants. The annual species should be sown thinly in pots in a mixture of loam and peat in the month of March, and then placed in a moderate hot-bed, where they may remain until they have ripened their seeds, or they may be removed into the stove when the plants are of sufficient size. The shrubby kinds require the heat of a stove, and should be planted in the same kind of soil as recommended for the annual species. They may be either increased by cuttings under a hand-glass in

heat, or by seeds. The whole of the species require to be kept rather moist during the summer months.

V. LAVRA'DIA (in honour of the Marquis of Lavradio, a distinguished patron of botany ; once Viceroy of Brazil). Vellosa et Vand. in Rœm. script. lus. et bras. p. 88. t. 6. f. 6. D. C. prod. 1. p. 314. St. Hil. in mem. mus. 11. p. 107.

LIN. SYST. *Pentándria, Monogýnia.* Calyx profoundly 5-parted (f. 77. *a.*), spreading, permanent, closed when in fruit. Outer petals 5 (f. 77. *b.*), equal, spreading, ovate, or ovate-lanceolate, deciduous. Inner corolla monopetalous (urceolus ?), ovate-conical, narrowed at the apex (f. 77. *c.*) and toothed, permanent, without any filiform appendages between the outer and inner corolla. Stamens 5, alternating with the petals of the outer corolla, but inclosed within the inner corolla ; permanent filaments very short, adhering to the base of the inner corolla; anthers fixed by their base, elliptical, 2-celled, opening lengthwise at the sides. Style erect (f. 77. *d.*) permanent, crowned by a scarcely manifest stigma. Ovary (f. 77. *e.*) 1-celled at the top and 3-celled at the base, many-seeded. Capsule ovate, 3-lobed, acute, 3-valved, and empty at the top, but with the valves bent inwards at the base, even to the centre of the capsule, therefore the capsule is 3-celled at the base, dissepiments lunulately truncate, and bearing the seeds at the top. Seeds, albumen, and embryo as in *Sauvagèsia.* Elegant, smooth, subshrubs. Leaves simple, on very short footstalks. Stipulas lateral, twin, ciliated, permanent. Flowers axillary or terminal, disposed in racemes, rarely in panicles, but in both cases they are bracteate ; they are either white or red. Parts of flowers twisted in the bud.

1 L. ERICOÌDES (St. Hil. in mem. mus. 11. p. 108. pl. 7. f. a.) leaves crowded, small, linear, quite entire, with revolute margins ; flowers axillary. ♄. S. Native of Brazil on the top of a mountain called Caraca in the province of Minas Geraes, at the height of about 5700 feet above the level of the sea, but very rare. The five outer petals are rose-coloured, and the urceolus is purple.

Heath-like Lavradia. Fl. Feb. Shrub $\frac{1}{4}$ to $\frac{1}{2}$ foot.

2 L. ELEGANTI'SSIMA (St. Hil. in mem. mus. 11. p. 109. pl. 8.) stem a little branched ; leaves minute, much crowded, in bundles, elliptically-ovate, very blunt, quite entire, veinless ; racemes short, terminal. ♄. S. Native of Brazil in sandy places on the mountains called Serra de Curumatahy in the province of Minas Geraes, near Tejuco, at the height of about 4000 feet above the level of the sea, but very rare. An elegant little shrub, with pale purple flowers.

Most elegant Lavradia. Shrub 1 to 2 feet.

3 L. VELLÒZII (St. Hil. in mem. mus. 11. p. 110.) stem a little branched ; leaves lanceolate, acute at both ends, serrated ; racemes compound, generally few-flowered. ♄. S. Native of Brazil in humid places of woods, and in arid places of mountains, but very rare, in the province of Minas Geraes near fountains at the height of about 3700 feet above the level of the sea. Lavràdia, Vel. mss. Vand. fl. lus. et bras. p. 15. f. 6. Vand. in Rœm. script. p. 88. t. 4. f. 6. L. Velloziàna, Steud. nom. Flowers purple.

Velloz's Lavradia. Shrub 1 to 2 feet.

4 L. GLANDULO'SA (St. Hil. in mem. mus. 11. p. 112. pl. 9.) stem a little branched ; leaves much crowded, obovate, very blunt, with dry gland-like serratures, mucronate ; racemes furnished with very short branches ; bracteas and calyxes with glandular serratures. ♄. S. Native of Brazil, plentiful on the mountains in the province of Minas Geraes among stones, especially at the places called Itambe, Ponte Alta, and Candonga, at the height of about 2000 feet above the level of the sea. Flowers rose-coloured. Leaves broad, terminated by a long point (f. 77.).

Glandular-calyxed Lavradia. Fl. Feb. Mar. Sh. 1 to 2 ft.

5 L. CAPILLA'RIS (St. Hil. in mem. mus. 11. p. 113. pl. 10.) stem much branched ; leaves approximate, numerous, lanceolate, acute at both ends, with glandular serratures, veiny ; panicle terminal, divaricating, capillary, generally few-flowered. ♄. S. Native of Brazil in sandy places on mountains near the places called Itambe and Tapanhoa-canga, in the province of Minas Geraes, at about the height of 2000 feet above the level of the sea. Flowers red.

FIG. 77.

Var. β, glandulòso-pubéscens (St. Hil. l. c. p. 114.) branches clothed with glandular pubescence ; leaves smaller ; stipulas almost simple.

Capillary-panicled Lavradia. Fl. Nov. to April. Sh. 1 to 2 ft.

6 L. ALPE'STRIS (Mart. fl. bras. 1. p. 32. t. 22.) leaves approximate, linear, quadrifariously disposed, spreading horizontally, quite entire ; stipulas almost entire, setaceous ; bracteas and sepals naked ; flowers panicled. ♄. S. Native of Brazil in the province of Minas Geraes in stony shady places. Corolla purplish or rose-coloured.

Rock Lavradia. Fl. April, May. Sh. 3 to 4 feet.

7 L. MONTA'NA (Mart. fl. bras. 1. p. 33. t. 23.) leaves alternate, almost sessile, obovate, marginate, denticulated, obtuse, smooth, ending in a mucrone ; stipulas pinnatifid, bracteas and calyxes ciliated with glands. ♄. S. Native of Brazil in the province of Minas Geraes. L. Vandéllii, Rœm. et Schult, script. lus. min. p. 88. t. 16. f. b. L. glandulòsa, var. *β* rubélla, St. Hil. in mem. mus. 11. p. 113. Flowers deep rose-coloured, in crowded racemose panicles.

Mountain Lavradia. Clt. 1826. Shrub 2 to 3 feet.

Cult. These elegant shrubs will thrive well in a mixture of loam, sand, and peat, and cuttings will root readily in sand under a hand-glass, in heat.

Cohort III. *Ovary solitary. Placentas central.*

ORDER XXVII. CARYOPHY'LLEÆ. Juss. gen. 299. D. C. prod. 1. p. 351. Caryophýlleæ and Arenàriæ, Lam.

Calyx of 4 (f. 79. *a.*) but usually of 5 sepals (f. 81. *b.*), continuous with the pedicel, never free, sometimes united together into a tube, which is 4-5-toothed, constantly imbricate in æstivation, usually permanent. Petals equal in number to the teeth or sepals of the calyx, and alternating with them, inserted in a more or less elevated torus, unguiculate, with an entire (f. 80. *d.* f. 81. *b.*) or bifid (f. 79. *d.*) spreading limb, usually furnished with petal-like scales at the throat (f. 78. *d.* f. 79. *c.*). These scales are seldom absent. Stamens equal in number with the petals, or double that number (f. 79. *e.* f. 81. *b.*), inserted in the torus, those that are alternate with the petals are much earlier than the others and free, those that are opposite the petals are sometimes adnate to their base, sometimes these last are abortive ; filaments awl-shaped (f. 80. *c.*), sometimes monadelphous at the base ; anthers 2-celled (f. 81. *e.*), birimose, usually inserted by their base. Ovary inserted on the top of the torus, simple, ovate, or oblong (f. 81. *f.*), 2-5-valved, crowned by an equal number of stigmas (f. 81. *g.*), these are filiform or clavate, distinct from the base, stigmatose and papillose inside. Capsule 2-5-valved,

united at the base and opening at the top (f. 78. *a.*), and toothed; teeth equal in number to the valves of the capsule, sometimes entire, sometimes bifid, usually 1-celled, but sometimes 2-5-celled from the partitions jutting out from the valves to the central placenta, sometimes incomplete, sometimes continuous to the axis. Placenta always central, it is free and rather conical in the 1-celled capsule, and sometimes, though seldom, continuous with the base of the styles; in the many-celled capsules it is connected with the dissepiments. Seeds indefinite, rarely definite, disposed along the central placenta, 2 rows in a series, with as many series as there are styles, and alternating with them. Albumen mealy, usually central. Embryo sometimes perepheric, more or less incurved, rarely straight, central, with the radicle pointing towards the hilum. This order is composed of herbs or subshrubs with knotted stems, opposite, entire leaves, which are usually connate at the base. The flowers are terminal, solitary, or disposed in racemes, panicles, or corymbs, they are either white, yellow, or red, or the shades between these colours. They are inhabitants of mountains and pastures of all parts of Europe, Siberia, the North of Africa and North America; few are to be met with within the tropics. Most of the genera are ornamental and well adapted for ornamenting rock-work and flower-borders; but in *Diánthus* the pride of the order consists. This genus is almost unrivalled for the brilliancy and fragrance of its flowers, and for the neatness of its leaves. Some are trifling weeds, as *Spérgula*, *Alsìne*, and *Cerástium*. The medical virtues of this order are but slight. *Saponària officinàlis* and one or two others have been praised for possessing antisyphilitic properties; the root of *Silène Virginiàna* is reputed anthelmintic, and the *Arenària peploìdes*, being fermented, is used by the Icelanders as food. This order differs from all the foregoing in the placentas being central, not intervalvular, nor marginal, and from *Lineæ* in the cells being many-seeded, not 1-2-seeded as in that order, except from abortion, as well as in the valves of the capsule being connected, not separating from the base. From *Malvàceæ* it differs in the capsule not being of numerous distinct carpels surrounding the axis. The seeds of all retain their vegetative power for a length of time, therefore they are easily introduced in a living state from any part of the world.

Synopsis of the genera.

Tribe I.

Sile'neæ. *Sepals united into a cylindrical tube, which is 4-5-toothed at the apex.*

1 Gypsóphila. Calyx campanulate, angular, somewhat 5-lobed, with membranous margins. Petals 5, not unguiculate. Stamens 10. Styles 2. Capsule 1-celled.

2 Ba'nffya. Calyx tubular, profoundly 5-parted. Petals 5, undivided. Stamens 10, 5 of which are fertile. Styles 2. Capsule 1-celled, few-seeded.

3 Dia'nthus. Calyx tubular, 5-toothed, furnished with 2-6 imbricate, opposite scales at the base. Petals 5 (f. 78. *b.*) with long claws. Stamens 10. Styles 2. Capsule 1-celled (f. 78.). Seeds compressed.

4 Sapona'ria. Calyx tubular, 5-toothed, naked at the base. Petals 5, unguiculate. Stamens 10. Style 2. Capsule 1-celled.

5 Cucu'balus. Calyx campanulate, 5-toothed, naked. Petals 5, unguiculate, with a bifid limb. Capsule fleshy, 1-celled.

6 Sile'ne. Calyx tubular, 5-toothed, naked. Petals 5, unguiculate, with an entire or bifid limb, usually furnished with a crown of petal-like bifid scales in the throat. Stamens 10. Styles 3. Capsules 3-celled at the base, opening at the top, 6-toothed.

7 Visca'ria. Calyx cylindrical, 5-toothed, naked. Petals 5, unguiculate, with scales in the throat. Stamens 10. Styles 5. Capsule 5-celled. Anthophorum long.

8 Ly'chnis. Calyx tubular, cylindrically-clavate, 5-toothed, naked. Petals 5, unguiculate, usually furnished with a crown of petals like scales in the throat. Stamens 10. Styles 5. Capsule 1-celled. Anthophorum long.

9 Agroste'mma. Calyx egg-shaped, 5-toothed, naked. Petals 5, unguiculate, furnished with a crown of petal-like scales in the throat. Stamens 10. Styles 5. Capsule 1-celled. Anthophorum short or wanting.

10 Githa'go. Calyx campanulate, coriaceous, with 5 long segments. Petals 5, unguiculate, naked. Stamens 10. Styles 5. Capsule 1-celled. Anthophorum wanting.

11 Vele'zia. Calyx tubular, 5-toothed. Petals 5, with long filiform bearded claws (f. 79. *c.*), and an emarginated limb. Stamens 10. Styles 2. Capsule 1-celled (f. 79. *b.*).

12 Dry'pis. Calyx tubular, 5-toothed. Petals 5, unguiculate, with 2-parted limbs and with a crown of bifid petal-like scales in the throat. Stamens 5. Styles 3. Capsule 1-celled, cut round about, 1-seeded from abortion.

13 Vivia'nia. Calyx campanulate, 5-toothed. Petals 5, unguiculate. Stamens 10. Stigmas 3. Capsule 3-celled, half 3-valved, many-seeded.

Tribe II.

Asine'æ. *Sepals 4-5, free, or hardly connected at the base.*

14 Orte'gia. Calyx 5-parted. Corolla wanting. Stamens 3; anthers cordate. Style 1, crowned by a capitate stigma. Capsule 1-celled, 3-valved. Seeds fixed to the bottom of capsule.

15 Gou'ffeia. Calyx 5-parted, spreading. Petals 5, entire. Stamens 10. Styles 2. Capsule globose, 1-celled, 2-valved, 1-2-seeded.

16 Buffo'nia. Calyx of 4 sepals. Petals 4, entire. Stamens 4. Styles 2. Capsule compressed, 1-celled, 2-valved, 2-seeded.

17 Sagìna. Calyx 4-5-parted. Petals 4-5, or wanting. Stamens 4-5. Capsule 4-5-valved, 1-celled, many-seeded.

18 Mœ'nchia. Sepals and petals 4. Stamens 4. Styles 4. Capsule membranous, 1-valved, 1-celled, 8-10-toothed at the apex, many-seeded; seeds kidney-shaped.

19 Hymene'lla. Calyx 4-parted, spreading. Petals 4, oblong, entire, length of the calyx. Stamens 4, alternate with the petals, joined at the base by a little 8-toothed crown. Ovary ovate. Styles 3. Capsule 3-celled.

20 MOEHRI'NGIA. Calyx 4-parted. Petals 4. Stamens 8. Styles 2. Capsule 4-valved, 1-celled, many-seeded.

21 ELA'TINE. Calyx 3-4-parted. Petals 3-4, without claws. Stamens 3-4 or 6-8. Styles 4, capitate at the top. Capsule 4-valved, 4-celled, many-seeded. Seeds cylindrical.

22 BE'RGIA. Calyx 5-parted. Petals 5. Stamens 10. Style 5, approximate. Capsule 5-valved, 5-celled.

23 MOLLU'GO. Calyx 5-parted. Petals wanting. Stamens 3. Styles 3. Capsule 3-valved, 3-celled, many-seeded.

24 PHARNA'CEUM. Calyx 5-parted. Petals wanting. Stamens 5. Styles 3. Capsule 3-valved, 3-celled, many-seeded.

25 PHY'SA. Calyx of 5-sepals. Petals wanting. Stamens 10. Stigmas 3. Capsule 3-furrowed, 3-valved, 3-celled. Valves septiferous, conniving with the receptacle.

26 HOLO'STEUM. Calyx of 5 sepals. Petals 5, toothed. Stamens 5, or only 3-4 from abortion. Styles 3. Capsule 1-celled, opening at the apex by 6 teeth.

27 SPE'RGULA. Calyx 5-parted. Petals 5, entire. Stamens 10. Styles 5. Capsule 1-celled, 5-6-valved, many-seeded.

28 SPERGULA'RIA. Calyx 5-parted or 5-sepalled. Petals 5, entire. Stamens 5-10. Styles 3-5. Capsule 1-celled, 3-5-valved, many-seeded; seeds marginate.

29 DRYMA'RIA. Calyx 5-parted. Petals 5, bifid. Stamens 5. Styles 3. Capsule 3-valved, even to the base, 5 or many-seeded. Embryo perepheric, rather annular.

30 SCHÍEDEA. Calyx of 5 sepals. Petals 5, minute, bifid. Stamens 10. Styles 3, stigmatose on the inside. Capsule 1-celled, 3-valved, separating near to the base, many-seeded.

31 STELLA'RIA. Calyx 5-parted. Petals 5, bifid. Stamens 10, or from abortion only 3-8. Styles 3. Capsule 1-celled, 6-valved at the apex, many-seeded.

32 ARENA'RIA. Calyx of 5 sepals. Petals 5, entire. Stamens 10 or fewer from abortion. Styles 3. Capsule 1-celled, 3-6-valved at the apex, many-seeded.

33 ME'RCKIA. Calyx of 5 sepals. Petals 5, entire. Stamens 5. Styles 3. Capsule inflated, depressed, globose, 3-valved, imperfectly 3-celled, with the dissepiment 2-parted, many-seeded.

34 CERA'STIUM. Calyx 5-parted (f. 80. *a*.). Petals 5, usually bifid. Stamens 10. Styles 5. Capsule 1-celled, cylindrical or globose, opening at the top, 10-toothed.

35 BRACHYSTE'MMA. Calyx deeply 5-parted. Petals 5, minute, acute. Stamens 5. Styles 2. Capsule spherical, 1-celled, 4-valved, 1-seeded, opening to the base.

36 CHERLE'RIA. Calyx of 5 sepals (f. 81. *b*.). Petals 5, small, emarginate. Stamens 10. Styles 3 (f. 81. *g*.). Capsule 3-celled, 3-valved; cells 2-seeded?

37 SPERGULA'STRUM. Calyx of 5 sepals. Petals 5, very minute, entire or wanting. Stamens 10, perigynous. Stigmas 4, sessile, ligulately-setaceous. Capsule ovate, longer than the calyx, 4-valved.

38? HYDROPI'TYON. Calyx of 5 sepals. Petals 5, ovate, roundish. Stamens 10, pilose. Style 1, crowned by an orbicular stigma. Capsule 1-celled, 1-seeded; seed filling the capsule.

Tribe I.

SILE'NEÆ (plants agreeing with *Silène*, in having a tubular calyx.) D. C. prod. 1. p. 351.—Caryophýlleæ, Lam. Sepals grown together into a cylindrical or campanulate tube, 4 or 5-toothed at the apex.

I. GYPSO'PHILA (from γυψος, *gypsos*, lime, or plaster, and φιλεω, *phileo*, to love; because the plants of this genus chiefly prefer a limestone or chalky soil.) Lin. gen. no. 768. D. C. prod. 1. p. 351.

LIN. SYST. *Decándria, Digýnia.* Calyx campanulate, angular, somewhat 5-lobed; margins of lobes membranous. Petals 5, not unguiculated. Stamens 10. Styles 2. Capsule 1-celled. Annual, or perennial evergreen herbaceous plants, with leaves resembling the pink, and small white or pink flowers, usually disposed in diffuse panicles.

SECT. I. STRU'THIUM (*Struthium* is the Latin for fullers'herb.) Ser. mss. and D. C. prod. 1. p. 352. Calyxes free from scales at the base.

1 G. OCCELLA'TA (Sibth. et Smith, fl. græc. t. 387.) flowers capitate; petals ovate, marked by a purple circle; stems diffuse; leaves spatulate, downy on both surfaces. ♃. H. Native of mount Delphi in the island of Negropont. Cucúbalus polygonoìdes, Willd. spec. 2. p. 690? Petals entire, white, marked with a purple circle as in *Diánthus deltoìdes*. Stems diffuse, 3 or 6 inches long.

Occellated-petalled Gypsophila. Fl. July, Aug. Pl. ½ foot.

2 G. THYMIFÒLIA (Sibth. et Smith, fl. græc. t. 388.) flowers somewhat capitate; stems diffuse, somewhat dichotomous; leaves spatulate, downy on both surfaces; petals obovate, rounded, not spotted. ♃. H. Native of mount Parnassus. Habit of *G. occellàta*. Stem more elongated and more branched. Calyx hairy. Flowers 2 or 3 in each tuft, white. Plant diffuse.

Thyme-leaved Gypsophila. Fl. July. Pl. ½ foot.

3 G. STRU'THIUM (Lin. spec. 582.) flowers in dense round panicled tufts; stems simple, roughish; leaves linear, fleshy, nearly semi-cylindrical, axillary ones crowded. ♃. H. Native of Spain.—Barrel. icon. 64. t. 119. Stems shrubby at the base. Flowers white. Petals hardly emarginate. This herb is said to be used instead of soap for scouring by the Spaniards at present, as it was by the ancients. It would be curious to know if the plant contains fossil-alkali, like many succulent maritime plants, and whether the saponaceous qualities of *Saponària officinàlis* be owing to the same cause.

Fullers'-herb Gypsophila. Fl. July, Aug. Clt. 1729. Pl. 1½ ft.

4 G. FASTIGIA'TA (Lin. amœn. 3. p. 23.) flowers corymbosely-fastigiate; stems ascending; leaves lanceolate-linear, obsoletely triquetrous, smooth, obtuse, secund; stamens exserted. ♃. H. Native of France, Switzerland, Germany, and Siberia, among rocks.—Gmel. sib. 4. p. 144. f. 61. f. 1. Stem procumbent before flowering. Flowers white. Segments of the calyx obtuse, pruinose.

Fastigiate-flowered Gypsophila. Fl. June, July. Clt. 1759. Pl. 1 foot.

5 G. DICHÓTOMA (Besser. prim. fl. galiz. 1. p. 372.) flowers fastigiately-corymbose; stem erect, dichotomous, compressed, glabrous; leaves linear, somewhat fleshy, triquetrous, acute; petals oblong, spreading; styles equalling the stamens in length. ♃. H. Native of Poland among stones about Jaslo. Flowers white or pink.

Dichotomous-stemmed Gypsophila. Fl. July. Pl. 2 feet.

6 G. COLLÌNA (Stev. in litt. and D. C. prod. 1. p. 252.) stem branched, smooth; flowers fastigiate; leaves linear, somewhat fleshy, acute, roughish; lobes of calyx bluntish; stamens long. ♃. H. Native about Odessa. Flowers white or pink.

Hill Gypsophila. Fl. July, Aug. Clt. 1821. Pl. 1½ foot.

7 G. ARENA'RIA (Walds. et Kit. hung. 40. t. 41.) flowers corymbosely-fastigiate; petals very rarely emarginated; leaves linear, rather fleshy, glabrous, flat. ♃. H. Native of Hungary and Volhynia, in a sandy or gravelly soil. Flowers pale-red. Capsules globose.

Sand Gypsophila. Fl. July, Aug. Clt. 1801. Pl. 1 foot.

8 G. VISCÒSA (Murr. in comm. gœtt. 1783. p. 9. t. 3.) flowers fastigiately-corymbose; branches divaricating; leaves ovate-lanceolate, smooth, cordate at the base, and clasping the stem; space of stem between the leaves clammy in the middle; petals retuse; segments of calyx broad, obtuse. ⊙. H. Native of the Levant. Flowers white or pink.

Clammy Gypsophila. Fl. July, Aug. Clt. 1773. Pl. ½ to 1 ft.

9 G. TENE'LLA (Poir. suppl. 2. p. 874.) flowers paniculately-umbellate, on long pedicels; stems very pliant. ⊙. H. Native? Bracteas short, ovate-lanceolate. Flowers white or pink.

Delicate Gypsophila. Fl. July, Aug. Clt. 1816. Pl. ½ to ¾ ft.

10 G. GRANDIFLÒRA (Poir. suppl. 2. p. 874.) stem straight; flowers panicled; branchlets almost naked, few-flowered; petals emarginate; leaves linear-awl-shaped, hairy. ♃? H. Native? Panicles few-flowered. Flowers large, white or pink.

Great-flowered Gypsophila. Fl. July. Pl. 1½ foot.

11 ALTI'SSIMA (Lin. spec. 582.) branches spreading; flowers panicled, small; panicle much branched; pedicels clammy; stems erect; leaves lanceolate, somewhat 3-nerved. ♃. H. Native of Siberia and Greece.—Gmel. sib. 4. p. 143. t. 60. Capsules small, roundish. Segments of calyx obtuse, frosted. Flowers pink or sometimes nearly white. Petals entire?

Tallest Gypsophila. Fl. July, Aug. Clt. 1759. Pl. 3 to 5 ft.

12 G. PERFOLIA'TA (Lin. spec. 583.) flowers loosely panicled; panicle much branched; leaves ovate-lanceolate, ribbed, half stem-clasping, horizontal; petals entire. ♃. H. Native of Spain and the Levant. Dill. elth. 368. t. 276. Flowers pale-red.

Var. β, tomentòsa (D. C. prod. 1. p. 352.) leaves downy. G. pubéscens, Hort. G. tomentòsa, Lin. spec. 582? ♃. H. Native of Tauria.—Barrel. icon. t. 1002. Flowers white or pink.

Perfoliate Gypsophila. Fl. July, Aug. Clt. 1732. Pl. 2 ft.

13 G. SCORZONERIFÒLIA (Hort. mus. par. and D. C. prod. 1. p. 352.) flowers panicled; panicles clammy; leaves lanceolate, half stem-clasping, acute, 3-5-nerved, smooth. ♃. H. Native of Siberia near Kislar. G. sabulòsa, Stev. in litt. G. perfoliàta, Bieb. fl. taur. cauc. ex Stev. This plant differs from *G. perfoliàta*, in the panicles being clammy, flowers larger, and segments of calyx more acute. Flowers pink. Panicle dichotomous.

Salsafee-leaved Gypsophila. Fl. July, Aug. Clt. 1817. Pl. 1½ to 3 feet.

14 G. ACUTIFÒLIA (Fisch. cat. hort. gor. 1812. p. 59.) flowers trichotomously panicled; peduncles villous, clammy; petals emarginate, twice as long as the calyx, longer than the stamens; leaves linear, lanceolate, acuminated, flat, obscurely 3-nerved. ♃. H. Native of Caucasus on stony hills. G. altíssima, Bieb. fl. taur. cauc. 1. p. 280. but not of Lin. Flowers white.

Acute-leaved Gypsophila. Fl. July, Aug. Clt. 1817. Pl. 2 or 3 feet.

15 G. PANICULA'TA (Lin. amœn. 3. p. 23.) flowers panicled, minute, dioeceous; peduncles smooth, filiform, divaricating; segments of calyx obtuse; leaves linear-lanceolate, scabrous, acute. ♃. H. Native of Sicily in sandy or gravelly places, also in Siberia and Hungary about Buda. Jacq. fl. austr. 5. t. 1. A diffuse plant, with numerous small whitish flowers.

Panicled-flowered Gypsophila. Fl. June, July. Clt. 1759. Pl. 2 to 3 feet.

16 G. ARRÓSTII (Guss. pl. rar. p. 160. t. 30.) flowers panicled, small, hermaphrodite; branches of panicle trichotomous, 1-flowered; stamens rather longer than the corolla; calycine segments obtuse, dotted, scabrous; leaves linear-lanceolate, flattish, smooth; stems round, prostrately ascending, smooth. ♃. H. Native of Calabria. Arróstia dichótoma, Raf. carat. p. 76. Flowers small, white. Capsule 4-5-valved. Calyx bractless.

Arrost's Gypsophila. Fl. June, July. Pl. prostrate.

17 G. ASCE'NDENS (Jacq. hort. vind. 2. t. 138.) flowers panicled, small; peduncles smooth, filiform, divaricating; segments of calyx acute, the same length with the corolla, stamens, and pistils; stems prostrate; leaves lanceolate-linear. ♃. H. Native of the Levant. Petals emarginate, white.

Ascending-stemmed Gypsophila. Fl. July, Aug. Clt. 1800. Pl. prostrate.

18 G. GLAU'CA (Stev. in litt. and D. C. prod. 1. p. 353.) flowers panicled; panicle divaricating; branches few-flowered, pubescent, clammy; leaves linear-lanceolate, somewhat fleshy, obtuse. ♃. H. Native of Caucasus. G. rèpens, Bieb. fl. taur. 318. ex Stev. in litt. Flowers white.

Glaucous-leaved Gypsophila. Fl. Jul. Aug. Clt. 1822. Pl. 1½ ft.

19 G. E'LEGANS (Bieb. fl. taur. 1. p. 319. suppl. 296.) flowers dichotomously-panicled, glabrous; petals emarginate, twice as long as the calyx and stamens; leaves lanceolate, somewhat fleshy. ⊙. H. Native of Tauria in gravelly places. Schrank. pl. mon. t. 21. Very like *G. viscòsa*, but the leaves are narrower, and acute at both ends. Flowers pinkish.

Elegant Gypsophila. Fl. June, Sep. Clt. 1818. Pl. 1 foot.

20 G. CRE'TICA (Sibth. et Smith, fl. græc. t. 384.) stem paniculately branched, smooth, viscid, but pubescent towards the top; flowers small, erect; calyx many-nerved; leaves linear-awl-shaped, 3-nerved, smooth; petals small, entire. ♃. H. Native of Candia in arid places. Saponària Crética, Lin. spec. 584.—Alp. exot. 292. t. 291. Flowers small, white above but flesh-coloured beneath. Habit of *G. rígida*.

Cretan Gypsophila. Fl. May, July. Clt. 1810. Pl. ½ foot.

21 G. OCHROLEU'CA (Sibth. and Smith, fl. græc. t. 385.) stems dichotomous, divaricating; petals entire, spotted at the base; leaves awl-shaped, the lower ones linear and flaccid. ♃. H. Native on mount Hymettus near Athens. Flowers like those of *G. Crética*, but the petals are spatulate, of a pale straw-colour, and elegantly striped and spotted with purple at the base.

Cream-coloured-flowered Gypsophila. Fl. July. Pl. 1 foot.

22 G. ILLY'RICA (Sibth. and Smith, fl. græc. t. 386.) pubescent; stem tufted at the base, but dichotomously fastigiate at the top; leaves linear, 3-nerved, awl-shaped; calyx 5-angled, bractless; petals obovate, white, with 3 dark purple dots at the base of each. ♃. H. Native of Greece, Illyria, and Calabria. Saponària Illýrica, Lin. mant. p. 70.—Ard. spec. 2. p. 24. t. 9.—Cup. panph. 2. t. 22. Flowers fastigiate, white, each petal with 3 purple spots at the base, entire. Anthers blue.

Illyrian Gypsophila. Fl. May, June. Pl. ½ foot.

23 G. STEVE'NI (Fisch. in litt. Schrank. hort. mon. t. 32.) flowers panicled; stem diffuse; leaves linear-lanceolate, grassy, keeled, grey; petals broad-linear, obtuse, entire. ♃. H. Native of Iberia in stony places about Tiflis. G. rèpens, Bieb. fl. taur. 1. p. 318. exclusive of the synonymes. Flowers whitish.

Steven's Gypsophila. Fl. Ju. Aug. Clt. 1818. Pl. 1 to 2 ft.

24 G. GRAMÍNEA (Sibth. and Smith, prod. 1. p. 279.) flowers panicled; stem almost naked; radical leaves linear, tufted; petals emarginate; calyx pubescent, with roughish edges. ♃. H. Native on the mountains of the Morea. Radical leaves numerous, grassy, pale-green, with scabrous margins. Flowers rose-coloured.

Grassy-leaved Gypsophila. Fl. July, Aug. Clt. 1810. Pl. prostrate.

25 G. ARMERIOÌDES (Ser. mss. and D. C. prod. 1. p. 353.) stems tufted, stiff; flowers dichotomously-panicled; peduncles and calyxes beset with glandular hairs; calyx striated, with acutish segments, which have scarious margins; petals spatulate, almost entire; leaves linear, bluntish, firm, length of internodes. ♃. H. Native of Troada. Habit of *Diánthus Armèria*. Flowers pink or white.

Armeria-like Gypsophila. Fl. July. Pl. 1 foot.

26 G. PUBE'SCENS; flowers panicled, small; branches of panicle trichotomous, divaricate; stamens longer than the corolla; calycine segments obtuse, dotted, scabrous; leaves linear-lanceolate, flat, clothed with glandular hairs; stem prostrate, also beset with glandular hairs. ♃. H. Native of Calabria. G. Arróstii β, pubéscens, Guss. pl. rar. p. 160. Flowers small.

Pubescent Gypsophila. Fl. July. Pl. prostrate.

27 G. TENUIFÒLIA (Bieb. fl. taur. 1. p. 319. suppl. 296.) stems somewhat panicled, few-flowered; petals emarginate, twice as long as the calyx and stamens; leaves awl-shaped, filiform, glabrous. ♃. H. Native about the Caucasian ports. Root twisted, very thick, and with the leaves similar to those of *Plantàgo subulàta*. Petals rose-coloured, inflexed, emarginate.

Fine-leaved Gypsophila. Fl. July, Aug. Clt. 1824. Pl. 1 ft.

28 G. RE'PENS (Lin. amœn. 3. p. 23. spec. 581.) stems somewhat panicled, few-flowered; stamens shorter than the emarginate petals; leaves linear, glabrous. ♃. H. Native of the Alps of Europe, as well as in the Pyrenees, among stones by road sides and along the borders of torrents. Lam. ill. t. 375. f. 2. Jacq. fl. aust. 5. p. 4. t. 407. Petals white, streaked with green or red. Root creeping. This plant resembles a species of *Cerástium* or *Arenària*.

Creeping Gypsophila. Fl. July, Sept. Clt. 1774. Pl. ½ ft.

29 G. PATRÍNII (Ser. mss. and D. C. prod. 1. p. 353.) stems somewhat panicled, few-flowered; segments of calyx bluntish; petals equal in length with the stamens; leaves very narrow, thick, three times longer than the space of the stem between the leaves. ♃. H. Native of Siberia in fields at Irtish about Oustka-Menogorik. Flowers pink.

Patrin's Gypsophila. Fl. July. Pl. 1 foot.

30 G. DU'BIA (Willd. enum. suppl. p. 23.) petals obovate, emarginate; stamens shorter than the campanulate corolla; leaves linear, rather fleshy. ♃. H. Native — ? Perhaps G. rèpens, Lin. ex Treveranus. Flowers white.

Doubtful Gypsophila. Fl. May, June. Clt. 1815. Pl. ½ foot.

31 G. PROSTRA'TA (Lin. spec. 1. p. 581.) stems diffuse, panicled; pistils longer than the emarginate petals; stamens shorter than the corolla; leaves linear-lanceolate, smooth. ♃. H. Native on the Alps of Europe? Sims, bot. mag. t. 1281.—Pluk. alm. 22. t. 75. f. 2. Flowers white or pale rose-coloured. Like *G. rèpens*.

Prostrate-stemmed Gypsophila. Fl. July, Sep. Pl. prostrate.

32 G. ROKE'JEKA (Del. fl. ægyp. 87. t. 29. f. 1.) stem erect; branches weak, panicled, dichotomous; peduncles capillary; petals large, painted with lines; radical leaves ovate, oblong, upper ones linear. ⊙? ♃? H. Native of Egypt near Soueys. Rokéjeka, Forsk. decr. 90. no. 77. Flowers white striped with violet. Capsules globose. Seeds hemispherical, black, rough.

Rokejeka Gypsophila. Pl. 1 to 2 feet.

33 G. THESIIFÒLIA (Ser. mss. and D. C. prod. 1. p. 354.) stems numerous, somewhat panicled, few-flowered, straight; petals almost entire, equal in length with the stamens; leaves linear, very narrow, glabrous. ♃. H. Native of Siberia about the mines of Schamanaikha (Patrin.) Flowers pink.

Thesium-leaved Gypsophila. Fl. July. Pl. ½ foot.

34 G. MURA'LIS (Lin. amœn. 3. p. 24. spec. 583.) stem dichotomously-panicled, much branched; flowers axillary, solitary; petals crenated; leaves linear, flat, length of pedicels. ♂. H. Native of France, Switzerland, Germany, Sweden, and Tauria, by road sides and in corn-fields. Sibthorp gathered it on the Bythinian Olympus. Lam. ill. 375. G. serotìna, Hayne. Flowers small, pinkish. This is a small biennial upright bushy herb.

Wall Gypsophila. Fl. July, Oct. Clt. 1739. Pl. ½ to 2 ft.

35 G. COMPRE'SSA (Desf. atl. 1. p. 343. t. 97.) stem erect, panicled, compressed; pedicels pubescent; flowers terminal; calyxes elongated, striated, with acute lobes; leaves awl-shaped, lanceolate, striated. ⊙. H. Native of Barbary in sandy corn-fields. Petals white, variegated on the under surface with violet-coloured veins, entire.

Compressed-stemmed Gypsophila. Pl. 1 foot.

36 G. CERASTIOÌDES (D. Don, prod. fl. nep. p. 213.) stems erect, 4-sided, pilose; pedicels and calyxes pilose; flowers corymbose; lobes of calyx lanceolate, acute, girded by a membranaceous fringed margin; petals emarginate; leaves pilose on both surfaces, as well as ciliated on the margins, radical ones spatulate on long footstalks, mucronulate, cauline ones obovate, almost sessile. ♃. H. Native of Nipaul in Gosaingsthan. Flowers white.

Chick-weed-like Gypsophila. Pl. ¼ to ½ foot.

SECT. II. PETRORHA'GIA (probably from πετρος, *petros*, a rock, and ρηγνυμι, *rhegnumi*, to break; because the plants grow on rocks, which they break with their roots.) Ser. mss. and D. C. prod. 1. p. 354. Calyxes furnished at their base with 2 or 4 opposite scarious scales.

37 G. GLOMERA'TA (Pall. ined. taur. ex Bieb. fl. taur. 1. p. 321. suppl. 297.) flowers in clustered heads; stems straight, simple, herbaceous; leaves linear, triquetrous from being keeled, rather scabrous; stamens rather longer than the retroflexed obovate petals; bracteas of calyx scariose. ♃. H. Native of Tauria and Caucasus in stony places. Flowers white.

Glomerate-flowered Gypsophila. Fl. July, Aug. Clt. 1818. Pl. 1 foot.

38 G. CAPITA'TA (Pall. ex Bieb. fl. taur. 1. p. 321.) stem suffruticose, much branched; branches dichotomous, scabrous, compressed, angular; flowers capitate; stamens exserted; leaves lanceolate, smooth, glaucous. ♄. F. Native of Asia Minor. G. glomeràta β, capitàta, D. C. prod. 1. p. 354. Flowers white.

Capitate-flowered Gypsophila. Pl. 1 to 2 feet.

39 G. SAXI'FRAGA (Lin. spec. 584.) stems numerous, erect, stiff; flowers panicled, terminal; calyx girded with 4 unequal lanceolate scales; leaves linear, stiff. ⊙. H. Native of the south of Europe on rocky or stony places. Smith, exot. bot. 2. t. 90. Diánthus saxífraga, Lin. spec. ed. 1. p. 413.—Barrel. icon. t. 998. Roots fibrous. Petals rose-coloured, emarginate.

Var. β, *capillàcea* (Ser. mss. and D. C. prod. 1. p. 354.) leaves and stems capillary, elongated. G. filifórmis, Lam.

Var. γ, *hispídula* (Ser. mss. and D. C. l. c.) leaves and stems rather hispid. Native of Vallais.

Saxifrage-like Gypsophila. Fl. July, Aug. Clt. 1774. Pl. ½ foot.

40 G. RI'GIDA (Lin. amœn. 3. p. 24.) stems numerous, moderately branched; calyx girded by 4 equal ovate scales or bracteas; petals emarginate; leaves linear erect. ♃. H. Native of rocky dry places in the south of Europe. Found on the Bithynian Olympus by Dr. Sibthorp. Root woody. Stem spreading a span long, more or less downy on the upper part. Leaves nearly pressed close to the stem, dilated and membranous at the base. Flowers solitary, rarely in pairs, terminal, pale rose-coloured. Teeth of calyx mucronate. Styles short.

Rigid Gypsophila. Fl. Jul. Aug. Clt. 1769. Pl. prostrate.

41 G. DIANTHOÌDES (Sibth. et Smith, fl. græc. t. 383.) leaves

linear, obtuse; flowers capitate; bracteas crowded, pointed, membranous; petals obtuse, quite entire. ♃. H. Native of Candia. Flowers 4-6 in a head. Teeth of calyx acute. Petals white, variegated on the under surface with 3 red lines.

Pink-like Gypsophila. Fl. July. Pl. 1 foot.

42 G. multicaùlis (Poir. suppl. 2. p. 875.) stems numerous, straight, simple; leaves pressed to the stem and sheathing at the base, awl-shaped, nervose; flower terminal, solitary, sessile. ♃. H. Native of Switzerland. Perhaps a variety of *G. saxífraga*. Flowers pink.

Many-stemmed Gypsophila. Fl. July, Aug. Pl. ½ foot.

Cult. The species of *Gypsóphila* are for the most part ornamental plants, and are well adapted for flower-borders or rock-work, particularly the smaller ones for the latter purpose. A chalky soil suits them best, and cuttings planted under a hand-glass root freely, but the best mode of increasing them is by seeds, which ripen in abundance. The annual species only require to be sown in the flower-border or on rock-work in the beginning of April.

II. BA'NFFYA (Banffy the name of some botanist known to Baumgarten.) Baumg. fl. trans. ex Spreng. neue. entd. 1. p. 300. D. C. prod. 1. p. 355.

Lin. syst. *Decándria, Digýnia.* Calyx tubular, deeply 5-parted, permanent. Petals 5, undivided. Stamens 5 fertile, and 5 sterile. Pistils 2. Capsules 1-celled, few-seeded.—Scarcely differing from *Gypsóphila*, unless in the tubular calyx, and number of seeds.

1 B. petræ'a (Baumg. l. c.) stems herbaceous, straight, tufted; leaves linear, obtuse, keeled; bracteas minute; calyx coloured. ♃ ? H. Native of Transylvania in the Alps of Dinaria. Gypsóphila Transylvánia, Spreng. syst. append. p. 179. Flowers white or red.

Rock Banffya. Fl. June, July ? Pl. ½ to 1 foot.

Cult. This plant is well adapted for rock-work. It may be either propagated by seeds or by cuttings, which will root freely if planted under a hand-glass.

III. DIA'NTHUS (from διος, *divine*, and ανθος, *anthos*, a flower; in allusion to the exquisite fragrance of the blossoms of most of the species, as well as from the unrivalled neatness and brilliancy of the flowers.) Lin. gen. no. 770. D. C. prod. 1. p. 355.

Lin. syst. *Decándria, Digýnia.* Calyx tubular, 5-toothed, furnished at the base with 2-4-6 opposite imbricate scales. Petals 5, with long claws. Stamens 10. Styles 2. Capsules 1-celled. Seeds flat, convex on one side and concave on the other, peltate. Embryo scarcely curved. Evergreen mostly glaucous herbs. The *Pink*, *Carnation*, *Clove*, *Deptford Pink*, and *Sweet-William*, give a very good idea of this genus.

Sect. I. Armeria'strum (*Armeria* is the Latin for Sweet-William, and *astrum*, an affixed signification, in allusion to the plants agreeing with *Sweet-William* in having aggregate flowers). Ser. mss. and D. C. prod. 1. p. 355. Flowers capitate or corymbose, sessile, or stalked.

§ 1. *Bracteas ovate, blunt.*

1 D. pro'lifer (Lin. spec. 587.) flowers aggregate, capitate; calyx scales ovate, awnless, higher than the tube; leaves serrulated. ⊙. H. Native throughout Europe by the margins of woods and fields. In England in gravelly places, but rare. In Selsey island, Sussex; meadows between Hampton Court and Teddington; in the border of a field opposite St. Austin's gates, Norwich; in a marl pit at Landridge hill, Hanley, Worcestershire. Smith, engl. bot. t. 956. Fl. dan. 221. Túnica prolífera, Scop. carn. no. 503. Flowers small, pale-red. Seeds ovate, flat. Heads of flowers involucrate.

Var. β, diminùtus (D. C. fl. fr. 5. p. 741.) flowers generally solitary. Diánthus diminùtus, Lin. spec. 587. fl. græc. 394.

Proliferous Pink. Fl. July, Aug. England. Pl. 1 to 1½ ft.

2 D. spinòsus (Desf. in ann. mus. 1. p. 198. t. 16. f. 1.) shrubby, procumbent; flowers capitate, sessile; leaves stiff, awl-shaped, pungent. ♄. F. Native of Persia. Petals linear, of a very pale rose-colour. Habit of Drỳpis spinòsa, and with the flowers about the same size. Calycine scales equal in length to the tube.

Spinose-leaved Pink. Fl. June, July. Shrub ½ foot.

§ 2. *Bracteas lanceolate, acute. Calyx striated, villous. Flowers scentless.*

* *Herbaceous. Annual.*

3 D. Arme'ria (Lin. spec. 586.) flowers aggregate, in loose bundles; scales of calyx 2, lanceolate-awl-shaped, equal in length with the tube; leaves lanceolate-awl-shaped, and are as well as calyx hairy; petals beardless. ⊙. H. Native in pastures and about hedges on a gravelly soil in many parts of Europe. In several parts of Britain. Smith, engl. bot. t. 317. Curt. fl. lond. 134. fl. dan. t. 230. D. hírtus, Lam. fl. fr. 2. p. 533. but not of Vill. Flowers speckled with pink and white, only one open at a time in each tuft.

Var. β; flowers solitary.

Armeria or Deptford Pink. Fl. Jul. Aug. Brit. Pl. 1 foot.

4 D. corymbòsus (Sibth. and Smith, fl. græc. t. 395.) flowers somewhat aggregate; calycine scales 2, lanceolate, villous, shorter than the tube; stem branched, divaricating, many-flowered, pubescent. ⊙. H. Native of Asia Minor. Flowers rose-coloured above and spotted, but yellowish-green below.

Corymbose-flowered Pink. Fl. July. Pl. 2 feet.

5 D. armerioìdes (Rafin. in Desv. journ. bot. 1814. vol. 2. p. 269.) flowers aggregate; calycine scales longer than the calyx, striated, scabrous; leaves linear, scabrous, shorter than the spaces of the stem between the leaves; stem simple, upper part rough. ⊙. H. Native of North America in meadows in New Jersey. Flowers red.

Armeria-like Pink. Fl. Jul. Aug. Clt. 1826. Pl. 1 foot.

* * *Herbaceous. Perennial.*

6 D. pseu'do-Arme'ria (Bieb. fl. taur. 1. p. 323. suppl. 297.) flowers in dense, aggregate bundles; calycine scales ovate-awl-shaped, equal in length to the tube; petals bearded; leaves awl-shaped, strict, beset with scabrous pubescence. ♃. H. Native of Tauria in dry stony places. Sims, bot. mag. t. 2288. D. barbàtus, Pall. ined. Taur. Very like *D. Armèria*, but is covered all over with hoary down, not hairy. Flowers rose-coloured, pale beneath.

Var. β; bracteas divaricating; calyx short. This is a monstrosity.

False Armeria Pink. Fl. July, Aug. Clt. 1820. Pl. 1 ft.

7 D. díscolor (Sims, bot. mag. t. 1162.) flowers aggregate; calycine scales longer than the tube, striated, rough; leaves green, linear, shorter than the internodes; stem simple, branched at the top, rough. ♃. H. Native of Caucasus. Flowers purple, pale beneath. Perhaps the same as the preceding.

Two-coloured-flowered Pink. Fl. Jul. Sept. Clt. 1803. Pl. 1 foot.

8 D. Carolinia'nus (Walt. fl. car. 140.) flowers aggregate, on long stalks; calycine scales one-half shorter than the tube. ♃? H. Native of Carolina. Flowers red.

Carolinian Pink. Fl. June, Sept. Clt. 1811. Pl. ¾ foot.

§ 3. *Bracteas ovate or lanceolate; calyx hardly striated, glabrous. Flowers fragrant.*

* *Herbaceous perennial. Flowers large, aggregate. Leaves broadish-lanceolate.*

9 D. BARBA'TUS (Lin. spec. 586.) flowers aggregate, in bundles; calycine scales ovate-awl-shaped, equal in length to the tube; petals bearded; leaves lanceolate, nerved. 2. H. Native of the South of France and Germany in gravelly or sandy places. Flowers very variable in colour, from dark purple to white or variegated or speckled, single and double.

Sweet-William is a very old inhabitant of the gardens, and was very much esteemed in the time of Gerarde for its beauty, to deck up the bosoms of the beautiful, and garlands and crowns for pleasure. The varieties are endless, but as the plant has never been treated as a leading florist's flower, they have not been named or improved. A hybrid variety called the *mule* or *Fairchild's Sweet-William* is supposed to be produced from the seeds of the *carnation* impregnated with *Sweet-William*, but we think it more likely to be the double variety of *D. Poiretiànus*.

Var. β, *latifòlius* (Ser. mss. and D. C. prod. 1. p. 356.) leaves ovate-lanceolate; flowers aggregate.

Var. γ, *paniculàtus* (Ser. mss. and D. C. l. c.) leaves ovate-lanceolate; stem panicled.

Var. δ, *pedunculòsus* (Ser. mss. and D. C. l. c.) leaves lanceolate; flowers stalked, loose.

Var. ε, *dentòsus* (Fisch. in litt.) this plant does not appear to differ from some varieties of *D. barbàtus*. Native of Siberia?

Bearded Pink or Sweet-William. Fl. June, July. Clt. 1573. Pl. 1 foot.

10 D. LATIFÒLIUS (Willd. enum. p. 466.) flowers aggregate, racemosely-corymbose; calycine scales ovate-lanceolate, at last exceeding the length of the calyx; leaves oblong-lanceolate. 2. H. Native? Sweet, fl. gard. t. 2. The habit of this plant is referable to *D. barbàtus*, but the leaves are broader and the flowers are disposed in corymbose racemes, and double the size. Perhaps it is the var. γ of *D. barbàtus*. Flowers pink.

Broad-leaved Pink. Fl. July, Aug. Clt.? Pl. 1½ foot.

11 D. CARIOPHYLLOÌDES (Schult. obs. 78.) flowers aggregate, in bundles; calycine scales ovate, mucronate, short; petals toothed, beardless; leaves glaucous, broad, channelled, without nerves, connate and ciliated at the base. 2. H. Native? Flowers red, sweet-scented.

Clove-like Pink. Fl. July, Aug. Clt. 1817. Pl. 1½ foot.

12 D. SILENOÌDES (Poir. dict. 4. p. 514.) stem? calycine scales ovate-lanceolate; leaves somewhat aggregate, rather obovate, covered with glandular dots, ciliated. 2. H. Native? Flowers probably red. This plant is hardly known.

Catchfly-like Pink. Fl. July. Pl. 1 foot.

13 D. AGGREGA'TUS (Poir. suppl. 4. p. 124.) flowers aggregate, sessile; calycine scales broad, mucronate, with membranaceous margins, longer than the tube; leaves lanceolate, many-nerved. 2. H. Native? Perhaps only a variety of *D. barbàtus*. Flowers purple.

Aggregate-flowered Pink. Fl. Ju. Jul. Clt. 1817. Pl. 1 ft.

14 D. JAPO'NICUS (Thunb. fl. jap. 183. t. 23.) flowers aggregate in bundles; calycine scales lanceolate, acute, ciliated, one-half shorter than the tube; leaves ovate, short, nerveless. 2. F. Native of Japan. Habit of *D. barbàtus* var. pedunculòsus, but the leaves are very short. Flowers pink or dark red.

Japan Pink. Fl. July, Sept. Clt. 1804. Pl. 1 foot.

15 D. CHINE'NSIS (Lin. spec. 588.) stem branched, flowers solitary or somewhat aggregate; calycine scales linear-lanceolate, leafy, cuspidate, spreading, equal in length with the tube; petals toothed, purple, or white, spotted with red; leaves lanceolate, pale-green. ♂. H. Native of China. Mill. icon. 81. f. 2. Curt. bot. mag. 28. Flowers very variable in colour, but usually reddish, and are either single or double.

China Pink. Fl. July, Sept. Clt. 1713. Pl. ½ to 1 foot.

16 D. POIRETIA'NUS (Ser. mss. and D. C. prod. 1. p. 360.) flowers terminal, corymbose, lower ones solitary; calycine scales awl-shaped at apex, much shorter than the tube; leaves oblong-lanceolate, with rough margins. 2. H. Native? D. corymbòsus, fl. purpùreo, Poir. suppl. 4. p. 124. but not of Sibth. and Smith. Flowers purple. There is a variety of this plant with double flowers, which is probably *D. hýbridus* or *mule pink* of the gardens. See *D. barbàtus*, no. 9.

Poiret's Pink. Fl. June, July. Clt. 1816. Pl. ½ to ¾ foot.

17 D. PULCHE'LLUS (Schrad.) flowers terminal, aggregate, rarely solitary; calycine scales ovate-lanceolate, cuspidate, equal with or longer than the tube; lowest leaves obovately-lanceolate, upper ones lanceolate, all ciliated, particularly towards the base. 2. H. Native? Flowers purple. Leaves green.

Pretty Pink. Fl. June, July. Clt. 1827. Pl. ½ to ¾ foot.

** *Herbaceous, perennial. Flowers capitate, usually involucrate. Leaves narrow, pungent.*

18 D. PINIFÒLIUS (Sibth. and Smith, fl. græc. prod. 1. p. 284.) flowers aggregate, capitate; bracteas obcordate, awned, equal in length with the head of flowers; calycine scales shorter than the tube; leaves setaceous. 2. or ♄. H. Native of Thrace and about Constantinople.—Tab. icon. 668. f. 13. Very like *D. juniperìnus* of Lin. trans. 2. p. 303. Flowers pink.

Pine-leaved Pink. Fl. July. Pl. 1 foot.

19 D. CEPHALÒTES (Ser. mss. and D. C. prod. 1. p. 356.) flowers almost sessile, capitate; calycine scales imbricated, mucronulate at top and spreading, a little shorter than the tube; leaves elongated, narrow; stem angular, rather hairy. 2. H. Native of? D. capitàtus, Poir. dict. 4. p. 124. Flowers red.

Headed Pink. Fl. June, Oct. Clt. 1823. Pl. 1 to 2 feet.

20 D. CAPITA'TUS (D. C. cat. hort. monsp. 1813. p. 103.) plant somewhat glaucous; flowers aggregate, capitate; calycine scales ovate, awned, shorter than the tube; involucrum ovate, awned, length of the head of flowers; leaves linear-lanceolate, nerveless; upper ones dilated at the base. Flowers dark red. 2. H. Native in grassy places of Tauria and Caucasus. D. atrorùbens, Bieb. fl. taur. 1. p. 324. but not of Allioni. D. Carthusianòrum, Pall.

Capitate-flowered Pink. Fl. June, Oct. Clt. 1817. Pl. 1½ ft.

21 D. POLYMO'RPHUS (Bieb. fl. taur. 1. p. 324. suppl. 298.) plant dark green; flowers sessile, capitate; involucrum short; calycine scales 6, ovate, acute, not above half as long as the calyx; leaves narrow, scabrous. 2. H. Native of Tauria and Caucasus, and on the Lower Volga, abundant. D. atràtus, Beaupre in litt.? Flowers pale red.

Polymorphous Pink. Fl. Ju. Oct. Clt. 1817. Pl. 1 foot.

22 D. DIU'TINUS (Kit. in Link. enum. 1. p. 419.) plant green; flowers paniculately-fastigiate and solitary, stalked; calycine scales ovate, acute, not above half the length of the calyx; leaves narrow, scabrous. 2. H. Native of Hungary. Sweet, fl. gard. icon. ined. Flowers pale red.

Durable or Day Pink. Fl. June, Aug. Clt. 1816. Pl. 1 ft.

23 D. BALBI'SII (Ser. mss. and D. C. prod. 1. p. 356.) plant glaucous; flowers almost sessile, in capitate bundles; calycine scales lanceolate, spreading a little, shorter than the tube; leaves lanceolate-linear; stem angular. 2. H. Native near Genoa, Sweet, fl. gard. n. s. t. 23. D. glaucophýllus, Horn. ex herb. Balb. Leaves lanceolate-linear, not unlike those of the *carnation*. Flowers red.

Var. β, *paniculàtus* (Ser. mss. and D. C. l. c.) flowers in panicled bundles.

Balbis's Pink. Fl. Aug. Oct. Clt. 1817. Pl. 1 to 2 feet.

24 D. GIGANTE'US (D'Urv. enum. pl. archip. p. 45.) plant green; flowers numerous, sessile, disposed in hemispherical

heads, supported at the base by leafy bracteas; calycine scales ovate, acuminated, pressed to the calyx, much shorter than the tube; leaves linear, very long, connate at the base a long way; stem round. ♃. H. Native on the shores of Bulgaria on rocks by the sea-side. Sweet, fl. gard. 208. Flowers of a rusty purple colour.

Giant Pink. Fl. July, Oct. Clt. 1828. Pl. 2 to 4 feet.

25 D. FERRUGI'NEUS (Lin. mant. 563.) flowers aggregate; involucres and calycine scales scarious, brown, oblong, awned, both a little shorter than the calyx; leaves linear, connate at the base. ♃. H. Native in the Pyrenees about Narbonne. —Barrl. icon. t. 497. Mill. dict. icon. 1. t. 81. f. 1. Perhaps a variety of *D. Carthusianòrum*. Petals bifid; segments 3-toothed, rufous on the under surface and yellow on the upper surface.

Ferrugineous-petalled Pink. Fl. Jul. Sept. Clt. 1756. Pl. 1 ft.

26 D. CARTHUSIANÒRUM (Lin. spec. 586.) flowers aggregate, capitate, stalked; calycine scales 4, ovate, awned, shorter than the tube; involucre oblong, awned, shorter than the head of flowers; petals crenate, bearded; leaves linear, 3-nerved. ♃. H. Native in uncultivated and sterile places almost throughout the whole of South Europe. Lois. prus. 37. f. 7. Smith, fl. græc. t. 392. Flowers red.

Carthusians' Pink. Fl. July, Aug. Clt. 1573. Pl. 1 foot.

27 D. ATRORU'BENS (All. ped. no. 1548. Jacq. icon. rar. 3. t. 467.) flowers sessile in aggregate heads; calycine scales ovate, awned, shorter than the tube; involucre ovate, awned, shorter than the head of flowers; petals bearded? leaves linear, 3-nerved. ♃. H. Native of Vallais and Austria. Flower small, dark red.

Var. β, mìnus (Ser. mss. and D. C. l. c.) almost stemless; flowers aggregate. Native of St. Gothard.

Var. γ, anisópodus (Ser. mss. and D. C. l. c.) flowers aggregate, stalked and sessile. D. atrorùbens, var. prólifer, Schleich. pl. helv. Native of Vallais, also about Paris. Flowers dark red.

Dark-red-flowered Pink. Fl. July, Aug. Clt. 1802. Pl. 1 ft.

28 D. RUTHE'NICUS (Rœm. in Poir. suppl. 4. p. 131.) flowers solitary or aggregate; calycine scales involucrate, lanceolate, acute, shorter than the tube; leaves linear, acute. ♃. H. Native of Russia. D. pàtens, Horn.? Flowers purplish.

Russian Pink. Fl. June, July. Clt. 1816. Pl. 1 foot.

29 D. A'SPER (Willd. enum. p. 466.) flowers aggregate, in bundles; calycine scales ovate-lanceolate, pointed, shorter than tube; petals bearded, acutely toothed; leaves linear-lanceolate, 3-5-nerved, serrulated, and are scabrous as well as stem. ♃. H. Flowers red, pale beneath.

Var. α, angustifòlius (Ser. mss. and D. C. prod. 1. p. 357.) few-flowered; leaves linear, acute. Native of Vallais. D. scàber, Schleich. ex Sut. fl. helv. 1. p. 259. D. serràtus β, D. C. fl. fr. 5. p. 601.

Var. β, collìnus (Ser. mss. and D. C. l. c.) many-flowered; leaves linear-lanceolate. Native in Hungary. D. collìnus, Waldst. et Kit. hung. 1. p. 36. t. 38. Sal. par. lond. t. 62. D. umbellàtus, D. C. cat. hort. monsp. p. 104.

Var. γ, serràtus (Ser. mss. and D. C. l. c.) stems 1-3-flowered; flowers larger than the preceding varieties; leaves linear. Native of the Eastern Pyrenees. D. serràtus, Lapeyr. abr. 241. and D. C. fl. fr. 5. p. 601. var. α.

Rough Pink. Fl. July, Sept. Clt. α 1817, β 1800. γ 1817. Pl. ¾ foot.

* * * *Shrubby. Flowers aggregate.*

30 D. ARBÒREUS (Lin. spec. 590.) stem shrubby; flowers aggregate; claws of petals very long; calycine scales numerous, mucronulate, closely imbricated, very short; leaves linear-glaucous. ♄. G. Native of Crete on rocks by the sea-side. Lodd. bot. cab. t. 459. Smith, fl. græc. t. 406. Flowers large, pink, palest beneath. Petals pilose at the base, and with 3 deeper coloured lines.

Tree Pink. Fl. June, Aug. Clt. 1820. Shrub 1 to 2 feet.

31 D. ARBU'SCULUS (Lindl. bot. reg. t. 1086.) flowers panicled, aggregate, solitary; leaves lanceolate, and are as well as shrubby stem glabrous; calycine scales 4, broad-ovate, leafy, erect; petals toothed. ♄. G. Native of China. Flowers single or double, of a rich purple crimson, inner petals spotted at the base.

Little-tree Pink. Fl. Jul. Oct. Clt. 1824. Shrub 1½ foot.

32 D. ACIPHY'LLUS (Sieb. ex sicc. D. C. prod. 1. p. 358.) shrubby; flowers panicled, few, somewhat aggregate; bracteas obovate, very blunt, somewhat obcordate, and very acutely mucronate, one-half shorter than the calyx; petals entire or 2-lobed; leaves rather distich, linear, pungent, not striated, numerous, with the margins scarcely serrulated. ♄. F. Native of Crete. Flowers red?

Pointed-leaved Pink. Fl. July, Aug. Shrub 1 foot.

33 D. JUNIPERI'NUS (Smith, in Lin. trans. 2. p. 303.) stem shrubby; flowers aggregate, rather corymbose; scales of calyx 4, obovate, mucronate, one-half shorter than the tube; leaves awl-shaped, pungent. ♄. F. Native of Greece. Flowers red. Petals deeply crenate.

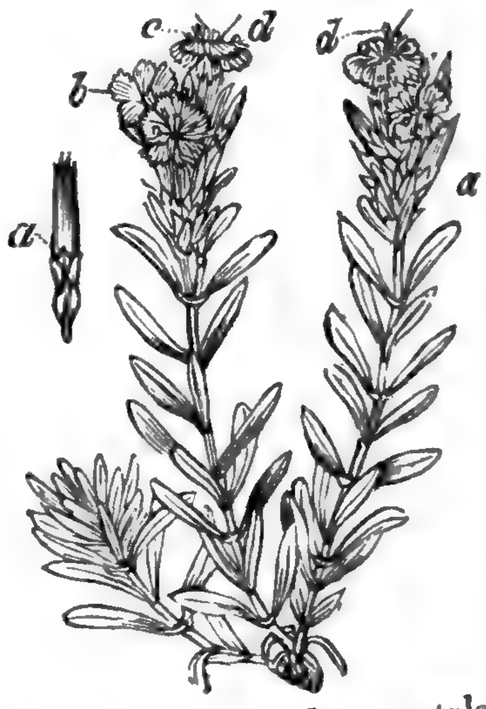
Juniper-like Pink. Fl. July. Shrub ½ foot.

34 D. RUPI'COLA (Biv. Bern. sicul. cent. 1. p. 31.) flowers aggregate in bundles, bracteate; calycine scales imbricate, in 3 series, short, ciliated, outer ones bristly awl-shaped, very long; petals bearded; leaves thickish, linear, semicylindrical, glaucous, stiff, very entire, connate at the base. ♃. F. Native in the fissures of rocks in Sicily and Calabria. Flowers rose-coloured, fragrant. D. Bisignàna, Tenor. cat. giard. S. Bisig. 1809. p. 18. fl. neop. t. 39. D. involucràtus, Poir. suppl. 4. p. 132.

Rock-inhabiting Pink. Fl. May, Aug. Clt. 1820. Sh. 1 ft.

35 D. FRUTICÒSUS (Lin. spec. 591.) stem shrubby; flowers aggregate; claws of petals equal in length with the calyx; calycine scales numerous, mucronulate, closely imbricate, very short; leaves obovate, lanceolate, obtuse. ♄. F. Native of Crete. Smith, fl. græc. t. 407. Tourn. itin. 1. p. 183. t. 9. Flowers dark in the middle, rose-coloured in the circumference, and white and pilose at the base.

FIG. 78.



Shrubby Pink. Fl. July, Sept. Clt. 1815. Shrub 1 to 2 feet.

36 D. SUFFRUTICÒSUS (Willd. enum. 466.) stem suffruticose; flowers somewhat aggregate; calycine scales ovate, awl-shaped, thrice as short as the tube; petals beardless; leaves linear-lanceolate, and are scabrous as well as the stem. ♄. F. Native? Bracteas linear-reflexed. Nerve of the calycine scales protruding and reflexed. Corolla large, pink. Bracteas reflexed.

Subshrubby Pink. Fl. June, July. Clt. 1804. Shrub 1½ ft.

SECT. II. CARYOPHY'LLUM (from *καρυοφυλλον*, the Greek name of the clove, in allusion to the flowers of *D. caryophýllus* smelling like the clove). Ser. mss. and D. C. prod. 1. p. 357. Flowers either panicled or solitary.

* *Stem few or many-flowered, panicled, scattered. Petals crenate or toothed.*

37 D. CAMPE'STRIS (Bieb. fl. taur. 1. p. 326.) stem branched, rather hairy; branches 1-flowered; calycine scales 4, ovate, acute, one-half shorter than the calyx; leaves awl-shaped, 3-

nerved. ♃. H. Native of Tauria in sandy pastures. D. bícolor, Adams. Very like *D. ásper*. Flowers deep purple, about the size of those of *D. deltoìdes*. Petals villous at the throat.

Field Pink. Fl. July, Aug. Clt. 1815. Pl. ½ to ¾ foot.

38 D. ALPE'STRIS (Balb. act. acad. taur. 7. p. 11. t. 1.) flowers generally in pairs; calycine scales 4, two inner ones broad, mucronate; petals emarginate. ♃. H. Native in alpine pastures of Europe. Perhaps a variety of *D. nítidus* or *ásper*. Flowers red.

Alp Pink. Fl. July. Clt. 1817. Pl. ½ to ¾ foot.

39 D. NÍTIDUS (Walds. et Kit. pl. hung. 2. p. 209. t. 191.) flowers disposed somewhat in bundles, two together; calycine scales ovate, awned, shorter than the tube; petals deeply crenated; stem decumbent, flexuous, scabrous; leaves linear, lanceolate, obtuse. ♃. H. Native of the Carpathian mountains at the termination of the beech trees. Flowers red.

Shining Pink. Fl. July, Aug. Clt. 1822. Pl. ½ foot.

40 D. RAMOSI'SSIMUS (Poir. suppl. 4. p. 130.) flowers solitary; calycine scales 4, ovate, mucronate, shorter than the cylindrical tube; leaves flat, narrow; stem weak, much branched. ♃. H. Native of Tartary. Flowers white.

Much-branched Pink. Fl. July, Aug. Pl. ½ foot.

41 D. DIFFU'SUS (Sibth. and Smith, fl. græc. t. 396.) flowers somewhat corymbose; calycine scales 2, furrowed, mucronate, one-half shorter than the tube; stems diffuse, ascending, smoothish. ♃. H. Native of the island of Cyprus. Flowers usually twin, rose-coloured above and hairy at the base, reddish beneath and yellowish-green at the base.

Var. β, graminifòlius (Presl. ex Spreng. syst. append. p. 179.) leaves narrow. ♃. H. Native of Sicily.

Diffuse-stemmed Pink. Fl. July, Aug. Clt. 1820. Pl. ½ ft.

42 D. ATTENUA'TUS (Smith, in Lin. trans. 2. p. 301.) stem branched at the base; flowers solitary; calycine scales generally 6, short, lanceolate, acuminated, with membranaceous margins; calyx long, tapering at the top; petals crenated; claws exceeding the calyx; leaves awl-shaped. ♃. H. Native of the south of France by the sea-side. D. Lusitánicus, Brot. fl. lus. 2. p. 173. t. 73. D. longiflòrus, Lam. dict. 4. p. 522. Stems diffuse, much twisted and branched at the base; floriferous stems divided. Flowers flesh-coloured, scentless.

Tapered-calyxed Pink. Fl. July. Clt. 1822. Pl. ½ foot.

43 D. CAUCA'SICUS (Bieb. fl. taur. 1. p. 327.) stem branched, smooth; flowers almost sessile, solitary; calycine scales ovate, awned, erect; shorter than the calyx; leaves awl-shaped, with scabrous margins. ♃. H. Native of Eastern Caucasus in subalpine fields. Sims, bot. mag. 795. This plant differs from *D. campéstris*, in the leaves being less glaucous. The petals are more deeply toothed in the figure in the botanical magazine than they are in the wild plant, and the leaves are more glaucous. Flowers small, deep purple.

Caucasian Pink. Fl. July, Aug. Clt. 1803. Pl. ½ foot.

44 D. HI'RTUS (Vill. dauph. 3. p. 593. t. 46.) flowers generally solitary; calycine scales 6, ovate, awned, much shorter than the calyx; petals crenate, villous at the base; leaves awl-shaped, with scabrous margins. ♃. H. Native on hills in the province of Dauphiny, also in Tauria. D. scàber, Chaix. but not of Thunb. nor Schleich. D. virgíneus, Habl. Perhaps only a variety of *D. attenuàtus*. Flowers pale-red. Stem pubescent, simple or a little branched at the top.

Hairy Pink. Fl. July, Aug. Clt. 1821. Pl. ½ to 1 foot.

45 G. GUTTA'TUS (Bieb. fl. taur. 1. p. 328. suppl. 300.) stem panicled, smooth; flowers solitary; calycine scales 4, ovate, awned, about equal in length to the tube; leaves awl-shaped, nervously striated, scabrous. ♃. H. Native in fields about Odessa, &c. Petals purple, marked with numerous white spots.

Spotted-flowered Pink. Fl. July, Sep. Clt. 1816. Pl. ½ to 1 ft.

46 D. PALLIDIFLÒRUS (Ser. mss. and D. C. prod. 1. p. 358.) stem smooth, loosely panicled; flowers solitary; calycine scales ovate-lanceolate, awned, one-half shorter than the tube; leaves awl-shaped, straight, with scabrous margins. ♃. H. Native in grassy places on the borders of the river Volga. D. pállens, Bieb. fl. taur. 1. p. 325. suppl. 298. but not of Sibth. Flowers pale-red, rather villous at the base.

Pale-flowered Pink. Fl. Ju. Aug. Clt. 1817. Pl. 1 to 2 ft.

47 D. VERSÍCOLOR (Fisch. in Link. enum. 1. p. 420.) stem panicled, many-flowered, smooth; calycine scales cuspidate, spreading, shorter than the tube; petals from the throat pubescent; leaves linear, roughish. ♃. H. Native of the Russian empire. Flowers red above and yellowish beneath?

Party-coloured-flowered Pink. Fl. July, Aug. Clt. 1823. Pl. ½ to 1 foot.

48 D. PUBE'SCENS (Sibth. and Smith, fl. græc. t. 397. prod. 1. p. 286. and D'Urv. enum. 47.) stem ascending, villous, 2-5-flowered; flowers solitary; calyx scales ovate, awl-shaped, twice as short as the tube; calyx striated, villous, clammy, with short teeth; leaves linear, villous. ♂. H. Native of Greece about Athens. Sweet, fl. gard. n. s. t. 27. Flowers deep rose-coloured above, dotted and hairy at the base, but greenish-yellow beneath.

Pubescent Pink. Fl. June, July. Clt. 1820. Pl. ¾ foot.

49 D. PRATE'NSIS (Balb. fl. taur. suppl. 300.) stem suffruticose, panicled; flowers solitary; calycine scales leafy, acuminated, rather pressed to the calyx, outer ones lanceolate, equal in length with the tube, inner ones shorter, ovate at the base; petals acutely toothed, rather bearded; leaves linear-lanceolate, lower ones bluntish, lanceolate. ♃. H. Native of Tauria. D. ochroleùcus, Link. enum. 1. p. 420. but not of Persoon. D. Tatáricus, Fisch. in litt. Flowers pale-yellow, greenish beneath.

Meadow Pink. Fl. July, Sep. Clt. 1820. Pl. ½ to 1 foot.

50 D. MONTA'NUS (Bieb. fl. taur. 1. p. 328.) stem smooth, branched at the top, crowdedly dichotomous; flowers solitary, approximate; calycine scales 6, ovate, awned, shorter than the tube, with a leafy spreading point; leaves linear-awl-shaped, 3-nerved, hairy. ♃. H. Native of Caucasus on grassy mountains. D. díscolor, Sims, bot. mag. 1162.? Flower large, purple, olive-coloured on the under surface. Petals sharply-toothed, villous in the throat.

Mountain Pink. Fl. July, Sep. Clt. 1803. Pl. ¾ to 1 foot.

51 D. OCHROLEU'CUS (Pers. ench. 1. p. 494. but not of Link.) stems elongated, branched; flowers solitary; calycine scales 2, ovate-lanceolate, almost one-half shorter than the tube; segments of calyx narrow, long; petals obovate-linear, almost entire; leaves short, linear-awl-shaped. ♃. H. Native of the Levant. Flower small, pale-yellow, or whitish.

Cream-coloured-flowered Pink. Fl. July, Aug. Pl. 1 foot.

52 D. CARYOPHY'LLUS (Lin. spec. 587.) stem branched; flowers solitary; calycine scales 4, very short, ovate, rather mucronate; petals very broad, beardless; leaves linear-awl-shaped, channelled, glaucous. ♃. H. Native of the south of France; in England on old ruinous walls, particularly on Rochester, Deal, Sandown, and other old castles, plentifully on walls in Norwich, and other old towns. Smith, engl. bot. t. 214. Sims, bot. mag. t. 39. Flowers from single to double, white, yellow, purple, and variegated, indeed of all colours, blue excepted.

Var. β, flòre plèno; flowers double, called *Carnation*, Sims, bot. mag. t. 89.

Var. γ, fructicòsus; called *Tree Carnation*.

Var. δ, imbricàtus (Sims, bot. mag. t. 1622.) branches short; calycine scales numerous, imbricating; called *Wheat-ear Carnation*, or *Clove*. The flowers of the *Clove Gillyflower* or *Clove Pink* are used in pharmacy to give a pleasant flavour and beautiful colour to an officinal syrup. The variety which is officinal surpasses all the others in the richness of its smell; it is of a

dark blood colour, with the stigmas protruding beyond the petals.

Var. ε, cardùinus (Ser. mss.) leaves, calyx, and petals beset with fistular prickles. D. caryophýllus var. Tratt. in flora, 1821. p. 717. icon.

The flowers of the *Clove* are very variable in size and colour, the double varieties of which are called *Carnations*, and the smaller flower of the latter are called *Picotees*.

D. caryophýllus is considered the source whence have sprung the numerous varieties of the *Carnation* and the *Picotee*. The *Carnation* seems to have been unknown to the ancients, at least in its cultivated state, not being mentioned by Pliny, or sung by any of the Roman poets. It has, however, been cultivated from time immemorial in Europe, and is in the highest favour for its beauty and rich spicy odour. It is the principal florist's flower in Germany and Italy, from which countries the British florists procure their best Carnation seed, and also some esteemed varieties. The varieties amounted nearly to 400 named sorts in the beginning of the eighteenth century, and the number has not since diminished. They are arranged in three classes, *flakes*, *bizarres*, and *picotees*. *Flakes* have two colours only, and their stripes large, going quite through the leaves of the flower. *Bizarres*, (Fr. odd, irregular,) are variegated in irregular spots and stripes, and with no less than three colours. *Picotees*, (Fr. piquettee, pricked or spotted,) have a white ground, spotted or pounced with scarlet, red, purple, or other colours. Of each class there are numerous varieties, arranged under farther subdivisions, according to the predominance of the colours, as scarlet-flake, pink-flake, purple-flake, yellow-flake, &c.; scarlet-bizarre, crimson-bizarre, &c.; and purple-picotee, yellow-picotee, &c. *Picotees* are rather smaller flowers than *Carnations*, and are distinguished by the serrated margins of their petals; the colours are principally yellow and white spotted, and the plants are considered hardier than the other sorts. Whatever colours the flowers may be possessed of, they should be perfectly distinct, and disposed in long regular stripes, broadest at the edge of the lamina, and gradually becoming narrower as they approach the claw or base of the petal, there terminating in a fine point. Each petal should have a due proportion of white, *i. e.* one-half, or nearly so, which should be perfectly clear and free from spots. *Bizarres*, or such as only contain two colours upon a white ground, are esteemed rather preferable to flakes, which have but one, especially when their colours are remarkably rich and very regularly distributed. Scarlet, purple, and pink, are the three colours most predominant in the *Carnation*, the two first are seldom to be met with in the same flower, but the two last are very frequently. New varieties are procured from seeds, and thousands of seedlings are annually blown by florists and amateurs, sometimes without one being found worth keeping. Established or approved varieties are continued by layering or cuttings, or as they are commonly called pipings. The soil in which the *Carnation* thrives best is a rich loam rather sandy than otherwise; the climate should be free from extremes of every kind, for which reason they are commonly grown in pots, and protected by a frame during winter, and covered by an awning while in bloom. *Carnations* grow exceedingly well in beds of properly prepared soil, over which frames are placed in winter, and an awning of canvas or bunting when the plants are in blossom.

Propagation by layers. The time of performing this operation is when the plants are in full bloom. Layering, by the wounds it inflicts, considerably impairs the bloom, and generally kills the parent plant. The practical part of the operation has nothing remarkable in it; a sufficient quantity of hooked pegs and of compost being provided; the pot containing the plant to be laid is placed on a table, and the layers prepared by cutting off their lower leaves, the earth is then stirred and the pot filled up with light rich mould, not of too fine a grain. The incision is made by entering a quarter of an inch below the joint, and passing the knife up through the centre of it; the shoot is then to be pegged down, and buried not more than half an inch deep. Maddock says it is adviseable to peg down the layers when in a dry state, being then less brittle than when they are wet and succulent; for this after the layers have been dressed, the pot should be placed half an hour in the sun, in order to render them more flaccid and pliant than they otherwise would be. When the layers have been properly rooted, which will be the case with most sorts in about three weeks after laying, provided due care be taken in keeping them regularly moist, and shading them from the heat of the meridian sun; they are then to be cut off from the old plant with about half of the stalk which connects them with it, and be immediately planted in small pots, three or four plants in each, placed round the sides. The pots are to be placed under an arch of hoops, where they can be covered with mats in case of excessive rains, till the severity of the winter renders it necessary to remove them into their winter repository, which is to be constructed as follows:—there should be a bed of coal-ashes formed in the place where it is to be erected, six inches thick; or a platform of square tiles, closely fitted together, rows of bricks are to be placed in lines, 3 inches asunder, which will allow a free circulation under and between the pots placed upon them. Two rows of substantial stakes should be stuck into the ground on each side, 3 or 4 inches distance from the outer pots, and have notches cut on their tops to receive the edges of the shutters. Three shutters, which will reach the whole length on one side, and three of the notched stakes will be sufficient to support the shutters, and will give room to move them backwards and forwards without any chance of slipping. It is necessary that a row of stakes should be placed between the two middle rows of pots to support the shutters when closed. The south side should consist of frames of glass in severe weather, so as to admit light when they cannot be opened.

Hogg commences laying when the flowers are sufficiently expanded to shew which are in colour or true to their kinds, or which not; this he finds to be about the 21st of July, and he continues laying from that time to the 21st of August. The plants receive a good watering the day previous to layering, because they can receive it only through a fine rose of a watering pot for some time after, for the purpose of preserving the earth on the layered shoots. In performing the operation he cuts off the extreme end of the tongue below the joint, because if left on it is apt to decay and prevent the protrusion of the granulous matter from which the fibres issue; under favourable circumstances they will be fit to take off in 6 or 7 weeks, and may then be planted 2 or 3 in a no. 48 pot. The pots are then to be set on tiles, slates, or boards, there to remain till the middle or end of October. *Hogg's Treatise*, p. 56.

Propagation by pipings. This mode of propagating *Carnations* is very precarious, as seldom so many as the half ever strike root; nevertheless some sorts succeed better by pipings than by layers, and make healthier plants; it requires attention to discover such sorts from the rest. Pipings, however, are a very necessary resource, where the shoots are too short for laying, or where the laying shoots are broken by accident. The first thing to provide is a slight hot-bed, cover it 4 or 5 inches thick with fine light mould, laid regularly and even. The piping should have two or even three complete joints; they are to be cut horizontally, close under the second or third joint. Some people recommend the shortening of the leaves, but this we think is rather deleterious than otherwise, both in piping and in laying. The earth of the bed where the pipings are to be planted should be moderately moistened, then take a small

hand-glass, and make an impression on the surface, in order to know where to put in the pipings. The pipings should then be planted in neatly and regularly, but never more than half an inch deep, and about an inch distant from each other; after this they should receive a gentle watering, in order to fix the earth more closely about them, and thereby keep out the air; after this watering they are to remain open, but not exposed to the sun till their leaves become dry, after which the glass is to be placed over them carefully on the same mark that was made by it previously upon the surface of the soil. The bottom edge of the glass is to be pressed into the soil to prevent the admission of too much air. What further remains to be done is diligently to attend to their management with respect to sun and air. The soil ought to be kept regularly moist until they have emitted fibres. Whenever they are watered the glasses should remain off until their leaves are dry. The pipings should have a little of the morning sun, but must be shaded when the heat becomes considerable; this may be prevented by placing mats upon a slight frame of hoops. The glasses should be occasionally taken off to admit air, dull cloudy warm weather is the best time, but if this should not occur, the glasses may be removed a little time in the morning. After the cuttings are tolerably well rooted, the glass may be taken off altogether, as they will be no longer necessary. But as the pipings do not all root at one time, those that strike first should be taken out and planted in pots, these may be known by the superior verdure and growth of the plants.

It is necessary to know the exact plants that the pipings have been taken from, because it seldom happens that the pipings taken from run or degenerated flowers, produce any thing but run flowers, and consequently not worth preserving. The layers and pipings of the most beautifully variegated flowers will frequently produce run blossoms, but it is impossible to prevent this, especially amongst the rich high-coloured sorts, when they grow in a rich compost. Hogg begins sooner to put in pipings than putting down the layers, before the shoots get hard and woody; he begins about the 1st of July. Plants raised from pipings are much sounder than those raised from layers, but still as layering is the surest mode he only makes pipings of such shoots as appear crowded, or too short, or too high up on the plant, to be laid easily. He plants them on a bed of dung blood warmth, in a compost of equal parts of maiden earth, leaf-mould, rotten horse dung, adding a portion of sand equal to a sixth of the mass, finely sifted together, that the cuttings when stuck in may enter easily and without injury. The best glasses for pipings are those made of common window glass, 8 inches square and 6 inches deep, and the less air they contain the sooner will the cuttings strike root. If the weather proves dry and hot they will require to be watered occasionally with a fine rose early in the morning over the glasses, which for one fortnight at least need not be removed if they are doing well. After this the glasses may be taken off for half an hour occasionally in the morning, and dried before they are put on again, and if you find any of the pipings mildewed or rotten, pull them up. At the end of 6 weeks they will be sufficiently rooted to be transplanted into small pots or a prepared bed, over which it would be adviseable to place a frame and lights for a week or ten days, till they take fresh root. There they may remain till the middle of September. In taking them up, if you find any not rooted, but sound, and their ends hard and callous, do not let them remain upon the same spot, but remove them to another bed, with a little temporary heat, and cover them with glasses as before; this will not fail to start them, and hasten their fibring.

Propagation by seed. *Carnation-seed* is rather difficult to raise or ripen in this country, owing to the moisture and cold of the autumnal months. It is generally procured from Vienna, and different towns of Switzerland, and if put in vials and well corked will keep for years. To raise it in this country Maddock gives the following directions. Those flowers which have few petals generally produce most seed, but they should be possessed of the best properties in other respects, viz. their petals should be large, broad, substantial, and perfectly entire at the edge, and their colours rich and regularly distributed, and in due proportion throughout the whole blossom. The plants should be selected from the rest, and their pots should stand upon a stage, defended against earwigs, in an open part of the garden, in which situation they should remain during bloom, and until the seed is perfectly matured; their blossoms should be defended against rain, by having glass paper or tin covers suspended over them in such a manner as to admit the free circulation of the air; the pots should neither be kept very wet nor very dry; nor will it be proper to cut or mutilate the plants either for their layers or for pipings, till the seed becomes ripe, because it would certainly weaken them, and consequently injure, if not destroy their seed. When the bloom is over, and the petals become withered and dry, they should be carefully drawn out of the pod or calyx, being apt to retain a degree of moisture at their base, engendering a mouldiness or decay in that part, which will destroy the seed. There is another method adopted successfully in ripening seed, which is, when the petals begin to decay, they are to be taken out as above, taking care to leave the two styles; the calyx is then to be carefully shortened, and an aperture made on one side of the remainder, so that no water can possibly get between the capsule and the calyx; but this must be performed with great care, not to injure the capsule. It is best to allow the open side of the calyx to incline a little down, so as to prevent moisture from entering. The seeds ripen in August; this may be known by the capsule turning brown, or the seed black, or of a dark-brown colour, but if gathered before it is perfectly ripe, the greatest part proves small, pale-coloured, and unproductive. When gathered it should remain in the capsule till the middle of May in the next year; it is then to be sown in pots filled with the compost, and have a little fine mould sifted upon it, barely sufficient to cover the seed; the pots should then be placed in an airy situation in the garden, be shaded from the heat of the sun, and kept moderately moist, but never very wet. As soon as the young plants have six leaves, and are about three inches high, they should be planted out on a bed of good rich garden mould at about 10 or 12 inches asunder, and be defended from excess of rain and severe frosts by mats on hoops, placed over the bed in the usual manner; they will generally blow the following summer. Hogg's directions differ in nothing of importance from Maddock's. He says it often happens out of 200 blooming plants, you will not be able to get two pods of perfect seed. More seed was saved in the dry summer of 1818, than in any seven preceding years. Seedlings require two years to bloom, and the chance of getting a good new flower is reckoned as 1 to 100. If a florist raises 6 good new *Carnations* in his life time he is to be considered fortunate. Seed out of the same pod, he says, is reported to produce flowers of all the different varieties, flakes, bizarres, &c. Emmerton experienced that seed from a scarlet flake will produce a scarlet-bizarre and a rose or pink flake.

Soil.—Hogg takes three barrows of loam, one and a half of garden mould, ten ditto of horse-dung, one ditto of coarse sand; let these be mixed and thrown together in a heap, and turned two or three times in the winter, particularly in frosty weather, that it may be well incorporated. On a dry day towards the end of November, he takes a barrow full of fresh lime, which, as soon as it is slacked, he strews over while hot in turning the heap; this accelerates the rotting of the fibrous particles of the loam, lightens the soil, and destroys the grub-worms and

slugs. If there has been much rain during the winter, so that the strength of the compost is reduced, and the salt washed from it, he takes about seven pounds of damaged salt, and adds it to it, either dissolved in water or strewed over with the hand; this he finds to be attended with the most beneficial result upon the future health and vigour of the plants. During very heavy rains many florists cover their compost with tarpaulin or double mats, to prevent the nutritious particles from being washed out; this is also an excellent precaution. This compost is allowed to lie at least six months before it is used. For flowers that are apt to sport in colour, and yellow picotees, he lowers the compost, and uses three barrows of sound staple loam, two ditto old rotten cow-dung, one ditto horse-dung, a half ditto sand, a half ditto lime rubbish, to be prepared and well incorporated as before.—*Hogg's Treatise*, &c. p. 45.

Maddock's compost (Florist Direct.) is as follows:—one-half rotten horse-dung, one year old, one-third fresh sound loam, one-sixth coarse sea or river sand. These ingredients are to be mixed together in autumn, laid in a heap about three feet thick, turned three or four times during winter, and in frosty weather it should be laid sufficiently thin, in order that the whole mass may be thoroughly frozen, this will be fit for use the following spring; the earth and sand may be added to it in March, the whole should then be well mixed. Where the air is pure, experience has pointed out the propriety of using less dung and more loam, therefore the quantity of sand, loam, and dung should in this case be reversed.

Pots and potting.—The select kinds are always grown in pots. Maddock uses pots 12 inches wide at the top, 6 inches at the bottom and 10 inches deep, with a hole at the bottom an inch in circumference, also three or four smaller holes round the sides at the bottom, to prevent the possibility of water lodging in the pot. Hogg uses pots rather smaller than those recommended by Maddock, 12 or 16 to the cast. Potting should commence about the middle of March, but it should never be deferred later than the end of the month: this is to be done in the common way of potting, but the earth should be much more raised at the edges of the pots than in the centre. It is necessary in the repotting the plants that they neither should be planted deeper nor shallower than they were before, within an inch of the top of the pot, this is necessary for the purpose of laying, as they will then require additional mould. Hogg considers the first week in April the safest and best time to pot *Carnations*.

General culture.—When the plants are potted off for bloom, the pots should be placed in an open airy part of the garden, under an arch of hoops, that in case of cold drying winds, heavy rains or frosty nights, mats may be thrown over to preserve them from such unfavourable weather; but in this situation they are always to remain open, except in the cases above mentioned, and to be kept regularly watered with soft water from a fine rose watering-pot. When their flower-stems are grown 8 or 10 inches high it will be necessary to support them with sticks, to which the stems are to be loosely tied with twisted pieces of bass-mat; this should be carefully looked after, as the stems are extremely brittle and apt to be broken by the wind. When the stems have grown about a foot and a half high, the plants should be removed to the stages, there to remain till they flower.

If any small green winged insects appear on the plants, they must be effectually extirpated, either by means of a small soft brush or feather, by the application of a strong infusion of tobacco-water, or some similar easy and safe expedient; even Scotch snuff, dusted upon the infested parts early in the morning, while the plants are wet with the dew of the night, has been sometimes tried in this case with success.

The calyx of many sorts are apt to burst on one side, if not timely prevented, and totally destroy that compact graceful circular form which a perfect flower ought to possess; but this may be entirely prevented by fastening a small, narrow slip of bladder round the middle of the calyx, where it is most swelled, and appears to have the greatest inclination to burst; these slips should lap over at the ends and be fixed by a little gum-water. Small slips of bass-mat, tied with a single knot, will answer nearly as well. When any of the flowers open, such should be shaded both from sun and rain by means of paper covers, about 12 inches in diameter, painted white or green, and formed like an umbrella; each should have a tin tube in the centre, that will permit the stick to which the stem is tied to pass through it as far as is necessary. But when the major part are in bloom a cloth awning should be placed over the whole, and be drawn up or let down in the same manner and on the same occasions as for the bloom of hyacinths and tulips. As earwigs are very destructive to the flowers of *Carnations*, it is necessary to have a reservoir of water round the stages in order to prevent them, at all events the plants should be frequently examined.

Those who are particularly curious in blowing their carnations, carefully extract such petals as are plain or run from their true colours; they perform this by means of an instrument adapted to the purpose, and with the same arrange the remaining petals so as to supply the defect; in like manner they dispose the whole with such regularity, that the flowers appear to have an equal distribution of beautiful petals; and if the blossoms consist of too many petals, they extract the smaller ones, and thereby afford the others more room to expand. Four or five plants in a pot have always a more elegant appearance than one or two, and seldom more than four or five blossoms should be allowed to expand on the same plant; the smaller buds should be picked off.

Carnations are to be treated in winter much like *auriculas*; they are seldom injured by a moderate dry frost, though it is safer to defend them from too much of it; but it is necessary to caution against covering up too close when the plants are wet, as they are apt in that state to contract a destructive mildew, if they have not the benefit of a free circulation of air; this mildew makes its first appearance in purple spots on the foliage, which can only be cured or prevented from spreading amongst the adjacent plants by cutting of the infected parts, or removing the plants so diseased. It is necessary to defend the plants from excessive rain in winter and autumn, for it is safer at this season to keep them rather too dry than too moist, but a moderate degree of moisture is always to be preferred, except when the weather is severely frosty. As too long a deprivation from light is at all times prejudicial to plants, whenever the winter repository is required to be closely covered up with mats for several days and nights, no opportunity should be lost during the middle of the day, if the sun shines, to take off the mats in front of the glasses. When the pots become green with moss on the top, or too compact, it will be proper to stir it up carefully about half an inch deep, and sprinkle a little coarse dry sand upon it, this will be of great service to the plants and may be repeated as often as necessary. In spring, before the potting commences, the pots will probably require to be frequently watered. Hogg gives a top dressing to his blooming plants about the middle of June, with about half an inch of rotten horse-dung, passed through a sieve, which he finds materially to assist the plants, and promote the growth of the shoots for layers. He waters freely while the flower-buds are swelling, and during the whole time they are in blossom. As soon as the side shoots appear, a paper collar is put round the bottom of the blossom to support it. These collars are made of white card paper, of the form of a circle, 3 or 4 inches in diameter,

with a hole in the centre just large enough to admit the calyx without much compressing, and with a cut extending from the centre to the outside. On these cards the flower is preserved in shape and form a long time, on these the petals are also finely disposed, and the beauty of the *Carnation* displayed to great advantage.

When placed on the stage they should have the benefit of the morning sun till about 9 o'clock, according to the intense heat of its rays; the same in the evening, with as much open exposure to the air at all times, as may be allowed without injury to the bloom. In winter Hogg preserves them in frames, in the same manner as he recommends for *auriculas*. When he has more plants than he can blow in pots, he plants them in beds of the same compost used for the others, protecting them from severe frosts and heavy rains, and in other respects treating them in the same manner as if in pots.—*Hogg's Treatise.*

Criterion of a fine double Carnation.—The stem should be strong, tall, and straight; not less than 30 inches or more than 45 inches high; the footstalks supporting the flowers should be strong, elastic, and of a proportionate length. The flower should be at least 3 inches in diameter, consisting of a great number of large, well-formed petals, but neither so many as to give it too full and crowded an appearance, nor so few as to make it appear thin and empty. The petals should be long, broad, and substantial, particularly those of the lower or outer circle, commonly called the guard leaves, these should rise perpendicular about half an inch above the calyx, and then turn off gracefully in an horizontal direction, supporting the interior petals, and altogether forming a convex and nearly hemispherical corolla. The interior petals should rather decrease in size as they approach the centre of the flower, which should be well filled with them. The petals should be regularly disposed alike on every side, imbricating each other in such a manner as that both their respective and united beauties may captivate the eye at the same instant; they should be nearly flat, however, a small degree of concavity or inflection at the broad end is allowable, but their edges should be perfectly entire, that is to say, free from fringe or indenture. The calyx should be at least one inch in length, terminating in broad points sufficiently strong to hold the narrow bases of the petals, in a close and circular body. Whatever colours the flowers may be possessed of, they should be perfectly distinct, and disposed in long, regular stripes, broadest at the edge of the lamina, and gradually becoming narrower as they approach the unguis or base of the petal, there terminating in a fine point. Each petal should have a due proportion of white; *i. e.* one half or nearly so, which should be perfectly clear and free from spots.

Clove Pink, Carnation, and Picotee. Fl. June, Aug. England. Pl. 1 to 3 feet.

53 D. SYLVE'STRIS (Jacq. coll. 1. p. 237. icon. rar. t. 82.) stem branched or simple; flowers solitary; calycine scales 4, very short, ovate, outer ones acute, inner ones bluntish; petals very broad, beardless, toothed; leaves crowded, awl-shaped, stiff. ♃. H. Native on the Alps of Jura on rocks and among stones. D. virgíneus, Sims. bot. mag. t. 1740. but not of Lin. Perhaps this plant is the type of *D. caryophýllus.* Stem bearing one or many flowers. Flowers deep red, scentless.

Wild Pink. Fl. June, Aug. Clt. 1732. Pl. ¼ to 1 foot.

54 D. LONGICAU'LIS (Tenore, cat. 1819. p. 76.) stem panicled, many-flowered, tufted; flowers solitary; calycine scales ovate, all emarginate, cuspidate; leaves linear-lanceolate, thickish, glaucous. ♃. H. Native near Naples. Flowers red?

Long-stemmed Pink. Fl. July. Clt. 1820. Pl. 1 to 2 ft.

55 D. GRANDIFLÒRUS (Poir. dict. 4. p. 514.) stem? flowers somewhat aggregate; bracteas ovate, acute, one-half shorter than the tube. ♃. H. Native of Spain. Flowers red? This plant ought perhaps to be placed near *D. corymbòsus.*

Great-flowered Pink. Fl. July, Aug. Pl. 1 foot.

56 MONADE'LPHUS (Vent. hort. cels. t. 39.) glaucous; stem panicled; flowers solitary; calycine scales 4, lanceolate, rather pungent, spreading, shorter than the tube. ♃. H. Native of the Levant. D. procúmbens, Pers. ench. 1. p. 494. Calyx tapering. Ovary stipitate. Petals white, under surface cinereous, with purple margins. Filaments united at the base.

Monadelphous Pink. Fl. June, July. Clt. 1800. Pl. 1 ft.

57 D. BURCHE'LLII (Ser. mss. and D. C. prod. 1. p. 359.) stem branched; flowers solitary; calycine scales 4, ovate-lanceolate, very short, somewhat mucronate; petals deeply serrated? leaves linear, awl-shaped, striated; lower ones very numerous and very long, those of the stems and branches are very short, and scale-formed. ♃. G. Native of the Cape of Good Hope. Burch. cat. pl. afr. aust. no. 2456. Flowers white.

Burchell's Pink. Pl. 1 to 2 feet.

58 D. EMARGINA'TUS (Ser. mss. and D. C. prod. 1. p. 359.) stems tufted? 1 or 2-flowered; calycine scales very blunt and very broad; calyx short, striated, with bluntish lobes; petals emarginate, small, inside white, outside purple; lower leaves numerous, linear, flat, serrated. ♃. H. Native about Astypalea.

Emarginate-petalled Pink. Fl. July, Aug. Pl. ½ to ¾ foot.

59 D. LIBOSCHITZIA'NUS (Ser. mss. and D. C. prod. 1. p. 360.) stem generally 1-2-flowered, glabrous; calycine scales 4, ovate, acuminate, a little shorter than the tube; leaves straight, awl-shaped, with scabrous margins. ♃. H. Native on rocks in Armenia and Iberia. D. petræ'us, Bieb. fl. taur. 1. p. 328. suppl. p. 300. but not of Waldst. and Kit. D. bracteàtus, herb. Willd. ex Steven. There is a variety having the calycine scales almost one-half shorter than the tube. Flowers rose-coloured, beardless, about the size of the *clove.*

Liboschitz's Pink. Fl. June, July. Clt. 1817. Pl. ½ foot.

60 D. SYLVA'TICUS (Hoppe, in Willd. enum. 467.) stem panicled? flowers solitary or somewhat corymbose; calycine scales ovate-lanceolate. shorter than the tube; leaves linear-lanceolate, obsoletely 3-nerved, glabrous; petals doubly toothed. ♃. H. Native at Ratisbon. Flowers red?

Wood Pink. Fl. June, Sept. Clt. 1815. Pl. 1 foot.

61 D. CINNAMÒMEUS (Sibth. and Smith, fl. græc. t. 400. prod. 1. p. 287.) stem panicled or simple, branches 1-flowered; calycine scales 4, rhomboid, very blunt and very short; petals emarginate, toothed; leaves lax, bluntish. ♃. H. Native on heaths in Laconia, Asia Minor, Cyprus, and about Constantinople. Petals beardless, white or flesh-coloured above, but of a red or dark cinnamon colour beneath.

Cinnamon-coloured Pink. Fl. June, Aug. Pl. 1 foot.

62 D. POMERIDIA'NUS (Lin. spec. 1673.) stem branched; flowers solitary; calycine scales ovate, acute, very short; petals emarginate or entire. ♃. H. Native of Palestine, Smith, in Lin. soc. trans. 2. p. 300. Sal. par. lond. 57. D. trícolor, Adam. Fisch. Petals pale yellow, with revolute sides, lead-coloured on the under surface. The flowers of this plant, as well as the following, opens at mid-day and closes about 10 at night.

Afternoon-flowering Pink. Fl. June, Aug. Clt. 1804. Pl. 1 foot.

63 D. LEPTOPE'TALUS (Willd. enum. 468.) stem branched; flowers solitary; calycine scales 4, ovate, acute, very short, a little awned, 2 outer ones very small; petals lanceolate, narrow, with entire revolute sides, sometimes a little 3-toothed; leaves awl-shaped, roughish. ♃. H. Native of Caucasus. Sims, bot. mag. t. 1739. D. pomeridiànus, Bieb. fl. taur. 1. p. 329. but not of Lin. D. cretàceus, Adam. Petals white on the upper sur-

face, but lead-coloured on the under surface, sometimes entire and acutish. Perhaps a variety of *D. pomeridiànus*.

Slender-petalled Pink. Fl. Jul. Aug. Clt. 1814. Pl. 1 ft.

64 D. pu'ngens (Lin. mant. p. 240.) stem few-flowered; flowers solitary; calycine scales very short, mucronate, spreading; tube of calyx gibbous; petals entire; leaves tufted, awl-shaped. ♃. H. Native of Spain by the sea-coast. Flowers pink or white.

Var. β, Hispánicus (Ser. mss. and D. C. prod. 1. p. 360.) calycine scales ovate; petals linear, very entire. Asso, syn. no. 371. t. 3. Dufour, ann. gen. 7. p. 309. Flowers pink.

Pungent-leaved Pink. Fl. July, Aug. Clt. 1781. Pl. ½ to 1 foot.

65 D. divarica'tus (D'Urv. enum. pl. archip. p. 46.) stem branched, divaricating; branches very long, straight, 1-flowered; calycine scales 4, ovate-lanceolate, very acute, with membranaceous margins, almost equalling in length the calyx; calyx conical, striated, with the stripes granularly-dotted; petals acutely-toothed; leaves very narrow, flaccid. ♂. H. Native of the island of Samo. Flowers pale purple, but green on the outside.

Divaricate-branched Pink. Fl. July, August. Clt. 1822. Pl. ½ to 1 foot.

66 D. bi'color (Bieb. fl. taur. 1. p. 329.) stem panicled, flowers solitary; calycine scales 4, very short, almost orbicular, mucronulated; petals dilated; leaves awl-shaped, lower ones tomentose. ♃. H. Native of Tauria in arid fields. D. saxátilis, Pall. ined. taur. Stature and size of flowers like those of *D. caryophýllus*. Petals white above and lead-coloured beneath. Calycine scales truncate, mucronate.

Var. β, minor (Ser. mss. and D. C. prod. 1. p. 361.) leaves shorter; flowers smaller; calyx shorter and more turgid at the base. ♃. H. Native of the south of Tauria in stony places.

Two-coloured-flowered Pink. Fl. June, July. Clt. 1816. Pl. 1 to 2 feet.

67 D. inte'ger (Vis. in bot. Zeit. 1828.) smooth; stem prostrate, diffuse; branches ascending, 1-flowered; leaves linear, flat, with scabrous margins; calycine scales 4, broad-ovate, unequally awned; petals obovate, entire, beardless, short. ♃. H. Native of Dalmatia. Flowers small, white. Calyx dark-purple; stems decumbent, and nearly creeping.

Entire-petalled Pink. Fl. July. Pl. decumbent.

68 D. racemòsus (Vis. l. c.) smooth, root woody; stem erect, simple; leaves linear, stiff, acute, channelled with scabrous margins; flowers solitary or in fascicles, loosely racemose, secund, lower ones stalked, upper ones sessile; calycine scales in a triple series, imbricate, lanceolate, acuminated, nerved, with scarious margins; petals obovate, beardless, entire. ♃. H. Native of Dalmatia. Flowers rose-coloured, hardly sweet-scented.

Racemose-flowered Pink. Fl. July, Aug. Pl. 1 foot.

69 D. furca'tus (Balb. act. acad. taur. 7. p. 12. f. 2. but not of Horn.) stem smooth, dichotomously-branched, 2-4-flowered; flowers solitary; peduncles distant from each other; calycine scales opposite, generally twin, much shorter than the tube. ♃. H. Native of Piedmont near Tenda. D. geminiflòrus, Lois. fl. gall. p. 725? Flowers flesh-coloured.

Forked-stemmed Pink. Fl. June, July. Clt. 1819. Pl. ½ to 1 foot.

70 D. virgíneus (Lin. spec. 590.) stem generally 1 or few-flowered; calycine scales very short and very blunt, twin, distant; petals crenated; leaves tufted, linear, stiff, serrulated. ♃. H. Native about Montpelier. D. rupéstris, Lin. fil. suppl. p. 240. D. púngens, Poir. dict. 4. p. 526.—Dill. elth. 401. p. 298. t. 385? Flowers red or blood-coloured.

Var. β, subacaúlis (Ser. mss. and D. C. prod. 1. p. 361.) stems tufted, very short, 1-flowered; leaves and calycine scales short. ♃. H. Native of Mount Ventoso on rocks. D. subacaúlis, Vill. delph. 3. p. 597. Lois. not p. 66. t. 6. f. 1.

Virgin Pink. Fl. June, Aug. Clt. 1816. Pl. ½ to 1 foot.

71 D. cilia'tus (Guss. pl. rar. p. 168. t. 33.) stem erect, a little branched at the top; leaves nerveless, with ciliately-serrulated margins; flowers solitary; peduncles bifid; calycine scales 6, pressed, acuminately-awned, about one half shorter than the calyx; petals smooth, obovate, entire, or obsoletely-toothed. ♃. H. Native on arid chalky hills at the bottoms of the mountains in South Abruzzo. Plant hardly glaucous. Stem rather pubescent. Flowers of a reddish-blue colour. This plant comes near to *D. Hornemánni*, D. C. but differs from it in the leaves being nerveless, and in the petals being entire or obsoletely toothed, not deeply toothed.

Ciliated-leaved Pink. Fl. June, July. Pl. 1 to 2 feet.

72 D. deltoìdes (Lin. spec. 588.) stems ascending, branched; flowers solitary; calycine scales ovate-lanceolate, acute, 4, but generally twin; upper leaves narrow, acute, pubescent; lower ones oblong, obtuse. ♃. H. Native on sandy banks and in woods in many parts of Europe. In Britain in pastures and the grassy borders of fields on a gravelly or sandy soil and on banks. Smith, engl. bot. 61. D. supìnus. Lam. fl. fr. 2. p. 534. D. pyrenàicus, Pourr. act. toul. 3. p. 318. D. volgénsis, hort. erf. ex. herb. Balb. D. hyssopifòlius, Hort.—Dill. elth. 400. t. 298. f. 384. Flowers rose-coloured, with a dark circle.

Var. β, glaúcus (Ser. mss. and D. C. prod. 1. p. 361.) flowers white with a dark circle; leaves and stems rather glaucous. D. glaúcus, Lin. spec. 588. Native of King's Park, Edinburgh.

Deltoid-leaved or Maiden Pink. Fl. July, Oct. Britain. Pl. ½ to ¾ foot.

73 D. pa'llens (Sibth. et Smith, fl. græc. t. 399.) stem panicled, many-flowered; branches 1-2-flowered at the apex and rising from the axils of the leaves; calycine scales 4, ovate, acuminated, very short; leaves lax, acute. ♃. H. Native of Asia Minor near Smyrna. Petals beardless, bifid, white above but brownish-green beneath.

Pale-flowered Pink. Fl. June, Aug. Pl. 1 foot.

74 D. Nasaræ'us (Clark. itin. vol. 3. ex Spreng. neue. entd. 3. p. 161.) flowers solitary; stems somewhat branched; calycine scales one-half shorter than the tube, ovate, acute, pressed to the calyx; petals 6-toothed; leaves elongated, linear, awl-shaped, 3-nerved, with scabrous margins. ♃. H. Native of Palestine.

Nazare Pink. Fl. July, Aug. Pl. 1 foot.

75 D. margina'tus (Poir. suppl. 4. p. 131.) stem branched; flowers solitary; calycine scales acute, unequal, shorter than calyx; leaves linear, marginated. ♃. H. Native on Mount Jura. Very near *D. nítidus*. Scales of calyx marginated. Flowers white.

Marginated-leaved Pink. Fl. Ju. Jul. Clt. 1820. Pl. ½ to ¾ ft.

76 D. crena'tus (Thunb. prod. 81.) stem branched; flowers solitary; calycine scales 6, lanceolate, cuspidate, pressed to the calyx; petals glabrous, obovate, fringed; claws of petals longer than calyx; leaves linear-acuminated, channelled. ♃. G. Native of the Cape of Good Hope. Ker. bot. reg. 256. Flowers white. Calyx long-tubular.

Crenated-petalled Pink. Fl. Aug. Clt. 1817. Pl. 1 to 3 ft.

77 D. Sternbe'rgii (Sibth. ex cat. hort. taur. 1821. p. 24.) stems generally 2-flowered; calycine scales 4, ovate, acute, pressed, one-half shorter than the tube; petals wedge-shaped, serrated, pubescent; leaves linear. ♃. H. Flowers red.

Sternberg's Pink. Fl. June, July. Clt.? Pl. 1 foot.

78 D. biflòrus (Smith, fl. græc. t. 393.) flowers in pairs; calycine scales 4, cuneated, very obtuse, awned, spreading, shorter than the calyx; leaves linear, 3-nerved. ♃. H. Native on

Mount Delphi Eubœa. Flowers rose-coloured above and rather hairy, but smooth and cream-coloured beneath.

Two-flowered Pink. Fl. June, July. Clt.? Pl. ½ foot.

79 D. Ibe'ricus (Willd. enum. suppl. p. 24.) stem smooth; leaves roughish; calycine scales spreading, with lanceolate points; petals pubescent. ♃. H. Native of Iberia. D. Willdenòvii, Link. enum. 1. p. 420. Stem few-flowered. Bracteas spreading, a little shorter than the calyx. Flowers purple.

Iberian Pink. Fl. June, July. Clt. 1817. Pl. ½ foot.

80 D. tripuncta'tus (Sibth. and Smith. fl. græc. t. 398. prod. 1. p. 286.) stem spreading, many-flowered; flowers solitary; calycine scales scarious, finely awned, a little shorter than the tube. ♂. H. Native of the island of Cyprus. Flowers rose-coloured, palest beneath, with 3 dark short lines at the base of each petal.

Three-spotted-petalled Pink. Fl. July. Pl. 1 foot.

81 D. Hornema'nni (Ser. mss. D. C. prod. 1. p. 262.) peduncles bifid, terminal; calycine scales lanceolate-cuspidate, erect, shorter than the tube; petals cut; leaves linear, nerved, with serrulated, scabrous margins. ♃. H. Native of Italy and at Trieste. D. furcàtus, Horn. hafn. suppl. p. 47. but not of Balb. Flowers red.

Hornemann's Pink. Fl. June, Jul. Clt. 1818. Pl. ½ to 1 ft.

82 D. ri'gidus (Bieb. fl. taur. 1. p. 325. suppl. p. 298.) stems tufted, suffruticose, few-flowered; flowers solitary; calycine scales 4, ovate, acute, short; leaves awl-shaped, spreading, covered with rough pubescence. ♃. H. Native of Tauria on sandy hills near Sarepta. Stem woody, distorted. Flowers pale rose-coloured.

Rigid Pink. Fl. June, Oct. Clt. 1802. Pl. ¾ to 1 foot.

** *Stem* 1-*flowered. Petals toothed or crenate.*

83 D. serratifòlius (Sibth. and Smith. fl. græc. t. 402. prod. 1. p. 287.) stems 1-flowered, woody at the base; calycine scales 4; petals deeply toothed, beardless; leaves serrated, pungent. ♃. H. Native on Mount Hymettus near Athens. Flowers small, flesh-coloured above and ash-coloured beneath.

Saw-leaved Pink. Fl. June, Aug. Pl. ¾ foot.

84 D. clava'tus (Spreng. neue. entd. 2. p. 169.) stem 1-flowered; calycine scales twin, ovate, rather acute, very short, spreading; calyx narrowed in the middle; petals crenated, naked; leaves linear, channelled, with roughish margins. ♃. H. Native? Perhaps D. cæ'sius. (Spreng.) Perhaps D. plumàrius (Ser.). Flowers flesh-coloured?

Clavate-calyxed Pink. Fl. June, Oct. Clt.? Pl. 1 foot.

85 D. gra'cilis (Sibth. and Smith, fl. græc. t. 404.) stem 1-flowered; calycine scales generally 6, mucronate; petals crenated, bearded; leaves acuminated, with scabrous margins. ♃. H. Native of Mount Athos in Greece. Flowers rose-coloured.

Slender Pink. Fl. June, Aug. Pl. 1 to 1½ foot.

86 D. micrope'talus (Ser. mss. and D. C. prod. 1. p. 359.) stems tufted, 1-flowered; calycine scales 4, ovate-lanceolate, mucronulate, one-half shorter than the striated calyx; teeth of calyx ciliated; petals very short, toothed; radical leaves small, awl-shaped, ciliary toothed, cauline ones scale-formed. ♃. G. Native of South Africa. Leaves like those of *Plantàgo subulàta*. Calyx like that of *D. caryophyllus*. Burch, cat. pl. afr. aust. no. 1851. Flowers pale red or white.

Small-petalled Pink. Pl. ½ foot.

87 D. cæ'sius (Smith in Lin. soc. trans. 2. p. 302. engl. bot. t. 62.) stem tufted, generally 1-flowered; calycine scales 4, roundish, short; petals crenated, pubescent; leaves short, with scabrous margins. ♃. H. Native of Jura, and several other parts of Europe on rocky mountains. In England on dry limestone rocks, but rare, particularly on the abrupt precipices of Chedder rocks, Somersetshire. D. pulchéllus, Pers. ench. 1. p. 495. D. cæspitòsus, Lam. dict. 4. p. 525. D. glaúcus, Huds. ang. p. 185.—Dill. elth. p. 401. t. 298. f. 385. and referable to D. nitídus, Poir. suppl. 4. p. 131? Plant very glaucous. Flowers of a delicate rose-colour, very fragrant.

There are evidently two or three species in the gardens under the name of *D. cæ'sius*, the most common is with simple serrate petals, but the British plant has them doubly crenate.

Grey Chedder or Mountain Pink. Fl. June, July. England. Pl. ¼ to ½ foot.

88 D. alpìnus (Lin. spec. 590.) stem leafy, 1-flowered; outer calycine scales 2, about equal in length or shorter than the tube; petals crenated; leaves oblong-linear, obtuse, green. ♃. H. Native of Styria and Austria. Sims, bot. mag. 1205. Jacq. fl. austr. t. 52. D. glaciàlis var. γ, latifòlius, D. C. prod. 1. p. 362.—Clus. hist. 1. p. 283. f. 1. Flowers large, red, or rose-coloured, pale beneath, scentless.

Alpine Pink. Fl. June, July. Clt. 1759. Pl. ¼ foot.

89 D. glacia'lis (Hænk. in Jacq. coll. 2. p. 84.) stems erect, tufted, short, generally 1-flowered; calycine scales 2, elongated, equal in length with the tube or exceeding it; calyx striated; petals serrated; leaves linear, acute, serrulated, green. ♃. H. Native of the mountains of Provence and Dauphiny. D. alpìnus, D. C. fl. fr. 4. p. 746. var. β, Willd. D. negléctus, Lois. not. 65? Flowers small, purple, scentless.

Var. β, *acaúlis* (D. C. prod. 1. p. 362.) stem very short. Native of mount Cenis.

Icy Pink. Fl. June, July. Clt. 1820. Pl. ¼ foot.

90 D. re'pens (Willd. spec. 2. p. 681.) stems procumbent at the base, but erect at the top, 1-flowered; calycine scales twin, ovate, acuminated, spreading nearly the length of the tube; petals toothed, bearded; root perpendicular. ♃. H. Native of Siberia and Eschscholtz Bay. Like *D. glaciàlis*, Hænke, but the habit is more loose, and the leaves less fleshy.

Creeping Pink. Fl. June, July. Clt.? Pl. ½ foot.

91 D. e'legans (D. Urv. enum. pl. arch. p. 46. no. 875.) stem erect, straight, 1-flowered; calycine scales ovate, mucronate, equal in length to the middle of the tube; calyx striated, with blunt rather membranaceous lobes; petals toothed; leaves linear acute, very long, striated, and very entire. ♃. H. Native of the island of Cos. Flowers white?

Elegant Pink. Fl. June, July. Pl. ½ foot.

92 D. multipuncta'tus (Ser. mss. and D. C. prod. 1. p. 362.) stems erect, straight, generally 1-flowered, elongated; calycine scales ovate, with long points and membranaceous margins, equal in length to the tube; calyx punctately warted, with nerved segments; petals spotted, bearded, 3-5-toothed; leaves linear, acute, entire, very long. ♃. H. Native of the island of Cos by road sides.

Many-dotted-petalled Pink. Fl. June, July. Pl. ½ to 1 foot.

93 D. pu'milus (Vahl. symb. 1. p. 32.) tufted; scape short, 1-flowered; leaves linear, acute, smooth; calycine scales 6, oblong, acuminated, outer ones shortest. ♃. H. Native of Arabia Felix. D. uniflòrus, Forsk. cat. pl. arab. p. 111. no. 284. Calyx glabrous, striated. Flowers rose-coloured?

Dwarf Pink. Fl. June, July. Pl. ⅛ foot.

94 D. leucophæ'us (Sibth. and Smith, fl. græc. t. 405.) stem 1-flowered; calycine scales 4; petals tridentate, beardless: leaves ovate-lanceolate, 5-nerved at the base. ♃. H. Native on the summit of Mount Olympus, in Bithynia. Flowers white above and rusty beneath. A small tufted plant, woody at the neck. Calycine scales mucronate, shorter than the tube.

White-brown Pink. Fl. June, July. Pl. ¼ foot.

95 D. purpu'reus (Lam. dict. 4. p. 523. ill. t. 376. f. 2.) stem generally 1-flowered; calycine scales broad, acute, one-half shorter than the tube; petals almost entire; leaves linear,

acute, glaucous, rather ciliated. ♃. H. Native ? Calyx ample, short. Flowers purple.

Purple-flowered Pink. Fl. June, July. Pl. ½ foot.

96 D. STRI'CTUS (Smith, fl. græc. t. 403.) stem 1-flowered; calycine scales 4, short; petals crenate, beardless; leaves flat, bluntish, with scabrous margins. ♃. H. Native of Mount Athos. Flowers small, white, rather flesh-coloured in the disk.

Straight-stemmed Pink. Fl. June, July. Pl. ½ to 1 foot.

97 D. SCA'BER (Thunb. prod. p. 81. but not of Schleich.) stem 1-flowered, pubescent; calycine scales 4, lanceolate, shorter than the tube; petals entire or crenate; leaves triquetrous, villous, serrulated? ♃. G. Native of the Cape of Good Hope. Flowers white or pinkish.

Scabrous Pink. Fl. June, July. Pl. ½ foot.

98 D. CÆSPITÒSUS (Thunb. prod. 1. p. 81.) stems 1-flowered; calycine scales 4, lanceolate; petals entire; leaves triquetrous. ♃. G. Native of the Cape of Good Hope.

Tufted Pink. Fl. June, July. Pl. ¼ to ½ foot.

§ 2. *Petals fringed, or very deeply fringe-toothed.*

* *Stem simple, 1-flowered.*

99 D. GA'LLICUS (Pers. ench. 1. p. 495.) stems ascending, generally 1-flowered: calycine scales short, ovate, somewhat mucronate; petals dentately-multifid; leaves linear, somewhat ciliated. ♃. H. Native of the south of France in sandy places. D. arenàrius, D. C. syn. no. 4325. icon. Gall. rar. p. 14. t. 41. but not of Lin. Flowers white, livid at the base.

French Pink. Fl. June, Aug. Clt.? Pl. ½ foot.

100 D. SUA'VIS (Willd. enum. suppl. p. 24. Spreng. neue entd. 2. p. 168.) stem generally 1-flowered; calycine scales 4, acute, short; petals bearded, doubly and deeply serrated; leaves linear, spreading, glaucous. ♃. H. Native of? Flowers pink, sweet-scented. Diánthus cæ'sius, Smith in Lin. trans. vol. 2.?

Sweet Pink. Fl. June, July. Pl. ½ foot.

101 D. TE'NER (Balb. act. acad. taur. 7. p. 13. t. 3.) stem 1-flowered; petals fringed, glabrous; calycine scales 4, lanceolate-linear, a little shorter than the tube. ♃. H. Native of Tenda, on the margins of fields. Flowers red.

Tender Pink. Fl. June, July. Clt. 1817. Pl. ¼ to ½ foot.

102 D. SQUARRÒSUS (Bieb. fl. taur. 1. p. 331. suppl. p. 302. cent. 1. t. 33.) stems generally 1-flowered; calycine scales ovate, acute, very short; petals multifid; leaves awl-shaped, channelled, stiff, short, recurved. ♃. H. Native of Tauria on hills in the colony of Sarepta. D. arenàrius, Pall. itin. 3. p. 600. Flowers like those of *D. plumàrius*, but the calyx is longer. Petals white, finely jagged.

Squarrose Pink. Fl. June, Aug. Clt. 1817. Pl. ½ foot.

103 D. MUSSÌNI (Horn. hort. hafn. 1. p. 408.) stems generally 1-flowered, procumbent; calycine scales oval, mucronate, thrice shorter than the tube; petals multifid, beardless; leaves awl-shaped, reflexed. ♃. H. Native of Caucasus. Flowers white.

Mussin-Puskin's Pink. Fl. Ju. Aug. Clt. 1823. Pl. ½ ft.

104 D. FRA'GRANS (Bieb. fl. taur. 1. p. 331. suppl. p. 301.) stems generally 1-flowered; calycine scales 6, ovate-lanceolate, acuminated, shorter than the tube; petals semi-multifid, beardless; leaves awl-shaped, with roughish margins. ♃. H. Native of subalpine situations in Caucasus. Sims, bot. mag. 2067? D. multífidus, Willd. herb. ex Steven. in litt. Leaves long, very narrow. Calyx long. Petals white, suffused with purple. Segments of calyx narrow, acute.

Fragrant Pink. Fl. July, Sept. Clt. 1804. Pl. ½ to ¾ foot.

105 D. SERÓTINUS (Waldst. et Kit. hung. 2. p. 188. t. 172.) stems generally 1-flowered; calycine scales 6, somewhat ovate, bluntish, four times shorter than the calyx; petals multifid, almost naked; leaves awl-shaped, glaucous, ciliated. ♃. H. Native of Hungary. D. arenàrius, Towns, itin. hung. 3. p. 488. t. 16. D. plumàrius β, Wahl. fl. carp. p. 126. Flowers purplish or white.

Late-flowering Pink. Fl. Aug. Sep. Clt. 1804. Pl. ¾ to 1 ft.

106 D. SPRENGE'LII; stem 1-flowered; calycine scales ovate, cuspidate, 3 times shorter than the tube of the calyx; petals fringed, somewhat bearded; leaves linear, smooth. ♃. H. Native of the south of Germany. D. alpéstris, Sternb. ex Spreng. syst. 2. p. 381. Flowers white.

Alp Pink. Fl. June, July. Clt. Pl. ½ foot.

107 D. PETRÆ'US (Waldst. et Kit. hung. 3. t. 222.) stem usually 1-flowered; calycine scales obovate, mucronate; petals beardless, multifid; leaves awl-shaped, entire, glabrous, nerved. ♃. H. Native of Hungary. Flowers white, usually with a dark circle.

Var. β; flowers larger; petals deflexed. ♃. H. D. petræ'us, Sims, bot. mag. 1204. Flowers whitish.

Rock Pink. Fl. June, Aug. Clt. 1804. Pl. ½ foot.

108 D. ARENA'RIUS (Lin. spec. 589.) stems generally 1-flowered; calycine scales ovate, obtuse; petals multifid; leaves linear. ♃. H. Native of the colder parts of Europe in sandy places. Sims, bot. mag. t. 2038. Petals divided beyond the middle of the disk into very narrow lobes, furnished with a livid spot and pressed purple hairs at the base of each, the rest white. Perhaps a variety of *D. plumàrius*.

Sand Pink. Fl. May, July. Clt.? Pl. ½ foot.

109 D. CRINI'TUS (Smith in Lin. soc. trans. 2. p. 300. fl. græc. 401.) stem 1-flowered; calycine scales 4, oval, mucronate, somewhat diverging, three times shorter than the tube; petals multifid, beardless. ♃. H. Native of the Levant. Willd. spec. 2. p. 678. Petals white, divided into capillary segments. A spreading plant.

Hair-petalled Pink. Fl. July, Aug. Pl. ½ foot.

110 D. ARRO'STII (Presl. ex Spreng. syst. p. 179.) stems tufted, usually 1-flowered; calycine scales 4, emarginate, mucronate, 4 times shorter than the tube of the calyx; petals fringe-toothed, beardless; leaves linear, channelled, glaucescent, stiff, serrulated. ♃. H. Native of Sicily.

Arrost's Pink. Fl. June, July. Pl. ½ foot.

** *Stems branched. Flowers solitary, aggregate, or panicled.*

111 D. SUAVE'OLENS (Spreng. nov. prov. 16.) stem erect, smooth; flowers somewhat corymbose; calycine scales ovate-lanceolate, acute, adpressed, shorter than the calyx; petals multifid, bearded, spotted; leaves linear-lanceolate, glaucous, nerveless, with scabrous margins. ♃. H. Native? Received under the name of *D. Chinénsis*. Flowers white, spotted with purple?

Sweet-scented Pink. Fl. Ju. Aug. Clt. 1820. Pl. ½ to ¾ ft.

112 D. SI'CULUS (Presl. ex Spreng. syst. p. 179.) stem tufted, few-flowered; calycine scales about 6, obovate, mucronate, 3 times shorter than the tube of the calyx; petals fringe-toothed; leaves linear, channelled, ciliately-scabrous, glaucous. ♃. H. Native of Sicily. Flowers pale red.

Sicilian Pink. Fl. June, July. Clt. 1828. Pl. ½ foot.

113 D. A'LBENS (Ait. hort. kew. ed. 1. vol. 2. p. 90. ed. 2. vol. 3. p. 8.) stems branched; flowers solitary; calycine scales 4, lanceolate, short; petals emarginate. ♃. G. Native of the Cape of Good Hope. Differing from *D. deltoìdes*, in the petals being hardly crenated, and destitute of the purple circle. Leaves very narrow, striated, and serrulated. Calyx very long. Petals ovate, dentately fringed at the apex, white. Perhaps *D. crenàtus*, Thunb. no. 76. and *D. Burchéllii*, Ser. no. 57.

Whitish Pink. Fl. Aug. Clt. 1787. Pl. 1 to 3 feet.

114 D. SERRULA'TUS (Desf. fl. atl. 1. p. 346.) stem erect,

few-flowered; leaves linear-lanceolate, serrulated; peduncles 1-flowered; outer calycine scales imbricated, ovate, acute, shorter than the inner ones and calyx; petals fringed. ♃. H. Native of Tunis in sand. Corolla pale rose-coloured, one-half smaller than those of *D. plumàrius*. (Desf.)

Serrulated-leaved Pink. Fl. June, Aug. Pl. 1 foot.

115 D. pluma`rius (Lin. spec. 589. hort. ups. 105. no. 4.) glaucous; stem 2-3-flowered; teeth of calyx obtuse; calycine scales somewhat ovate, very short, mucronulate, close pressed; petals jagged, multifid, bearded, leaves linear, with scabrous margins. ♃. H. Native of Europe? D. dùbius, Horn. hort. hafn. 1. p. 408? D. moschàtus, hort. Par. *D. plumàrius* is the type of the common garden Pink. In France it is called *Mignardise*. The flowers are either double or single, white, purple, spotted or variegated, and more or less fringed on the margins, sweet-scented.

Var. β, horténsis (Ser. mss. and D. C. prod. 1. p. 363.) petals bearded in the throat. D. horténsis, Schrad. ex Willd. enum. p. 469.

Var. γ, Portènsis (Ser. mss. and D. C. prod. 1. p. 363.) leaves smaller; petals hardly fringed. D. Portènsis, Libosch. ex herb. Balb.

From *D. plumàrius* spring all the varieties of the common garden pink. As a florist flower the *Pink* is of much less antiquity than the *Carnation;* it is scarcely mentioned by Gerarde, and Parkinson gives very few varieties. It was chiefly grown as a border flower till within the last 50 years, since which it has been greatly improved, and many fine varieties originated. Being one of the hardiest and least expensive of fine flowers, it is much cultivated by operative mechanics and manufacturers round large towns, and no where to such an extent as at Paisley by the weavers there. The varieties most cultivated are chiefly those called Pheasants'-eyes. Cob Pinks are a large sort seemingly intermediate between pinks and picotee carnations; red early pinks are smaller plants than Cobs or Pheasants'-eyes, and seem to have sprung from Cobs and *D. armèria*, or *D. deltoìdes*. The Paisley growers reckon above 300 hundred varieties of the Pheasants'-eyes. Parkinson in 1629 only mentions 6 or 8 sorts. Ray in 1704 says there are many sorts, but of little esteem. Hogg in 1820 gives a list of 100 names, containing the best sorts in England. Davey, who has raised numerous fine varieties, enumerates double that number. The culture and propagation of the Pink is the same as that of the Carnation, excepting that it is less frequently kept in pots or frames, but planted in beds of fresh loamy soil, or into the flower border, and the small side shoots reduced in the autumn, in order to throw more strength into those intended to produce flowers the following season.

Criterion of a fine double Pink. "The stem should be strong and erect, and not less than 12 inches high. The calyx smaller and shorter than that of the carnation, but nearly similar in proportion, as well as in the formation of the flower, which should not be less than 2 inches and a half in diameter. The petals should be large, broad, and substantial, and have very fine fringed or serrated edges, free from deep notches or indentures; in short, they approach nearest to perfection when the fringe or the edge is so fine as scarcely to be discernible, but if they could be obtained entire it would be a very desirable object. The broadest part of the lamina or broad end of the petals, should be perfectly white and distinct from the eye, unless it be a laced pink, that is, ornamented with a continuation of the colour of the eye round it, bold, clean, and distinct, having a considerable proportion of white in the centre, perfectly free from tinge or spot. The eye should consist of a bright or dark rich crimson or purple, resembling velvet, but the nearer it approaches to black, the more it is esteemed; its proportion should be about equal to that of the white, that it may neither appear too large nor too small." *Maddock.*

Propagation. Pinks are ordinarily increased by pipings or cuttings, sometimes by layers to preserve rare sorts, and by seed for new varieties. The time to commence putting in pipings is previous to or during the time of flowering, or as soon as the barren shoots are grown of a sufficient length for that purpose. Hogg commences about the 21st of June. The operation is the same as for pipings of carnations, only some do not apply bottom heat. This last, however, is the more certain mode, and the pipings are ready to remove sooner, and generally in a fortnight or three weeks. For seed proceed as directed for carnations.

Soil. Maddock says, A good fresh loamy soil dug 2 feet deep, and manured with a stratum of cow-dung, 2 years old, mixed with an equal proportion of earth; this stratum to be about 6 inches thick, and placed 5 or 6 inches below the surface, is all the preparation that appears necessary for this flower.

General culture. As soon as the pipings are struck, they are to be removed and planted on a bed of common garden mould, and after a few weeks the strongest of them should be removed into the blooming bed. This bed should be raised 3 or 4 inches above the paths. The plants intended for the principal bed for bloom should be planted upon it in August, or early in September, as they do not blow quite so well if removed later in the season; they should be planted at about the distance of 9 inches from each other, and the bed should be laid rather convex or rounding, to throw off excess of rain, but will require no other covering than a very slight one, in case of severe frost. The surface of the bed should be stirred up a little as it inclines to bind or become firm. There should never be more than 10 or 12 flowers allowed to bloom on the same plant, the lateral smaller buds should be pulled off a month or 6 weeks before blooming, taking care always to leave the leading bud which terminates the shoot; by this means the flowers will be much larger than they otherwise would be. Strong healthy plants, consisting of a leading stem in the centre, with but little surrounding increase, are the best to select for the best bed, these will seldom put up more than 1 or 2 stems, which will, however, be very strong, grow tall, and produce 3 or 4 flowers, as large and fine as the kind is capable of.

Those buds which become much swelled nearly at the time of flowering, and appear in danger of bursting, should be tied up in the same manner directed for carnations. It is very desirable to have a long calyx, for it is hardly possible to prevent those with short calyxes from bursting. But in this case it is much better to assist nature by making an incision at each tooth of the calyx, as far down as may be thought necessary, in order to let the petals regularly out on every side, and preserve the circular form of the blossoms; for if left to nature, the calyx will burst on one side only, and produce a loose irregular unsightly flower. When the flower-stems are grown sufficiently long they should be supported with small sticks, but these ought to be tied in such a manner as to keep the blossoms distinct from each other, that the whole may have an easy graceful appearance. Those who can bestow sufficient time and attention to the bloom of pinks, may contribute greatly to their effect by placing circular cards in the manner directed for carnations, but as these cards are apt to warp from heat and wet, it is necessary to replace them from time to time: however, some sorts do not require any assistance of this kind, particularly if their guard petals are sufficiently strong to support the rest. At the time of bloom, which is about the end of June, it is proper to defend the bed by an awning or covering: they, however, should always enjoy the advantage of light and air, and the soil should be kept regularly moist by soft water administered between the plants, carefully avoiding to wet the blossoms. *Maddock, Florist Direct.* p. 220.

Hogg says that those which are removed or transplanted in the spring never do well, nor shew half the beauty which those do that were planted in August or September; the laced pinks in particular appear almost plain, and without their distinguishing character. Pinks should never be suffered to remain more than 2 years without either change of soil or situation.

Emmerton (Treatise on Auricula, p. 191.) says, your pink-beds should be top dressed in the spring if you have a desire to excel in blooms, with some old night-soil or sugar-bakers' scum, finely sifted and sown over them. Your strong blowing plants should not be allowed to bloom more than 8 or 10 blossoms, and those that are weaker, of a less size, not more than 4.

Common Garden or *Feathered* Pink. Fl. June, Aug. Clt. 1629. Pl. ¾ to 1 foot.

116 D. SAXA'TILIS (Pers. ench. 1. p. 494.) tufted, somewhat decumbent; stem 2-3-flowered; calycine scales ovate, distinct, with longish points, shorter than the tube; petals multifid. ♃. H. Native of France on rocks near Clermont. Leaves not glaucous. Corolla not pubescent in the throat, white.

Stone Pink. Fl. June, July. Clt. 1816. Pl. ½ foot.

117 D. PUNCTA'TUS (Spreng. neue. entd. 2. p. 169.) stem erect, branched, few-flowered; calycine scales 4, bluntish, very short, pressed to the calyx; petals bearded, multifid, spotted; leaves glaucous, linear, flaccid. ♃. H. Native? Flowers pale lilac or white, spotted. Lodd, bot. cab. 896.

Spotted-petalled Pink. Fl. Ju. Aug. Clt. 1823. Pl. ¾ foot.

118 D. PROSTRA'TUS (Jacq. hort. schœnb. 3. p. 11. t. 271.) stems shrubby, prostrate at the base, but erect at the apex; flowers in lax panicles; calycine scales 4, lanceolate, acute, 3 times shorter than the elongated calyx; petals fringed, glabrous; leaves linear, very entire. ♄. G. Native of the Cape of Good Hope. Allied to *D. fimbriàtus* or *supérbus*. Flowers pale-red.

Prostrate Pink. Fl. June, July. Clt. 1824. Pl. prostrate.

119 D. FIMBRIA'TUS (Bieb. fl. taur. 1. p. 332. suppl. p. 302.) stem suffruticose at the base, branched; flowers solitary; calycine scales 6, lanceolate, shorter than the calyx; petals oblong, multifidly toothed, beardless; leaves awl-shaped, scabrous. ♄. H. Native of Iberia on rocks about Tiflis. D. orientàlis, Sims, bot. mag. t. 1069. D. contórtus, Smith in Rees' cyclop. vol. xi. Flowers like those of *D. plumàrius*, but smaller, rose-coloured, rarely white.

Fringed-petalled Pink. Fl. June, Aug. Clt. 1815. Pl. 1 ft.

120 D. PLUMO'SUS (Spreng. pugill. 2. p. 64.) flowers few, solitary; calycine scales lanceolate-linear, erect, a little shorter than the tube; petals bearded, deeply multifid; leaves linear, nerved, flaccid. ♃. H. Native of mount Baldo. Flowers red and sometimes white.

Feathery-petalled Pink. Fl. July, Septemb. Clt.? Pl. ½ to 1 foot.

121 D. MONSPESSULA'NUS (Lin. amœn. 4. p. 313. spec. p. 588.) stem panicled, few-flowered; flowers solitary; calycine scales awl-shaped, straight, one-half shorter than the tube; petals digitately multifid, smooth in the throat; leaves linear, serrulated. ♃. H. Native of the Pyrenees and Jura. D. Monspelìacus, D. C. fl. fr. no. 4324. D. Sternbérgii, Schleich. Flowers red?

Var. β, *brevifòlius* (Ser. mss. and D. C. prod. 1. p. 365.) leaves and stems short. ♃. H. Native of the Pyrenees near St. Jean de Luz.

Montpelier Pink. Fl. July, Aug. Clt. 1764. Pl. ½ to 1 ft.

122 D. SUPE'RBUS (Lin. amœn. 4. p. 272. spec. 589.) stem smooth, panicled, many-flowered; flowers somewhat fastigiate; calycine scales short, ovate, mucronate; petals divided beyond the middle, feathery, bearded at the base. ♃. H. Native of mountainous groves and shady meadows in many parts of Europe. Delaun. herb. amat. t. 21. Sims, bot. mag. t. 297. Caryophýllus sylvéstris vi. Clus. hist. 1. p. 284. Flowers rose-coloured, very fragrant, particularly at night.

Var. β, *rubicúndus* (Ser. mss. and D. C. prod. 1. p. 365.) petals purple.

Superb Pink. Fl. July, Sep. Clt. 1596. Pl. 1 to 2 feet.

123 D. FISCHE'RI (Spreng. cat. sem. hort. hall. 1810. pl. min. cogn. 2. p. 62.) stem panicled, many-flowered; flowers somewhat aggregate; calycine scales ovate, pointed, erect, one-half shorter than the tube; petals multifid, almost beardless; leaves lanceolate, serrulated. ♃. H. Native near Moscow. Sweet, fl. gard. 245. Petals rose-coloured.

Fischer's Pink. Fl. July, Aug. Clt. 1820. Pl. 1 foot.

124 D. LIBANO'TIS (Labill. pl. syr. 1. p. 14. t. 5.) stem erect; flowers rather aggregate; calycine scales 6, acuminated, divaricating, shorter than the tube; petals multifid, bearded; leaves lanceolate. ♃. H. Native of Mount Lebanon. Flowers rose-coloured.

Rosemary Pink. Fl. June, Aug. Pl. 1 foot.

† *A species belonging to section Armenástrum and should follow D. capitàtus.* No. 20. p. 385.

125 D. PO'NTICUS (Wahl. in Isis. 1828. vol. 21. cah. 10. p. 972.) flowers in fasciculate heads; involucre oblong, membranous, smooth, acuminate, length of calyx and bracteas; petals crenate, quite smooth; leaves sheathing. ♃. H. Native of the East on hills behind Sarijari. This plant is like *D. Carthusianòrum* and *D. capitàtus*.

Pontic Pink. Pl. 1 to 1½ foot.

Cult. Most of the species of this genus are highly valued, not only for the beauty of their flowers, but as being evergreens; their foliage in winter being as abundant and vivid as in summer. The fragrance of some of the species is peculiarly grateful. Many of them are well adapted for ornamenting rock-work or the front of flower borders, but the rarer kinds should be grown in pots, that they may be protected by a frame during winter. They may be increased by seeds or by cuttings (the latter mode is preferable), which should be planted under a hand-glass. A light loamy soil, mixed with a little rotten dung, or decayed leaves and sand, suits them best. For the manner of making cuttings, and time at which they should be planted, see *D. caryophýllus* and *D. plumàrius*. The annual and biennial species only require to be sown in the open border.

IV. SAPONA'RIA (from *sapo*, soap; so called because the bruised leaves are said to produce a lather like soap when agitated in water). Lin. gen. no. 769. D. C. prod. 1. p. 365.

LIN. SYST. *Decándria*, *Digýnia*. Calyx tubular, 5-toothed, naked at the base. Petals unguiculate; claws equal in length to the calyx. Stamens 10. Styles 2. Capsules 1-celled.

SECT. I. VACCA'RIA (from *vaccarius*, a cow-herb; this plant was said to be sought after by cowherds, because it was believed to excite the lacteal secretion in cows). Dod. pempt. 104. D. C. prod. 1. p. 365. Flowers panicled. Calyx inflated, angular, smooth. This section does not appear to differ materially from *Gypsóphila*.

1 S. VACCA'RIA (Lin. spec. 585.) flowers panicled; calyxes pyramidal, smooth, 5-angled; bracteas membranaceous, acute; leaves ovate-lanceolate, sessile. ⊙. H. Native among corn in many parts of Europe, particularly France, Germany, Switzerland and the Levant. Sims, bot. mag. 2290.—J. Bauh. hist. 3. p. 357. f. 2. (bad). Lychnis vaccària, Scop. fl. carn. no. 511. Gypsóphila vaccària, Smith, fl. græc. 380. Flowers red.

Var. β, *grandiflòra* (Fisch. in litt.) petals broad. ⊙. H. Native of Iberia. Petals naked, crenate, emarginate.

Cow-herb Soapwort. Fl. Jul. Aug. Clt. 1596. Pl. 1 to 2 ft.

2 S. PERFOLIA'TA (Roxb. hort. beng. p. 34. Willd. enum.

p. 464.) flowers panicled; calyxes pyramidal, 5-angled, glabrous; bracteas leafy, acute; leaves oblong-lanceolate, connate at the base. ⊙. H. Native of the East Indies. Flowers red. Perhaps only a variety of *S. vaccària*. Petals naked.

Perfoliate Soapwort. Fl. Jul. Aug. Clt. 1800. Pl. 1 to 2 ft.

3 S. dioi'ca (Schlecht. et Cham. in Linnæa. 1. p. 38.) flowers dioecious, panicled; calyx egg-shaped, 5-angled at the base, smooth; bracteas leafy, acute; leaves lanceolate, sessile. ⊙. H. Native of Buenos Ayres. Gypsóphila dioíca, Spreng. syst. append. p. 178. Like *S. vaccària*. Flowers reddish, on long peduncles. Petals naked.

Dioecious Soapwort. Fl. July, Aug. Pl. 1 to 2 feet.

Sect. II. Boo'tia (evidently from the name of some botanist). Neck. delic. gallo-belg. 1. p. 193. Flowers disposed in panicled bundles. Calyx terete, usually hairy. Petals crowned.

4 S. officina'lis (Lin. spec. 584.) flowers disposed in dense panicled bundles; calyx cylindrical, villous, yellowish; appendages of petals cloven; leaves elliptic-lanceolate, acute or obtuse. ♃. H. Native of many parts of Europe by road sides. In Britain in meadows by river sides and under hedges. Smith. engl. bot. 1060. Curt. fl. lond. fasc. 2. t. 29. Fl. dan. t. 543. Wood. suppl. t. 251. Ludw. ect. t. 170. Boòtia vulgàris, Neck. delic. gallo-belg. 1. p. 193. Flowers either single or double, of a rose or pink colour, seldom white. The double variety of this plant is considered a very ornamental border-flower, but is inconvenient unless kept in pots, from its spreading very much by the roots, which creep underground like those of couch. The leaves form a lather like soap, and take out spots of grease in the same manner. The whole plant is bitter, and a decoction of it was formerly used to cure the itch, syphilis, and jaundice.

Var. β, glabérrima (Ser. mss. and D. C. prod. 1. p. 365.) leaves and calyxes very smooth.

Var. γ, hýbrida (Lin. spec. 584.) some of the upper leaves combined and sheathing, with a monopetalous corolla. ♃. H. Native of England. Found by Gerarde in Northamptonshire and on sandy hills 7 miles north of Liverpool.—Mor. hist. 2. p. 548. sect. 5. t. 22. f. 52.

Officinal Soapwort. Fl. Jul. Oct. Engl. Pl. 1 to 1½ foot.

5 S. ocymoi'des (Lin. spec. 585.) stems procumbent, dichotomous; flowers in panicled bundles; calyx cylindrical, villous, purple, beset with glandular hairs; leaves ovate-lanceolate, generally 1-nerved. ♃. H. Native of many parts of Europe, particularly Switzerland, Italy, south of France and Austria on calcareous rocks. Jacq. fl. aust. 5. t. 23. Curt. bot. mag. 154. Cav. icon. 2. p. 29. t. 134. An elegant trailing plant with red or pink flowers, well adapted for ornamenting rock-work.

Basil-like Soapwort. Fl. May, Aug. Clt. 1768. Pl. prostrate.

6 S. Cala'brica (Guss. pl. rar. p. 164. t. 31.) root fibrous; stem erect, dichotomously-branched; leaves obovate-spatulate, usually 1-nerved; flowers axillary, solitary; calyx cylindrical, beset with glandular villi; petals orbicular, narrowed at the base; seeds tubercular, rather globose. ⊙. H. Native of Calabria on arid hills. Flowers beautiful rose-coloured. This plant differs from *S. ocymoìdes*, which it is very much like, in the root being annual and the stem being erect. Leaves smooth, or slightly pubescent, ciliated on the margins.

Calabrian Soapwort. Fl. May. Pl. ½ to 1 foot.

7 S. glutinòsa (Bieb. fl. taur. 1. p. 322. cent. 2. t. 66.) stem erect branched; flowers panicled, in corymbose bundles; calyx long, terete, beset with glandular hairs; leaves ovate, 3-nerved. ♂. H. Native of Tauria on the mountains. Hook. bot. mag. t. 2855. Silène armèria, Pall. ind. taur. Flowers about the size of those of *Silène conoìdea*. Petals minute, blood-coloured, bidentate at the top, crowned with scales in the throat.

Clammy Soapwort. Fl. Ju. Jul. Clt. 1817. Pl. 1½ foot.

Sect. III. Protei'nia (from προτεινω, *proteino*, to stretch out; in allusion to the flowers standing on long peduncles). Ser. mss. and D. C. prod. 1. p. 366. Flowers solitary, axillary, or terminal. Petals 2-parted, usually naked. Calyx hairy, rarely smooth.

8 S. po'rrigens (Lin. mant. 239.) stem erect; branches divaricating, hairy, viscid; flowers axillary, on long stalks; peduncles filiform; calyx terete; fruit egg-shaped, drooping; leaves lanceolate, connate. ⊙. H. Native of the Levant. Jacq. hort. vind. 2. p. 49. t. 109. Silène pórrigens, Gouan. ill. 29. Petals flesh-coloured. Stamens white.

Stretching-peduncled Soapwort. Fl. July, Aug. Clt. 1680. Pl. 1 to 2 feet.

9 S. orienta'lis (Lin. spec. 585.) stem dichotomous; branches divaricating; flowers axillary and terminal; peduncles stiff, equal in length with the flower, and are rather hispid, as well as terete, ovate calyx; segments of calyx acute; leaves linear-spatulate. ⊙. H. Native of the Levant and Carniola.—Dill. elth. 205. t. 167. f. 204. Stems much branched at the top. Flowers small, purplish.

Var. β, glabérrima; very smooth; branches divaricating much.

Oriental Soapwort. Fl. Jul. Aug. Clt. 1732. Pl. ½ foot.

10 S. cæspitòsa (Smith, fl. græc. t. 339.) plant tufted; stems simple, 1-flowered, few-leaved; calyx contracted at the base, glabrous; petals crowned; leaves spatulate, tufted. ♃. F. Native of Negropont on Mount Delphi. S. Smíthii, Ser. in D. C. prod. 1. p. 367. Flowers small, white; anthers purple.

Tufted Soapwort. Pl. ¼ foot.

11 S. saxa'tilis (Bory. ann. gen. 3. 1820. p. 13.) stems divaricating, dichotomous; leaves ovate-oblong, opposite, sessile; peduncles very long; petals emarginate. ♃. H. Native of Spain on rocks in Sierra Nevada.

Rock Soapwort. Pl. 1 to 2 feet.

Sect. IV. Bola'nthus (from βωλος, *bolos*, a ball, and ανθος, *anthos*, a flower; because the flowers are collected in heads). Ser. mss. and D. C. prod. 1. p. 366. Stems and leaves tufted. Flowers aggregate. Calyx terete, villous.

12 S. prostra'ta (Willd. enum. 465.) stem trailing; branches ascending, short; flowers corymbose, much crowded; calyx cylindrical, hairy; leaves oblong-spatulate. ♃. H. Native of Galatia. Corolla like that of *S. ocymoìdes*, but a little smaller.

Prostrate Soapwort. Fl. May, Aug. Pl. prostrate, long.

13 S. hirsu'ta (Labill. icon. pl. syr. dec. 4. t. 4. f. 2.) stems ascending, few-flowered; flowers terminal, somewhat capitate, sessile; calyxes 5-angled, and are hairy, as well as lanceolate leaves; petals very entire. ♃. F. Native of the Levant. Flowers pink.

Hairy Soapwort. Fl. June, July. Pl. ¼ to ½ foot.

14 S. depre'ssa (Biv. stirp. rar. manip. 2.) plant tufted; flowers somewhat umbellate, stalked; calyx very long, 5-angled, covered with clammy pubescence; petals bifid, crowned with acute scales; radical leaves tufted, elliptical-obovate, depressed. ♃. F. Native of gravelly or sandy hills in the open regions of Mount Etna. S. cæspitòsa, Biv. in Rafin. stat. gen. di. sicil. p. 27. Bon. t. 163. f. 1. S. Sícula, Rafin. specch. 2. p. 7. —Cupan. panphyt. t. 167. f. 1. Flowers terminal, large, rose-coloured.

Depressed-leaved Soapwort. Pl. ¼ foot.

15 S. e'legans (Lapeyr. abr. pyr. 238.) tufted; stems almost naked, bearing flowers at the top; flowers somewhat umbellate; calyxes cylindrical, villous, profoundly lobed; lobes acute; petals emarginate at the apex, with bifid appendages in the throat, the lobes of which are very narrow; leaves linear, glabrous, almost all radical, hardly toothed. ♃. H. Native of

sterile places on the higher Pyrenees. S. cæspitòsa, D. C. rap. voy. 2. p. 78. 1808. fl. fr. 5. p. 601. icon. Gall. rar. fasc. 2. ined. Habit of *S. lùtea*, but the flowers are larger and rose-coloured.

Elegant Soapwort. Fl. Jul. Aug. Clt. 1824. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

16 S. lu'tea (Lin. spec. 585. exclusive of the synonyme of Bocc.) tufted; stems 2-leaved; flowers capitate, involucrated; calyx cylindrical, woolly, with obtuse, short lobes; petals obovate, entire, naked; leaves linear, ciliated at the base, almost all radical. ♃. F. Native of the Alps of Vallais and Piedmont on Mount Cenis. All. fl. ped. no. 1560. t. 23. f. 1. Corolla yellow. Stamens violaceous. Habit of *Viscària alpìna*.

Yellow-flowered Soapwort. Fl. June, Aug. Clt. 1804. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

17 S. bellidifòlia (Smith, spic. bot. 5.) tufted; stems 4-leaved; flowers capitate, dense; calyx terete, hairy; petals linear, crenate; leaves ovate-lanceolate, with waved margins. ♃. F. Native of the highest mountains in Italy and Calabria, &c. Portenschlag. pl. dalm. t. 7. f. 2.—Bocc. mus. p. 75. t. 62. f. 1. Radical leaves, very like those of *Globulària*. Petals red. Stamens yellow.

Daisy-leaved Soapwort. Fl. Ju. Aug. Clt. 1825. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

Cult. All the species of *Saponària* are very ornamental. The *S. ocymoides* is one of the most beautiful plants we have in our gardens, and is well adapted for ornamenting rock-work. Those species belonging to section *Bolánthus* require to be kept in pots, that they may be protected during winter by a frame. A mixture of sand, loam, and peat suits them best, and the pots should be well drained with potsherds. They are all easily increased by parting the plants at the root or by seed; young cuttings of the branching species, planted under a hand-glass, will root freely. The annual and biennial kinds only require to be sown in the open border in spring.

V. CUCU'BALUS (altered from *Cacóbolus*, which is derived from *κακος, kakos*, bad, and *βολη, bole*, a shoot or sprig, that is to say, a plant destructive of the soil, a bad plant, a weed. The English name of this plant, *campion*, is derived from campus, a field; in allusion to its being a pest in fields). Gært. fruct. 1. p. 376. t. 77. f. 7. D. C. prod. 1. p. 367.

Lin. syst. *Decándria, Trigýnia.* Calyx campanulate, 5-toothed, naked. Petals 5, unguiculate, with a bifid limb. Capsules fleshy, 1-celled. Habit of plant very near to some species of *Silène*, but differs from all in the fruit being a black berry.

1 C. ba'ccifer (Lin. spec. 591.) branches divaricating; leaves ovate; calyx campanulate; petals distant. ♃. H. Native of Europe in shady places, particularly in Tartary, Germany, France, Switzerland, and Italy. Mill. icon. t. 112. Smith, engl. bot. t. 1577. Lychnánthus volùbilis, Gmel. act. petrop. 1759. vol. 14. p. 525. t. 17. f. 1. Silène báceifera, Willd. spec. 2. p. 700. Petals white, serrated. Notwithstanding Sir J. E. Smith has rejected this plant as not being of British origin, see engl. fl. vol. 2. p. 290. we have seen it growing plentifully along with *Silène inflàta*, by hedge sides, not far from Roslin Castle near Edinburgh, in the year 1817.

Berry-bearing Campion. Fl. May, Jul. Scotl. Pl. 1 to 2 ft.

Cult. This plant is not worth cultivating, except in botanical gardens. Any common soil will suit it, and it may be either increased by seeds or by dividing the plants at the root.

VI. SILE'NE (said to be derived from *σιαλον, sialon*, in allusion to the viscid frothy moisture on the stalks of many of the species, by which flies of the smaller kinds are entrapped, hence the English name of the genus, Catchfly. Du Theis deduces the name from the drunken god Silenus, whose name he supposes to have a similar origin). Lin. gen. no. 772. Gært. fr. 1. p. 376. t. 77. f. 7. D. C. prod. 1. p. 367.

Lin. syst. *Decándria, Trigýnia.* Calyx tubular, 5-toothed, naked. Petals 5, bifid, unguiculate, usually crowned in the throat with as many bifid scales. Stamens 10. Styles 3. Capsules 3-celled at the base, ending in 6 teeth at the apex.

Sect. I. Nanosile'ne (from *nanus*, dwarf, and *Silene*). Otth. mss. and D. C. prod. 1. p. 367. Plants tufted. Stems almost wanting. Calyx somewhat inflated. Scapes or peduncles 1-flowered.

1 S. acau'lis (Lin. spec. 603.) glabrous; stems dense, humble; leaves linear-lanceolate; flowers dioecious from abortion; peduncles solitary, short, 1-flowered; calyx campanulate; petals obovate or obcordate. ♃. H. Native of many parts of Europe on the Alps. In Britain on the summits of the loftiest mountains; upon the steep and higher rocks of Snowden; almost every where on all the elevated mountains of Scotland, and when in flower constitutes one of the most charming ornaments of the Scottish Alps. The plant has lately been found by Chamisso in the islands of Unalaschka, St. George, and St. Lawrence, on the west coast of America. Smith, engl. bot. t. 1081. Lightf. 227. t. 12. f. 1. Fl. dan. t. 21. Sims, bot. mag. 1881. All. ped. t. 79. f. 1. Flowers small, of an elegant rose-colour.

Var. α, mas (D. C. prod. 1. p. 367.) flowers larger, on longer stalks; stamens protruding; ovary and styles abortive. S. acaúlis, Lin. spec. 603. D. C. fl. fr. 4. p. 749.

Var. β, fœ'mina (D. C. prod. 1. p. 367.) flowers smaller, almost sessile; stamens abortive; styles protruding a long way. S. éxscapa, All. ped. no. 1584. t. 79. f. 2. S. acaúlis *β*, éxscapa, D. C. fl. fr. 4. p. 749.

Var. γ, elongàta (D. C. fl. fr. 4. p. 749.) peduncles elongated; flowers male.

Var. δ, parviflòra (Otth. mss. and D. C. prod. 1. p. 367.) peduncles wanting; flowers small, female.

Var. ε, álba (Otth. mss. and D. C. prod. 1. p. 367.) flowers white, growing along with var. *α* on the Scottish Alps.

Var. ξ, plèna (Otth. mss. and D. C. prod. 1. p. 367.) flowers large, of many petals. Native on mount Joms in the alps of Rhætia.

Stemless Catchfly or Moss Campion. Fl. June, July. Britain. Pl. 1 to 2 inches.

2 S. Dina'rica (Spreng. syst. 2. p. 405.) stem tufted; leaves linear, elongated, smooth; peduncles erect, pubescent; calyx hairy, blackish; petals bifid. ♃. H. Native of Transylvania. Flowers white or red. S. deprèssa, Baumg.

Dinarian Catchfly. Pl. $\frac{1}{4}$ foot.

3 S. pumi'lio (Sturn. deutschl. fl. 1. fasc. 22. t. 11.) stems less dense than in *S. acaúlis*; leaves linear-spatulate, rather pubescent; peduncles or scapes short, 1-flowered; calyx inflated, hairy. ♃. H. Native of the alps of Germany. Cucùbalus pumílio, Lin. mant. 71. Wulf in Jacq. coll. 2. p. 126. t. 10. Jacq. aust. 5. app. t. 2. Flowers large; petals obcordate, crowned.

Var. β, álba (Otth. mss. and D. C. prod. 1. p. 367.) flowers white. Sturm. l. c.

Dwarf Catchfly. Fl. Ju. Aug. Clt. 1823. Pl. 2 to 3 inches.

Sect. II. Behena'ntha (from *Behen*, the Bladder Campion, *ανθος, anthos*, a flower; in allusion to the calyx of all the species contained in this section being bladdery). Otth. mss. D. C. prod. 1. p. 367. Caulescent. Flowers solitary or panicled. Calyx inflated, bladdery.

* *Petals jagged or fringed.*

4 S. fimbria'ta (Sims, bot. mag. t. 980.) pubescent; leaves large, ovate-lanceolate, on long footstalks, undulated; flowers

in large spreading panicles; calyx greatly inflated, with broad teeth; petals fringed, incurved after flowering. ♃. H. Native of Crete, Sicily, and Caucasus. Cucùbalus fimbriàtus, Bieb. fl. taur. 1. p. 333. suppl. 303. Flowers white.

Fringed-petalled Catchfly. Fl. May, Aug. Clt. 1803. Pl. 2 to 4 feet.

5 S. la'cera (Sims, bot. mag. t. 2255.) hispid; leaves ovate-lanceolate, undulated, on long footstalks; calyxes greatly inflated; petals jagged, with the appendages 2-parted; alternate stamens deflexed. ⊙? H. Native of Caucasus in the alps. Cucùbalus lácerus, Bieb. fl. taur. 3. p. 303. Flowers white.

Jagged-petalled Catchfly. Fl. May, Aug. Clt. 1818. Pl. procumbent, 1½ foot long.

6 S. stella'ta (Ait. hort. kew. 2. p. 84.) stems erect, branched, pubescent; leaves 4 in a whorl, lanceolate, acuminated, glabrous; flowers panicled; calyxes bladdery, pubescent; petals fringed. ♃. H. Native of North America on hills and in shady woods from New England to Virginia and in Canada. Sims, bot. mag. 1107. Flowers white, without a crown.

Stellate-leaved Catchfly. Fl. June, Aug. Clt. 1696. Pl. 1 to 1½ foot.

* *Petals bifid.*

7 S. Coulteria'na (Otth. mss. in D. C. prod. 1. p. 368.) very smooth; stem branched; leaves small, linear-lanceolate; flowers in spreading panicles; those flowers in the forks of the panicle are on very long stalks; calyx somewhat spherical, greatly inflated; petals with the claws wedge-shaped, and with the limb 2-parted, into broad, somewhat truncate lobes. ♃? H. Native of Iberia and about Constantinople. Flowers white.

Coulter's Catchfly. Fl. June, July. Pl. 1 foot.

8 S. infla'ta (Smith, fl. brit. 467.) stems branched; flowers panicled; calyx bladdery; petals bifid, naked; claws of petals wedge-shaped; styles very long. ♃. H. Native very common throughout Europe. Common in Britain in fields, pastures, and by way-sides. Fl. græc. 293. Cucùbalis Bèhen, Lin. spec. 591. Smith. engl. bot. t. 164. Fl. dan. 914. Bull. fr. t. 321. Flowers white, drooping. Plant glaucous.

Var. α, vulgàris (Otth. mss.) smooth; leaves lanceolate.

Var. β, hirsùta (Smith, engl. fl. 2. p. 291.) hairy; leaves broad, lanceolate. Near Cromer, Norfolk, and near Edinburgh.

Var. γ, angustifòlia (D. C. fl. fr. 4. p. 741.) smooth; leaves linear. Cucùbalus angustifòlius, Schrank. hort. monac. t. 83. Ten. fl. nap. t. 37.

Var. δ, rùbra (Ram. pyr. ined.) petals purple. In the Pyrenees and the Alps about Bern in Switzerland.

Var. ε, viridiflòra (D. C. fl. fr. 4. p. 747.) calyx leafy, profoundly 5-lobed; petals half abortive, green. Cucùbalus víridis, Lam. dict. 2. p. 221.

Var. ζ, castràta (Lapeyr. abr. pyr. 247.) unisexual; petals abortive. In humid meadows of the Pyrenees.

Var. η, uniflòra (Otth, mss.) humble, glabrous; flowers solitary, rarely in twos or threes. In the Alps. S. uniflòra, Roth. cat. 1. p. 52. This is probably a variety of *S. marítima*.

This species may be used as a substitute for *asparagus* or *green peas*, the young shoots having the flavour of both. They ought to be gathered when about two inches long, and the more they are blanched the better. Bryant (Fl. Dietetica) says its culture would well reward the gardener's trouble. In Gothland they apply the herb externally in erysipelous eruptions. The leaves boiled have also somewhat the flavour of peas, and proved of great use to the inhabitants of Minorca in 1685, when a swarm of locusts had destroyed the harvest.

Inflated or Bladder Catchfly. Fl. July. Brit. Pl. ½ to 3 ft.

9 S. mari'tima (With. 414.) root creeping; stems prostrate, branched; flowers slightly panicled, or solitary, terminal; calyxes bladdery; petals bifid; with a bifid scale at the base of each at the throat; claws of petals wedge-shaped; styles occasionally 4 or 5; leaves lanceolate. ♃. H. Native of many parts of Europe on the sandy and stony sea-coast, as well as in the beds of alpine torrents in Britain. Smith, engl. bot. 957. S. amœ'na, Huds. 188. S. inflàta *β*, Hook. scot. 135. *δ*. D. C. prod. 1. p. 368. Cucùbalus Bèhen *β*, Lin. spec. 591. Fl. dan. 857. Plant glaucous. Stems prostrate. Flowers white, larger than those of *S. inflàta*.

Var. β, màjor; plant larger.

Sea Campion or Catchfly. Fl. July, Sept. Brit. Pl. ¼ to ½ ft.

10 S. faba'ria (Willd. spec. 2. p. 685. Smith, fl. græc. 315.) smooth, glaucous; stems erect, dichotomous; flowers in racemose fascicles; calyx bladdery; petals 2-parted, narrowed, with 2-parted, emarginate appendages; leaves obovate, fleshy, acute. ♃. H. Native of Sicily and the Grecian islands. Cucùbalus fabàrius, Thore, chl. land. 172.? S. uniflòra *γ*, D. C. fl. fr. 4. p. 747.?—Bocc. mus. 133. t. 92. Flowers white or pale red.

Bean-leaved Catchfly. Fl. Jul. Sept. Clt. 1731. Pl. 1 to 3½ ft.

11 S. ova'ta (Pursh, fl. amer. sept. 1. p. 316.) stem simple; leaves ovate-lanceolate, acuminated; flowers panicled; calyx ovate, inflated; stamens protruding. ♃. H. Native of the western part of Georgia and Carolina. Flowers pale red or white. Perhaps a variety of *S. inflàta*.

Var. β, flòre-plèno (D. C. prod. 1. p. 368.) flowers double. Cucùbalus polypétalus. Walt. fl. carol. 141.?

Ovate-leaved Catchfly. Fl. July, Aug. Clt. 1820. Pl. 1 ft.

12 S. Be'hen (Lin. spec. 599.) plant glabrous and glaucous; leaves obovate-lanceolate, mucronulate, lower ones stalked, upper ones ovate-lanceolate, sessile; flowers panicled; calyx oval, inflated, veiny; petals 2-parted; lobes very short and obtuse, with the appendages 2-parted and emarginate. ♂. H. Native of Candia. Smith, fl. græc. 416. Lychnis vesicària, Lin. l. c.—Dill. elth. 427. t. 317. f. 409. Flowers pale pink.

Bladdery Catchfly. Fl. June, Aug. Clt. 1713. Pl. 1½ ft.

13 S. cæ'sia (Smith, fl. græc. t. 417.) plant smooth, glaucous; stems numerous, branched; leaves obovately roundish; flowers corymbosely-panicled; petals 2-parted, narrow, with 2-parted entire appendages; calyx obovate, 10-nerved. ♃. H. Native of Mount Parnassus. Flowers greenish-white. Habit of *Silène inflàta*.

Grey Catchfly. Fl. June, July. Pl. 1 foot.

14 S. lævига'ta (Smith, fl. græc. 418.) plant smooth, glaucous; branched from the base; stem paniculately-dichotomous; leaves elliptically-roundish, obtuse, upper ones more acute; petals deeply emarginate, obtuse, without any appendages. ⊙. H. Native of the island of Cyprus on the mountains. Flowers small, red, erect, with one always in the forks of the stem.

Smoothed Catchfly. Pl. ½ foot.

15 S. I'ndica (Roxb. hort. beng. p. 34.) canescent; stems ascending, branched; leaves large, lanceolate, acute; flowers solitary, stalked, drooping; calyx inflated, tomentose, netted; teeth of calyx broad, blunt, with scarious margins; petals 2-lobed, crowned by entire appendages. ⊙. H. Native of Nipaul. Flowers purple.

Indian Catchfly. Fl. July, Aug. Clt. 1823. Pl. 3 to 4 ft.

16 S. lanuginòsa (Bertol. journ. bot. 4. p. 76.) plant shrubby, tufted; stems woolly; leaves lanceolate-linear, 3-nerved, with woolly margins, lower ones very long; calyx ovate, inflated, pubescent; petals bifid (quadrifid according to Bertol). ♃. H. Native of Italy. Lychnis alpìna, Bert. l. c. Till. cat. 4. pil. 105. t. 41. f. 2. Flowers white.

Woolly Catchfly. Pl. 1 foot.

17 S. auricula'ta (Smith, fl. græc. t. 435.) plant tufted, woody at the base; stem pubescent, 1-flowered; flower terminal; lower leaves rosulate, lanceolate, mucronate, fringed,

upper ones pubescent, opposite, usually 6; calyx campanulate, inflated; petals 2-parted, with an auricle on each side, hence quadrifid, with bifid, entire, divaricate appendages. ♃. H. Native of Negropont on Mount Delphi. Habit of plant and size of flowers like that of *S. pumílio*.

Auricled-petalled Catchfly. Pl. ½ foot.

18 S. GRAMINIFÒLIA (Otth. mss. in D. C. prod. 1. p. 368.) plant glabrous; stem erect, simple, very leafy at the base, almost naked above; leaves linear, scarcely ciliated; flowers in panicled spikes; peduncles opposite, sometimes longer than the calyx, sometimes shorter; calyx ovate, 10-striated; petals semibifid, with ciliated claws. ♃. H. Native of the Altaian mountains. Flowers white.

Grassy-leaved Catchfly. Fl. Jun. Jul. Clt. 1819. Pl. 1 to 2 ft.

19 S. VISCAGINOÌDES (Horn. hafn suppl. 4. p. 49.) plant glabrous; stem erect, simple, somewhat leafy; leaves linear, hardly ciliated; flowers in panicled spikes; peduncles opposite, length of calyx; calyxes ovate, 10-striated; petals semibifid, with the claws not ciliated. ♃. H. Native of Dahuria. Flowers pink. Root woody, with many stems rising from the neck.

Viscago-like Catchfly. Fl. Ju. Aug. Clt. 1824. Pl. ½ to ¾ ft.

20 S. PROCU'MBENS (Murr. com. gœtt. 1784 and 1785. p. 83. t. 2.) plant glabrous; stems procumbent, branched, very leafy; leaves lanceolate; flowers axillary opposite, and terminal; calyxes ovate; petals somewhat auricled, bifid; anthophorum long. H. ♃. Native of Siberia. S. decúmbens, Schreb. S. amœ'na, Lin. spec. 596. exclusive of synomymes. Flowers white.

Procumbent Catchfly. Fl. June, Aug. Clt. 1823. Pl. procumbent.

21 S. RUBE'LLA (Lin. spec. 600.) plant smooth, glaucous, branched; leaves obovate, rather scabrous on the margin; flowers fastigiately-panicled; calyx 10-striated, clavate, but inflated after flowering; petals emarginate, with bifid, entire appendages. ⊙. H. Native of Portugal and the Levant. Smith, fl. græc. t. 426. Delisle, fl. ægyp. t. 29. f. 3.—Dill. elth. 314. f. 406. Flowers rose-coloured.

Red Catchfly. Fl. May, Aug. Clt. 1732. Pl. 1 foot.

22 S. OBLONGIFÒLIA (Otth. mss. in D. C. prod. 1. p. 369.) plant hardly pubescent; stems assurgent; leaves oblong, obtuse; flowers small, panicled, lax; calyx only a little inflated, hardly 10-striated; anthophorum long. ⊙. H. Native? Flowers red?

Oblong-leaved Catchfly. Fl. July, Aug. Pl. ½ to 1 foot.

23 S. APE'TALA (Willd. spec. 2. p. 703.) plant hoary-pubescent; stem erect, branched; leaves lanceolate, upper ones linear; flowers few, terminal, or in the forks; calyx obovate, 10-striated; petals wanting. ⊙. H. Native of Spain. Flowers apetalous. Perhaps this species does not belong to this section.

Apetalous-flowered Catchfly. Fl. Ju. Jul. Clt. 1801. Pl. ½ ft.

24 S. TENUIFLÒRA (Guss. pl. rar. 1. p. 177. t. 36.) stem erect; radical leaves spatulate, obtuse, pubescent, upper cauline ones lanceolate-linear, smooth, tapering to the top; panicle rather dichotomous, few-flowered; peduncles elongated, usually 1-flowered; calyx smooth, oblong, at length much inflated, 10-nerved; petals emarginate. ⊙. H. Native of Abruzzo on the edges of fields. Flowers red or white?

Fine-flowered Catchfly. Fl. May, July. Pl. 1 to 2 feet.

25 S. SPERGULIFÒLIA (Bieb. fl. taur. suppl. 305.) villous; stems procumbent, diffused, branched; branches 3-flowered; leaves small, linear, reflexed in fascicles; flowers somewhat panicled, crowded; calyx inflated, 10-striated, beset with glandular hairs; petals semibifid, somewhat deflexed; appendages of petals obcordate. ♃. H. Native of Armenia and on dry hills about Tiflis. Desf. cor. Tour. 73. t. 55. S. polyphýllus, Bieb. fl. taur. no. 835. exclusive of the synonymes. Flowers white or tinged with purple, about the size of those of *S. Bèhen*.

Spurry-leaved Catchfly. Fl. Ju. Jul. Clt. 1817. Pl. ¾ ft.

26 S. CARYOPHYLLOI'DES (Otth. mss. in D. C. prod. 1. p. 369.) stems erect, slender; leaves linear, very narrow, upper ones broader; flowers large, terminal; calyx inflated, somewhat funnel-shaped, narrowed at the base; petals 2-lobed. ♃. H. Native of the Levant. Cucùbalus caryophylloìdes, Poir. dict. suppl. 2. p. 416. Perhaps belonging to a separate section. Flowers white or pinkish.

Clove-pink-like Catchfly. Fl. July. Pl. 1 foot.

27 S. HISPA'NICA (Otth. mss. in D. C. prod. 1. p. 369.) plant pilose; stems procumbent, somewhat 4-sided; leaves linear-oblong, obtuse; flowers axillary, generally solitary; calyx ovate, 10-striated; petals small; anthophorum wanting. ♃. H. Native of Spain. S. parviflòra, Zea, in Poir. dict. suppl. 5. p. 150. Flowers cream-coloured? Perhaps belonging to a different section, as well as the two following species.

Spanish Catchfly. Fl. June, July. Clt. 1819. Pl. ½ foot.

28 S. CARNO'SA (Mœnch. suppl. 206.) plant glabrous; stem erect; leaves acute, glaucous; flowers solitary; calyx smooth, veiny; petals lanceolate, with 2-parted appendages. ⊙. H. Native? Petals purple, bordered with white.

Fleshy Catchfly. Fl. June, July. Clt. 1823. Pl. 1 foot.

29 S. ANGUSTIFO'LIA (Bieb. fl. taur. 1. p. 337.) stem branched; leaves linear, glabrous; flowers terminal; calyx somewhat campanulate, rather hairy; petals bifid; anthophorum scarcely the length of the capsule. ♃. H. Native of Caucasus about the falls of the Terek. Flowers white.

Narrow-leaved Catchfly. Fl. June, July. Pl. 1 foot.

SECT. III. OTI'TES (from *ους ωτος, ous otos*, an ear, the form of the leaves of *S. otìtes* is compared to an ear-picker.) Otth. mss. and D. C. prod. 1. p. 369. Caulescent. Flowers disposed in verticillate spikes, or verticillate panicles, or racemes.

30 S. OTI'TES (Pers. ench. 1. p. 497.) stems erect, rarely branched, hardly pubescent, rather leafy; lower leaves numerous, spatulate, somewhat fleshy, upper ones lanceolate; flowers small, dioecious; calyx of the female flowers spherical, those of the male flowers somewhat club-shaped; petals linear, undivided, naked. ♃. H. Native of Silesia, Austria, France, Switzerland, &c. In England in dry sandy or gravelly open grassy fields; chiefly in Norfolk, Suffolk, or Cambridgeshire; between Swaffham and Narford, Norfolk, on the grassy ridges of the road; also about Thetford, Barton-mills, and Bury. Cucùbalus Otìtes, Lin. spec. 594. Smith, engl. bot. t. 85. Fl. dan. 518. Lýchnis Otìtes, Scop. carn. 1. p. 305. Flowers small, yellowish. Ray says this plant is useful in hydrophobia.

Var. β, umbellàta (Otth. mss. and D. C. prod. 1. p. 369.) root thick, branched; stems leafless, humble; radical leaves spatulate; flowers umbellate. ♃. H. Native of Syria.

Var. γ, macrophýlla (Otth. mss. and D. C. l. c.) plant rather pubescent; stem very high, branched; leaves large, spatulate, obtuse or acute; flowers very numerous, somewhat panicled. ♃. H. Native of Provence on Mount Cousson.

Var. δ, densiflòra (Otth. mss. and D. C. l. c.) plant hairy; stem very high; whorls many-flowered, very distant, dense. ♃. H. Native of Tauria. S. densiflòra, D'Urv. enum. 48.

Ear-leaved or Spanish Catchfly. Fl. July, Aug. England. Pl. 1 to 3 feet.

31 S. WOLGE'NSIS (Otth. mss. in D. C. prod. 1. p. 370.) stem branched, pubescent; lower leaves large, lanceolate-spatulate, ciliated, upper ones linear, long; flowers in panicled whorls, stalked; petals linear. ♃. H. Native on the banks of the river Volga. Cucùbalus Wolgénsis, Willd. enum. suppl. 24. Flowers yellowish.

Volga Catchfly. Fl. July, Aug. Clt. 1824. Pl. 1 to 2 feet.

32 S. PARVIFLÒRA (Pers. ench. 1. p. 497.) plant hoary-pubes-

cent; stems erect, almost simple; leaves spatulate-lanceolate; lower whorls of flowers elongated into panicles; calyx spherical, with 10 stripes; petals linear, ciliated, naked. ♃. H. Native of Hungary. Cucùbalus parviflòrus, Willd. spec. 2. p. 689. Flowers whitish or yellowish-green, small. Petals undivided.

Small-flowered Catchfly. Fl. July, Aug. Clt. 1796. Pl. 1 to 2 feet.

33 S. EFFU'SA (Otth. mss. and D. C. prod. 1. p. 370.) stems erect, almost simple; leaves linear, lower ones bluntish; flowers very numerous, small, effusely panicled; branches in whorls; calyx obovate, clavated, with 10 stripes. ♃. H. Native on the banks of the Volga. Cucùbalus effùsus, Fisch. in litt. Flowers whitish-yellow.

Effuse-flowered Catchfly. Fl. Ju. Aug. Clt. 1823. Pl. 1 to 2 ft.

34 S. VERTICILLA'TA (Otth. mss. and D. C. prod. 1. p. 370.) plant very smooth; stem much branched, and very leafy; leaves linear, acute; flowers in whorled spikes; whorls distant; calyx ovate, clavated; petals bifid. ♃. H. Native? Cucùbalus cæspitòsus, Poir. dict. suppl. 2. p. 416. Flowers whitish-yellow.

Whorled-flowered Catchfly. Fl. July, Aug. Pl. 1 to 2 feet.

35 S. SIBI'RICA (Pers. ench. 1. p. 497.) suffruticose, glabrous; stems much branched; leaves linear-lanceolate, numerous, ciliated or pubescent; flowers disposed in interrupted spikes; calyx rather inflated, clavated, with 10 stripes; petals emarginate; stamens long. ♃. H. Native of Siberia in the deserts. Cucùbalus Sibíricus, Lin. spec. 592. Flowers greenish-yellow.

Siberian Catchfly. Fl. July, Aug. Clt. 1773. Pl. 1 to 2 feet.

36 S. GYPSO'PHILA (Desf. cat. hort. par. 184.) plant branched, pubescent, flexuous, leafy; leaves linear-lanceolate, acuminated; branches of panicle whorled; calyx clavate, bladdery, 10-striped, hairy; petals 2-lobed. ♃. H. Native of? Flowers whitish.

Gypsophila-like Catchfly. Fl. June, Aug. Clt. 1818. Pl. ½ ft.

37 S. DI'STANS (Otth. mss. and D. C. prod. 1. p. 370.) stem very long, twiggy, hardly pubescent; radical leaves broad, lanceolate-spatulate, obtuse, cauline ones linear, rounded at the apex; whorls very distant, few-flowered; calyx long, clavated. ♃. H. Native? Flowers yellowish.

Distant-whorled Catchfly. Fl. July, Aug. Pl. 1 to 2 feet.

38 S. MULTIFLO'RA (Pers. ench. 1. p. 497.) plant hardly pubescent; stem simple, clammy; leaves scabrous, linear-lanceolate, lower ones spatulate, stalked; flowers disposed in interrupted whorled spikes; peduncles short; calyx cylindrical, clavated, with 10 stripes; petals 2-parted; lobes narrow; stamens very long. ♂? H. Native of Siberia and Hungary. Cucùbalus multiflòrus, Walds. and Kit. hung. 1. p. 56. t. 56. Flowers yellowish-white.

Many-flowered Catchfly. Fl. July, Aug. Clt. 1794. Pl. 1 to 2 feet.

39 S. ELA'TA (Otth. mss. and D. C. prod. 1. p. 370.) plant glabrous; stem very long, twiggy, simple; cauline leaves few, linear, radical ones lanceolate-spatulate; flowers disposed in interrupted spikes; whorls 2-6-flowered; calyx clavated, not striped; petals 2-parted. ♃. H. Native of Tauria. S. chlorántha, Stev. in litt. not Willd. Flowers greenish-yellow.

Tall Catchfly. Fl. July, Aug. Clt. 1819. Pl. 2 to 3 feet.

40 S. RUTHE'NICA (Otth. mss. and D. C. prod. 1. p. 370.) stems creeping, much branched; branches opposite, erect; leaves linear-lanceolate, serrulated; spikes of flowers very long; peduncles equalling in length the calyx; calyx clavated, with 10 stripes; petals 2 parted. ♃. H. Native of Russia. Very like *S. Sibírica*, but very distinct. Perhaps *S. Tatárica?* Flowers yellowish.

Var. β, *pedunculàta* (Otth. mss. and D. C. l. c.) peduncles much longer than the calyx, lower ones branched. ♃. H. Native of Russia and Volhynia.

Russian Catchfly. Fl. July, Aug. Clt. 1820. Pl. 1 to 2 ft.

41 TATA'RICA (Pers. ench. 1. p. 497.) plant glabrous; stems erect, simple, very leafy; leaves lanceolate, small; spike of flowers elongated, dense; whorls 2-4-flowered; calyx clavated, with 10 stripes, reticulated; petals 2-parted; stamens very long. ♃. H. Native of Tartary. Cucùbalus Tatáricus, Lin. spec. 592. Flowers turned towards one side, white.

Tartarian Catchfly. Fl. June, Aug. Clt. 1769. Pl. 2 feet.

42 S. GIGANTE'A (Lin. spec. 598.) plant villous; leaves obovate, fleshy, upper ones connate at the base; whorls of flowers distant; calyx clavate, with 10 stripes; petals bifid, rounded, bicallose at the base; stamens long. ♂. G. Native of the north of Africa and Candia. Smith, fl. græc. 432. Lýchnis, &c., Walth. hort. 32. t. 11. Leaves large, obovate. Flowers cream-coloured, expanding at night.

Giant Catchfly. Fl. June, July. Clt. 1738. Pl. 2 to 4 ft.

43 S. INVOLU'TA (Forsk. fl. ægyp. arab. suppl. 210. no. 47.) stems thick, rather woody, villous; leaves linear-lanceolate, under surface tomentose; flowers opposite, but usually in whorls at the apex; calyx with 10 angles; petals bifid. ♃. F. Native near Constantinople. Flowers olive-coloured.

Involute Catchfly. Pl. 2 feet.

44 S. SCOULE'RI (Hook, fl. bor. amer. p. 88.) plant pubescent, viscid; stem simple, erect, remotely leafy; joints knotted; leaves lanceolate or linear-lanceolate, flat; spike long; flowers erect; calyx oblong, clavate, 10-ribbed. ♃. H. Native of the north-west coast of America, and upon the low hills of the Columbia. Flowers white.

Scouler's Catchfly. Pl. 1 to 3 feet.

SECT. IV. CONOIMO'RPHA (from κωνος, *konos*, a cone, and μορφη, *morphe*, form; form of calyx.) Otth. mss. and D. C. prod. 1. p. 371. Caulescent. Calyx cone-shaped, much swelled out at the bottom, with very long teeth.

45 S. CO'NICA (Lin. spec. 598.) pubescent; stem simple, dichotomous; leaves linear, soft; flowers solitary or panicled; calyx conical, with 30 stripes; petals deeply emarginate, with acute emarginate appendages; capsule ovate. ☉. H. Native of sandy corn-fields in France, Spain, and the Levant. In England a little to the north of Sandown Castle plentifully; opposite the Warren house at New Romney, Kent. Smith, engl. bot. t. 922. Jacq. aust. 253. S. conoídea, Huds. 189. Petals red. There is a flower always in the fork of the stem.

Var. β, *ramòsa;* stem much branched; leaves more downy; calyx not so much inflated. ☉. H. Native of Candia. S. cónica, Smith, fl. græc. t. 422. Flowers pale-red. This is probably a distinct species. It is a weed in Chelsea garden under the name of *S. conoídea.*

Conical-calyxed Catchfly. Fl. July, Aug. England. Pl. ½ to 1 feet.

46 S. CONOI'DEA (Lin. spec. 598.) stems pubescent; leaves lanceolate-linear, almost glabrous; flowers solitary or panicled; calyxes long, conical, with 30 stripes; petals entire, obovate, crested; capsules bottle-formed. ☉. H. Native of sandy corn-fields in France, Germany, &c.—Clus. hist. 1. p. 288. f. 2.—Mor. hist. 2. p. 542. sect. 5. t. 36. f. 6. Petals red. This is perhaps a variety of the last.

Conoid-calyxed Catchfly. Fl. June, July. Clt. 1683. Pl. 1 ft.

47 S. CONIFLÒRA (Nees. in litt. D. C. prod. 1. p. 371.) stems pubescent; leaves long, grassy, acute, hardly pubescent; flowers panicled; calyxes cylindrically-conical, with 30 stripes; petals obcordate. ☉. H. Native of the Levant. Petals red. This is probably the *S. cónica*, Smith, fl. græc. t. 422.

Cone-flowered Catchfly. Fl. June, July. Pl. ½ to 1 foot.

48 S. cylindriflòra (Otth. mss. D. C. prod. 1. p. 371.) pubescent; stems branched; leaves linear-lanceolate; flowers few, panicled; calyxes cylindrically-conical, with 30 stripes; claws of petals exceeding the calyx; petals bifid. ⊙. H. Native of the Levant. Flowers red.

Cylindrical-flowered Catchfly. Fl. June, July. Clt. 1824. Pl. 1 foot.

49 S. undula'ta (Ait. hort. kew. 2. p. 96.) pubescent; leaves lanceolate, undulated, lower ones stalked; flowers large, in lax dichotomous panicles; calyxes very long, cylindrically-conical, with 10 stripes. ♂. G. Native of the Cape of Good Hope. Claws of petals very long. Flowers red.

Waved-leaved Catchfly. Fl. Aug. Clt. 1775. Pl. 1½ foot.

Sect. V. Stachymo'rpha (from σταχυς, *stachys*, a spike, and μορφη, *morphe*, form; in allusion to the flowers being disposed in something like spikes in the axils of the leaves.) Otth. mss. D. C. prod. 1. p. 370. Caulescent. Flowers spiked, axillary, not opposite, usually on short pedicels. Calyxes with 10 stripes. The plants of this section are to be known by their flowers being disposed in spikes or racemes, and by their alternate pedicels being always axillary.

§ 1. *Calyxes cylindrical when in flower.*

50 S. A'nglica (Lin. spec. 594.) hairy and viscid; stems branched; leaves lanceolate, acute; calyx 5-striped, cylindrical, with very long acute teeth; petals obcordate, small, with erect cloven pyramidal appendages. ⊙. H. Native of France in cultivated fields on a gravelly or sandy soil. In Britain about Combe in Surry; in Cambridgeshire; between Dundee and St. Andrews, and near Perth; in Hertfordshire; at Lakenham and Costesy near Norwich. Smith, engl. bot. 1178. Curt. fl. lond. fasc. 4. t. 30. Petals white, occasionally marked with a red spot of each.

English Catchfly. Fl. June, July. Britain. Pl. ½ to 1 foot.

51 S. Lusita'nica (Lin. spec. 594.) hairy; stems much branched; lower leaves obovate-spatulate, upper ones lanceolate, obtuse; spike distich; calyx rather ventricose, cylindrical, with long teeth; petals crenate, not bifid, with a triangular border. ⊙. H. Native of Spain and Sardinia. S. Sardòa, Mor. sard. elench. ex Spreng.—Dill. elth. t. 311. f. 401. Petals flesh-coloured.

Portugal Catchfly. Fl. June, July. Clt. 1732. Pl. ¾ foot.

52 S. tridenta'ta (Desf. atl. 1. p. 349.) stems branched; leaves linear-lanceolate; spikes secund; calyx sub-cylindrical, with 10 ribs, teeth very long; petals 3-toothed. ⊙. H. Native of Algiers and Spain in corn-fields. Petals rose-coloured.

Three-toothed-petalled Catchfly. Fl. June, July. Clt. 1823. Pl. ½ to ¾ foot.

53 S. Ga'llica (Lin. spec. 595.) hairy and viscid; stems branched; lower leaves spatulate, upper ones lanceolate, obtuse; spike secund; calyx rather ventricosely cylindrical, with short acute teeth; petals obovate, entire, crowned. ⊙. H. Native of France; also of Chili and Buenos Ayres.—Vaill. par. t. 16. t. 12.—Dill. elth. 419. t. 310. f. 399. Petals flesh-coloured, with darker streaks. The *S. Anglica*, *S. Lusitánica*, Lin. *S. cerastoìdes*, Hænke, not Tenore, and *S. micropétala* of D. C. are perhaps only slight variations of *S. Gállica*, Lin.

French Catchfly. Fl. May, July. Clt. 1683. Pl. ½ to 1½ ft.

54 S. coarcta'ta (Lag. gen. et spec. 15.) hairy; lower leaves lanceolate, stalked, upper ones lanceolate-linear; flowers almost sessile; calyx hairy, fruit-bearing ones ovate, compressed at the mouth; petals bifid. ⊙. H. Native of Spain in the provinces of Valencia and Murcia. Flowers rose-coloured or white.

Compressed-calyxed Catchfly. Fl. June, July. Clt. 1825. Pl. ¾ to 1 foot.

55 S. ocymoi'des (Desf. cat. hort. par. 184.) hairy; stems branched; leaves spatulate; spike secund, few-flowered; calyx cylindrical, rather ventricose, very hairy, with long teeth; petals obovate, hardly crenate, with 2 longer appendages. ⊙. H. Native? S. pedicellàta, Poir. suppl. 5. p. 150. Petals purple, with pale edges.

Basil-like Catchfly. Fl. May, June. Clt. 1823. Pl. ¾ to 1 ft.

56 S. di'sticha (Willd. enum. p. 476.) hairy; stem much branched; leaves ovate-lanceolate, acute; spikes twin, dense, with a solitary flower in the fork; calyx cylindrical; petals small, bifid. ⊙. H. Native of Minorca. S. microphýlla, Rœm. in Schrank. pl. rar. t. 39. Annal. mus. 14. t. 12. Petals rose-coloured.

Distich-spiked Catchfly. Fl. Ju. July. Clt. 1817. Pl. 2 feet.

57 S. cerastioi'des (Lin. spec. 596.) stems branched, villous; branches dichotomous; leaves pubescent, lower ones rather spatulate, upper ones linear-lanceolate, hardly stalked; spike few-flowered; calyxes ovate-globose, rather ventricose, very hairy; petals emarginate, with the appendages 4-toothed. ⊙. H. Native of the south of Europe and north of Africa. Smith, fl. græc. 412. S. rigídula, Lin. amœn. 4. p. 313. S. matutìna, Presl. ex Spreng.—Dill. elth. 416. t. 309. f. 307. Flowers rose-coloured.

Chickweed-like Catchfly. Fl. June, Aug. Clt. 1732. Pl. ½ to 1 foot.

58 S. quinquevu'lnera (Lin. spec. 595.) pubescent, viscid; stems branched; leaves lanceolate, lower ones obtuse; spike secund; calyx very villous, with short teeth; petals roundish, entire, with bicuspidate appendages. ⊙. H. Native of Spain, France, Italy, Siberia, Carniola, &c. In England in sandy corn-fields near Wrotham, Kent. Smith, engl. bot. t. 86. Cucùbalus variegàtus, Lam. fl. fr. 8. p. 28. Petals deep crimson in the middle, with pale borders. The specific name alludes to the 5 dark crimson spots, one in the centre of each petal.

Five-wounded Catchfly. Fl. June, July. England. Pl. 1 ft.

59 S. Scio'tica (Otth. mss. and D. C. prod. 1. p. 372.) hairy; stem erect, simple; leaves shining, acuminated, radical ones broad, spatulate, upper ones lanceolate, acute; flowers spiked in two rows, crowded; calyx bladdery, cylindrical; petals obcordate. ⊙. H. Native of the island of Scio. S. Chìa, Spreng. syst. 2. p. 409. Petals crimson, with a white margin.

Scio Catchfly. Fl. June, July. Pl. 1 foot.

60 S. noctu'rna (Lin. spec. 595.) stem simple, branched, hairy; leaves scabrous, on ciliated petioles, lower ones spatulate, upper ones lanceolate; spikes secund, loose; flowers pressed to the stem; calyxes obovate or rather clavate, scabrous; petals deeply 2-parted, narrow. ♂. ⊙. H. Native of Spain, France, Greece, &c. Smith, fl. græc. 408.—Dill. elth. 420. t. 310. f. 400. Barrel. icon. t. 27. f. 1. S. spicàta, D. C. fl. fr. p. 759. Petals rose-coloured, but lead-coloured beneath, minutely crowned. Capsule ovate, standing on a short stipe.

Var. β, pauciflòra (Otth. mss. and D. C. prod. 1. p. 372.) flowers few, distant; petals smaller than in var. *a*. Cucùbalus refléxus, Lin. spec. 594. S. mutábilis, Lin. spec. 596. Flowers small, white, greenish externally.

Night-flowering Catchfly. Fl. June, Aug. Clt. 1683. Pl. 1 to 2 feet.

61 S. Græffe'ri (Guss. pl. rar. p. 170. t. 34.) root creeping; stem erect, simple, few-flowered; leaves lanceolate, ciliated, hairy; flowers in secund racemes; calyx 10 striped, rather scariose, tubular, at length clavate; petals 2-parted, crowned by 2-parted truncate scales in the throat. ♃. H. Native of Abruzzo in the higher pastures. S. ciliàta, Moretti, pl. ital. 6. p. 4. Flowers white above, but greenish beneath.

Græffer's Catchfly. Fl. June, Aug. Pl. ½ to 1½ foot.

62 S. cine'rea (Desf. atl. 1. p. 355.) silky-hoary; stem

branched; lower leaves ovate; flowers almost sessile, solitary twin or tern; calyx cylindrical; petals narrow, bifid. ⊙. H. Native of Algiers in corn-fields. Petals white.

Grey Catchfly. Fl. June, July. Clt. 1818. Pl. ½ to 1 foot.

63 S. BRACHYPE'TALA (Rob. et Cast. mem. ined. in D. C. fl. fr. suppl. 607.) stem simple; leaves obovate-spatulate, obtuse, hairy, ciliated at the base; flowers secund, erect; calyx somewhat cylindrical, hairy, with very long teeth; petals small, bifid. ⊙. H. Native about Marseilles. Petals white or reddish.

Short-petalled Catchfly. Fl. June, July. Clt.? Pl. ½ to 1 ft.

64 S. CRYPTA'NTHA (Viv. fl. lyb. ex Spreng. syst. 2. p. 406.) stem humble, branched; leaves obovate, acutish, connate, hairy; flowers axillary, sub-sessile; calyx cylindrical. ⊙. H. Native about Tripoli. Perhaps belonging to this section.

Hidden-flowered Catchfly. Pl. ½ to 1 foot.

65 S. HIRSUTI'SSIMA (Otth. mss. and D. C. prod. 1. p. 372.) plant beset with long white hairs; stem branched; leaves linear-lanceolate; bracteas long; flowers secund, erect; calyx cylindrical; anthophorum short. ⊙. H. Native of Spain. S. hirsùta, Lag. varied. de cienc. 1805. p. 212. Petals reddish.

Very-hairy Catchfly. Fl. June, July. Clt. 1821. Pl. 1 foot.

66 S. MICROPE'TALA (D. C. cat. monsp. 146. but not of Lag.) hairy; stem much branched, leafy; leaves linear-lanceolate; flowers terminal, or in the forks of the stem; calyx cylindrical; petals bifid; anthophorum short. ⊙. H. Native? Petals red.

Small-petalled Catchfly. Fl. Ju. July. Clt. 1821. Pl. ½ to ¾ ft.

67 S. MICRA'NTHA (Link, in Cav. herb. D. C. prod. 1. p. 372.) hairy; flowers sessile, secund; calyx cylindrical, appressed; petals small, profoundly emarginate. ⊙. H. Native of Portugal. S. micropétala, Lag. gen. et spec. 15, but not of D. C. Petals red?

Small-flowered Catchfly. Fl. June, July. Clt. 1823. Pl. ½ to ¾ foot.

68 S. INCLU'SA (Horn. hort. hafn. 1. p. 413.) hairy; flowers stalked or sessile; calyx pilose; common peduncle flexuous; fruit erect; petals emarginate. ⊙. H. Native of Europe. This plant does not appear to us to differ from *S. micropétala*, D. C. The flowers are probably reddish.

Inclosed Catchfly. Fl. June, July. Clt. 1817. Pl. ½ to ¾ foot.

69 S. ARTICULA'TA (Viv. fl. lyb. icon. ex Spreng. syst. 2. p. 409.) stem erect, knotted; leaves oblong, rather hairy, ciliated; racemes few-flowered; calyx striped, hispid; petals bifid, exceeding the cylindrical calyx. ⊙. H. Native of the north of Africa in the Great Syrtis. Flowers red?

Jointed-stemmed Catchfly. Pl. 1 foot.

70 S. LIGULA'TA (Viv. fl. lib. icon. ex Spreng. l. c.) stem erect, rather hairy; leaves linear, ciliated; racemes few-flowered; flowers stalked, hispid; petals 2-parted, obtuse, crowned by spatulate scales. ⊙. H. Native of Tripoli.

Ligulate-crested Catchfly. Pl. ½ to 1 foot.

71 S. CANARIE'NSIS (Spreng. neue. endt. t. 3. p. 60.) stem a little branched, leafy, hairy; leaves large, ovate-lanceolate, ciliated; flowers secund, rather drooping; calyx long, cylindrical, hairy. ⊙. H. Native of the Canary Islands. Petals red, with deeper veins.

Canary Island Catchfly. Fl. June, July. Pl. 1 to 1½ foot.

72 S. SETA'CEA (Otth. mss. and D. C. prod. 1. p. 372.) stems numerous, diffuse, usually simple; leaves obovate, obtuse, very closely beset with bristly hairs; flowers lax, secund; calyx cylindrical, hairy; petals bifid, narrow, with their claws exceeding the calyx. ⊙. H. Native of the island of Melos, and the north of Africa. Petals red.

Bristly-haired Catchfly. Fl. June, July. Pl. ½ to 1 foot.

§ 2. *Calyxes club-shaped when in flower.*

73 S. VILLO'SA (Forsk. descr. pl. cent. 3. p. 88.) clammy-pubescent; stems numerous, procumbent, leafy; leaves oblong, obtuse; flowers lax, secund; peduncles deflexed after flowering; calyx cylindrically-clavated; petals bifid, with very long claws. ♃? F. Native of Egypt near the pyramids about Gizah. Petals violaceous.

Villous Catchfly. Pl. procumbent.

74 S. HI'SPIDA (Desf. atl. 1. p. 348. but not of Gardener's.) plant beset with long white hairs; stems much branched; leaves broad-lanceolate, bluntish, ciliated; bracteas short; flowers secund, rather erect; spikes usually dichotomous; calyx clavated; petals semi-bifid. ⊙. H. Native of Barbary in corn-fields. S. hirsùta, Poir. dict. 7. p. 169. Petals red.

Hispid Catchfly. Fl. June, July. Clt. 1817. Pl. ½ to 1 ft.

75 S. LAXIFLÒRA (Brot. fl. lus. 2. p. 188.) hairy; stems erect, jointed, branched; lower leaves lanceolate, upper ones almost linear; flowers secund, rather remote; calyx somewhat clavated; petals bifid; capsules cylindrical. ⊙. H. Native of Portugal in sandy fields near Coimbra, and elsewhere in northern Biera. Petals flesh-coloured.

Lax-flowered Catchfly. Fl. June, Aug. Clt. 1820. Pl. 1 to 1½ foot.

76 S. CANE'SCENS (Tenore, prod. 25.) hairy-canescent; stems prostrate, branched; leaves obovately-spatulate, ciliated at the base; flowers secund, erect; calyx bladdery, somewhat cylindrical; petals bifid. ♃. H. Native of Naples. Petals red?

Canescent Catchfly. Fl. May, June. Clt. 1822. Pl. trailing.

77 S. STATICIFO'LIA (Smith, fl. græc. t. 434.) smooth, woody at the base; leaves in tufts, linear-lanceolate, mucronate, rather glaucous; floriferous stem simple; flowers erect, on short pedicels; calyx long, clavate; petals 2-parted; lobes obtuse, incurved, with short bifid entire appendages. ♃. H. Native of the Morea. Flowers rather large, white above, and rusty beneath.

Thrift-leaved Catchfly. Pl. 1 foot.

78 S. DECU'MBENS (Bern. sicul. cent. 1. p. 75.) pubescent; stems numerous, decumbent, diffuse, branched; leaves small, spatulate-lanceolate; flowers inclinate; spike dichotomous; calyxes clavated when in fruit; petals 2-parted, with long claws, crowned. ⊙. H. Native of Spain and about Naples. Flowers flesh-coloured.

Decumbent-branched Catchfly. Fl. June, Aug. Pl. ½ foot.

79 S. OLIVERIA'NA (Otth. mss. in D. C. prod. 1. p. 373.) somewhat pubescent; stem erect, almost simple; leaves linear, ciliated at the base; flowers few; calyxes clavated; petals semi-bifid, rather narrow. ⊙. H. Native between Aleppo and Mossul. Petals red?

Oliver's Catchfly. Fl. June, July. Clt. 1828. Pl. 1 foot.

80 S. DIANTHIFO'LIA (Otth. mss. in D. C. prod. 1. p. 373.) almost glabrous; stem much branched, leafy; leaves linear, acute; flowers terminal or axillary; calyxes clavated; petals 2-parted; stamens very long. ♂. H. Native of Siberia. S. fruticòsus, Pall. Petals red or white.

Pink-leaved Catchfly. Pl. 1 foot.

81 S. DIFFU'SA (Otth. mss. in D. C. prod. 1. p. 373.) pubescent; stems diffuse, branched; leaves small, spatulate, obtuse, ciliated at the base; flowers rather erect; spike 2-5-flowered; calyx clavated, rather narrow; petals bifid, with long claws. ♃? H. Native of France on the sea-shore about Masin. S. serícea, Bert. in litt. but not of All.

Diffuse-branched Catchfly. Pl. ½ to 1 foot.

82 S. IBE'RICA (Bieb. fl. taur. 1. p. 335.) stem branched, pubescent; leaves lanceolate, pubescent; spikes secund, dichotomous; calyx short, ovate, clavated, glabrous; petals bifid. ♂. H. Native of Tartary and Iberia. Flowers white. Like the following.

Iberian Catchfly. Fl. June, July. Pl. ½ to 1 foot.

83 S. DICHO'TOMA (Ehrh. beitr. 7. p. 144.) stems forked, once or twice, villous, as well as the leaves; leaves scabrous, ciliated, lower ones rosulate, spatulate, upper ones lanceolate; spikes twin, secund; flowers nearly sessile, erect; calyxes roundish, ventricose, with 10 ribs, villous; petals 2-parted, narrow, almost destitute of appendages. ♂. H. Native of Hungary, Tauria, and Candia. Walds. et Kit. hung. 1. t. 29. Smith, fl. græc. 413. S. membranàcea, Poir. dict. 7. p. 165. S. trinérvis, Sol. in Russ. aleppo, 2. p. 252. Flowers white, one always in the fork of the stem.

Dichotomous-spiked Catchfly. Fl. June, July. Clt. 1791. Pl. 1½ foot.

84 S. NYCTA'NTHA (Willd. enum. 472.) pubescent; leaves somewhat fleshy, lower ones spatulate, upper ones lanceolate; flowers secund; calyx clavated, 10-ribbed, after flowering somewhat 4-sided; petals bifid. ⊙. H. Native? Petals greenish-yellow.

Night-flowered Catchfly. Fl. Ju. July. Clt. 1815. Pl. 1 foot.

85 S. TRINE'RVIA (Seb. et Maur. fl. rom. 152.) plant covered with knotted hairs; stem slender, branched; leaves linear-lanceolate, under surface 3-nerved; flowers secund; calyx clavated, hispid from imbricating hairs, which are turned upwards; petals semi-bifid. ⊙. H. Native about Rome. Petals whitish.

Three-nerved-leaved Catchfly. Fl. Ju. July. Pl. ½ to 1 foot.

86 S. DIVARICA'TA (Smith, fl. græc. 414.) hoary-pilose; stem once or twice forked, divaricate: leaves all lanceolate, acute; flowers distant on short pedicels, rather nodding; petals 2-parted; lobes obovate, rounded as well as the appendages. ♂. H. Native of the Morea in fields. Flowers whitish, one always in the forks of the stems.

Divaricate Catchfly. Fl. Ju. July. Clt. Pl. 1 to 2 feet.

87 S. RACEMO'SA (Otth. in D. C. prod. 1. p. 384.) stem dichotomous, divaricate, racemose; leaves lanceolate, narrow; petals 2-parted, rounded, as well as the appendages. ♂. H. Native of the Canary Islands. Flowers whitish? Perhaps the same as the preceding.

Racemose Catchfly. Fl. June, July. Pl. 1 to 2 feet.

88 S. VELUTI'NA (Pour. in Desf. herb. ex Lois. in journ. 2. p. 324.) plant velvety; stem erect, branched; lower leaves obovate-lanceolate, upper ones lanceolate-linear; flowers sometimes solitary in the axils, sometimes crowded; calyxes clavated; petals semi-bifid. ♃. H. Native of Corsica. Petals red?

Velvety Catchfly. Fl. May, July. Pl. 1 to 1½ foot.

89 S. SABULETO'RUM (Link. in Spreng. 1. nov. prov. 39.) hairy; leaves lanceolate; flowers spiked also in the forks of the branches; calyx covered with long hairs, narrow, cylindrically-clavated; petals emarginate. ⊙. H. Native? Petals purplish-violet.

Gravel-pit Catchfly. Fl. Ju. Jul. Clt. 1818. Pl. ½ to 1 ft.

90 S. BELLIDIFO'LIA (Jacq. hort. vind. 3. t. 81.) hairy; stem erect, slender, nearly simple; leaves spatulate, lanceolate, acute; spikes twin, secund; calyx cylindrically clavated, smoothish; petals bifid; anthophorum long. ⊙. H. Native —? Petals pink, crowned.

Daisy-leaved Catchfly. Fl. Ju. July. Clt. 1794. Pl. ¾ to 1 ft.

91 S. PI'NGUIS (Vahl. ex horn. hafn. suppl. 49.) plant covered with silky hairs; leaves fleshy; radical ones spatulate, superior ones obovate-lanceolate; calyx erect, clavate; petals bifid. ⊙. H. Native of Denmark at Cape Spartel. Petals rose-coloured. Perhaps the same as *S. bellidifòlia*, Jacq.

Fat Catchfly. Fl. June, July. Clt. 1816. Pl. ½ to ¾ foot.

92 S. CHEIRANTHIFO'LIA (Schott, in isis. 1818. fasc. 5. p. 821.) flowers secund; calyx short, clavated; petals 2-parted; capsules cylindrical; seeds hardly revolute, channelled on the back. ⊙. H. Native at San Rocco. Petals rose-coloured on the upper surface.

Wallflower-leaved Catchfly. Fl. June, July. Pl. 1 foot.

93 S. VESPERTI'NA (Retz. obs. 3. p. 31.) pubescent; stems branched, diffuse; leaves spatulate, acute, on ciliated petioles; racemes secund; calyx bladdery-clavated; petals 2-parted; lobes obtuse. ⊙. H. Native of Mauritania, Greece, and Portugal in corn-fields. Curt. bot. mag. 677. S. bipartìta, Desf. atl. 1. p. 352. t. 100. Smith, fl. græc. 409. Petals rose-coloured, appendages deeply bifid, acute. This is a beautiful plant with diffuse or decumbent stems. Sweet, fl. gard. t. 11.

Evening-flowered Catchfly. Fl. Ju. Jul. Clt. 1796. Pl. 1 ft.

94 S. DISTA'CHYA (Brot. fl. lus. 2. p. 189.) hairy; stem forked at the top; racemes secund; flowers almost sessile; leaves spatulate, upper ones lanceolate, acute; calyx clavate; petals 2-parted, crowned. ⊙. H. Native of Portugal near Coimbra. Petals pale-purple above, but greenish beneath, and rather keeled.

Two-spiked Catchfly. Fl. June, July. Clt. 1817. Pl. 1 ft.

95 S. OBTUSIFÒLIA (Willd. enum. p. 473.) stem villous; leaves elliptically-spatulate, rounded, rather pubescent; flowers secund, drooping, nearly sessile; calyx clavated, pubescent; petals bifid. ⊙. H. Native? Petals purple. Perhaps *S. coloràta*.

Blunt-leaved Catchfly. Fl. June, July. Clt. 1820. Pl. ¾ to 1 foot.

96 S. DI'SCOLOR (Smith, fl. græc. t. 410.) stem usually forked at the top, diffuse, villous; leaves obovate, obtuse, villous at the base, with the petioles rather connate; flowers in two rows, on short pedicels, pressed to the stem; calyx clavate, villous, with 10 red ribs; petals bifid; lobes narrow, obtuse, with the appendages emarginate and white. ⊙. H. Native of Cyprus. Plant branched from the base. Flowers rose-coloured on the upper surface, but greenish on the under surface.

Discoloured-flowered Catchfly. Fl. June, July. Pl. ½ foot.

97 S. COLORA'TA (Schousb. maroc.) stems branched, very hairy; leaves obovate-spatulate, numerous, pubescent, ciliated at the base; flowers secund; calyx bladdery, clavated; petals 2-parted, crowned. ⊙. H. Native of Morocco and the island of Scio in corn-fields. Horn. hort. hafn. 1. p. 412. Petals purple on the upper surface and greenish below. Perhaps the same as *S. díscolor*.

Coloured Catchfly. Fl. Ju. July. Clt. 1819. Pl. ½ to 1 ft.

98 S. THYMIFÒLIA (Smith, fl. græc. t. 411.) stem procumbent, ligneous, branched, hairy; leaves ovate, acute, rather hairy, ciliated, with fascicles of smaller axillary ones; flowers sessile, or on pedicels, furnished with 2 bracteas or leaves; petals bifid, narrow, with the appendages deeply emarginate. ♄. H. Native of Cyprus by the sea-side. Flowers white above but greenish beneath.

Thyme-leaved Catchfly. Fl. June, July. Shrub procumbent.

99 S. CRASSIFÒLIA (Lin. spec. 597.) velvety; stem procumbent, branched, leafy; leaves ovate-spatulate, fleshy; bracteas very small; flowers secund; calyx bladdery, clavated; petals emarginate, with long claws, properly crowned. ⊙. H. Native of the Cape of Good Hope. Petals of a brownish dull colour.

Thick-leaved Catchfly. Fl. July, Aug. Clt. 1774. Pl. procumbent.

100 S. BURCHE'LLII (Otth. mss. in D. C. prod. 1. p. 374.) pubescent; stems assurgent, simple; leaves small, lanceolate; flowers few, almost sessile, clavated; anthophorum very long. ⊙? H. Native of the Cape of Good Hope. Burch. cat. geogr. no. 271. Flowers white?

Burchell's Catchfly. Fl. June, July. Pl. decumbent.

101 S. PILOSELLOI'DES (Cham. et Schlecht. in Linnæa. 1. p. 41.) stems decumbent at the base, rather scabrous, naked above; radical leaves spatulate-lanceolate, rather mucronate, roughish; flowers racemose, secund; calyx club-shaped, drooping, when in flower, when in fruit erect; petals 2-parted, with linear, obtuse segments, furnished with 2-lobed appendages. ♃. G.

Native of the Cape of Good Hope near Plettensberg's bay. Many stems rising from the same root, usually decumbent. Flowers white.

Pilosella-like Catchfly. Pl. procumbent.

102 S. CE'RNUA (Thunb. fl. cap. ed. Schult. 1. p. 394.) plant hairy; flowers racemose, secund, drooping, calyxes with 10 stripes, fruit-bearing ones clavated; leaves linear, villous, scabrous. Native of the Cape of Good Hope. 4. G. Flowers white. Perhaps *S. piloselloìdes*, Cham.

Drooping-flowered Catchfly. Pl. procumbent?

103 S. GRA'CILIS (D. C. cat. monsp. 145.) glabrous; stem erect, branched; leaves linear, hardly ciliated, lower ones ovate; flowers erect, alternate, distant; peduncles long; calyxes bladdery, clavated; petals 2-parted; lobes linear. ⊙. H. Native? Petals white. Perhaps this species should have been placed in section *Rupífraga* on account of the long peduncles.

Slender Catchfly. Fl. Ju. Jul. Clt. 1823. Pl. $\frac{3}{4}$ to 1 foot.

104 S. IMBRICA'TA (Desf. atl. 1. p. 349. t. 98.) stems erect, branched, hairy at the base; leaves villous, lower ones obtuse, upper ones lanceolate, acute; spikes secund, dense; flowers erect, appressed; calyx clavated; petals obcordate, with 2 marginal teeth, crowned. ⊙. H. Native of the north of Africa near Mascar in corn-fields. Petals white.

Imbricate-flowered Catchfly. Fl. June, July. Clt. 1818. Pl. 1 to $1\frac{1}{2}$ foot.

105 S. PERNO'CTANS (Link. ex Spreng. syst. 2. p. 408.) stem naked above, bifid, villous as well as the leaves, which are spatulate; racemes twiggy; calyxes erect, stalked, without stripes. ⊙. H. Native of Portugal. Perhaps belonging to this section.

Whole Night-flowering Catchfly. Pl. 1 foot.

106 S. LINEARIFO'LIA (Otth. mss. and D. C. prod. 1. p. 374.) stems erect, a little branched, glabrous; leaves very narrow, acute; flowers erect, secund; petals bifid, crowned. ⊙. ♂. H. Native of the alps of Caucasus. Petals white?

Linear-leaved Catchfly. Fl. June, July. Pl. 1 foot.

107 S. JENISEE'NSIS (Willd. enum. 473.) glabrous; stems usually simple; leaves rather fleshy, linear-lanceolate; flowers secund; calyx ovate, inflated; petals bifid, with 4-lobed appendages. 4. H. Native of Siberia on the banks of the Yenisee. S. Jenísea, Poir. dict. suppl. 5. p. 154. Flowers white.

Yenisee Catchfly. Fl. June, Jul. Clt. 1817. Pl. 1 to $1\frac{1}{2}$ ft.

108 S. ALTA'ICA (Pers. ench. 1. p. 497.) root thick, woody, rather branched; stem simple, assurgent; leaves linear, very acute; flowers few, on the top of stems, alternate; calyx cylindrically-ventricose; petals revolute, bifid, linear. 4. H. Native of Siberia on the Altaian mountains. Cucùbalus fruticulòsus, Gmel. syst. 2. p. 713. Pall. itin. 2. app. no. 110. t. T. Petals white or purple. Perhaps *S. ciliàta*.

Altaian Catchfly. Fl. June, Aug. Pl. 1 foot.

109 S. CILIA'TA (Pour. act. toul. 3. p. 328.) pubescent; stems numerous, prostrate, very leafy at the base; leaves linear, ciliated with bristles; flowers few, secund; calyx inflated, clavated; petals 2-parted; recesses of calyx deflexed. 4. H. Native of Crete and the Pyrenees. S. stellàta, Lapeyr. but not of hort. kew. S. Arvática, Lag. in varied de cienc. 1805. p. 212. S. Pourréttii, Poir. Petals purple.

Var. β, geniculàta (D. C. fl. fr. 4. p. 756.) hardly pubescent; calyx paler; petals white. S. geniculàta, Pourr. act. toul. 3. p. 328.

Ciliated-leaved Catchfly. Fl. Ju. July. Clt. 1804. Pl. trailing.

110 S. LEGIONE'NSIS (Lag. gen. et spec. p. 14.) stem slender, simple; radical leaves lanceolate, acute, ciliated, stem ones few, linear-awl-shaped; bracteas ovate, acuminated; flowers 5-6, secund; calyx clavated, membranaceous. 4. H. Native of Spain in the province of Leone. Petals purple or white.

Leone Catchfly, Fl. June, July. Pl. $\frac{1}{2}$ to 1 foot.

111 S. SESSILIFLÒRA (Desf. in Poir. dict. suppl. 5. p. 154.) villous; stems erect or procumbent, almost simple, somewhat quadrangular; lower leaves oblong-spatulate, rather fleshy, upper ones narrow-linear; flowers sessile, in dichotomous spikes; calyx turgid; petals 2-parted. ⊙. H. Native of Syria. Petals purple or flesh-coloured?

Sessile-flowered Catchfly. Fl. June, July. Pl. $\frac{1}{2}$ to 1 foot.

112 S. PE'NDULA (Lin. spec. 599.) pubescent, branched, trailing; leaves ovate-lanceolate; flowers axillary, pendulous; calyx inflated; petals bifid, crowned. ⊙. H. Native of Italy, Sicily, and Candia. Curt. bot. mag. t. 114. Petals flesh-coloured. This plant has some of the habit of *Lýchnis dioíca*.

Var. β, erectiflòra (Otth. mss. in D. C. prod. 1. p. 375.) flowers erect, smaller. ⊙. H. Native of Portugal in sandy places at the bottom of the hills, and on the banks of the rivers Munda and Douro, beyond the Tagus, and elsewhere in Beira and Estramadura. S. scabriflòra, Brot. fl. lus. 2. p. 184. Petals pale purple.

Pendulous-flowered Catchfly. Fl. May, Aug. Clt. 1731. Pl. procumbent.

113 S. LONGICAU'LIS (Pour. elench. hort. reg. madr. an. 1803.) lower leaves spatulate, pubescent; flowers spiked; calyx ovate, glabrous; petals 2-parted, acute. ⊙. H. Native of Spain. Petals red?

Long-stemmed Catchfly. Fl. June, July. Pl. procumbent.

114 S. SECUNDIFLÒRA (Otth. mss. in D. C. prod. 1. p. 375.) very smooth, glaucous; leaves lanceolate, ciliated; flowers secund, stalked; floriferous calyx cylindrical, fructiferous ones clavated; petals 2-parted. ⊙. H. Native of Spain. S. glaúca, Pour. elench. hort. madr. an. 1803. Lag. gen. et spec. 15. but not Zea. Petals pale purple or white.

Side-flowered Catchfly. Fl. Ju. Jul. Clt. 1820. Pl. 1 foot.

115 S. VISCOSI'SSIMA (Ten. prod. fl. nap. xxvi.) villous; clammy; hairs jointed; stems erect, smooth; leaves fleshy, radical ones obovate-spatulate, cauline ones lanceolate-oblong, obtuse, channelled; flowers in spike-like racemes; petals 2-parted. ⊙. H. Native of fields near Naples. Perhaps belonging to this section? Petals red or white.

Very clammy Catchfly. Fl. June, July. Clt. 1824. Pl. 1 ft.

116 S. DRUMMO'NDI (Hook. fl. bor. amer. p. 89.) plant clothed with glandular pubescence; stems erect, simple; leaves remote, linear-lanceolate; racemes loose, few-flowered; pedicels elongated, for the most part alternate; calyx oblong-cylindrical, erect. 4. H. Native of North America on elevated gravelly places, near the Saskatchawan. Flowers white.

Drummond's Catchfly. Pl. 1 to 2 feet.

117 S. FISTULÒSA; stems slender, fistular, branched; leaves ovate, acuminated, smooth; upper ones as well as bracteas ciliated; flowers axillary, solitary, 2 or 3, terminal; calyx somewhat clavated; petals bifid. 4? H. Native of Barbary. S. latifòlia, Poir. voy. barb. 2. p. 165.

Fistular-stemmed Catchfly. Pl. 2 feet?

SECT. VI. RUPI'FRAGA (from *rupes*, a rock, and *frango*, to break; because the plants grow usually on rocks, which the roots are supposed to break). Otth. mss. in D. C. prod. 1. p. 375. Caulescent. Stems straight. Peduncles filiform. Calyx campanulate, cylindrical, or clavate. The plants of this section may always be known by their long filiform peduncles.

§ 1. *Petals 4-toothed.*

118 S. QUADRIDENTA'TA (D. C. fl. fr. 4. p. 748.) plant tufted; stems erect, slender, branched; leaves small, narrow, pilose; flowers small, panicled; calyx campanulate, clavated; petals 4-toothed. 4. H. Native of the alps of Europe. Cucùbalus quadridentàtus, Lin. spec. 414. Lýchnis quadriden-

tàta, Jacq. fl. aust. t. 120. suppl. t. 5. f. 1. A pretty little alpine plant with white flowers.

Four-toothed petalled Catchfly. Fl. May, July. Clt. 1822. Pl. 2 or 3 inches.

119 S. pusí'lla (Waldst. et Kit. hung. p. 235. t. 212.) stems tufted, branched at the base; leaves pilose, lower ones spatulate; peduncle erect, 1-flowered, rarely 2-3-flowered; flowers small; calyx campanulate, rather clavated; petals 4-toothed. ♃. H. Native of Hungary on the alps. Sweet, fl. gard. n. s. t. 40. S. quadridentàta β, pusílla, D. C. prod. 1. p. 375. A pretty little alpine plant, with small white flowers.

Small Catchfly. Fl. May, Aug. Clt. 1804. Pl. 1 to 2 inch.

120 S. fonta'na (Tenore, fl. nap. append. 1. p. 26.) calyx clavate, and is as well as the peduncles clammy-villous; petals quadrifid; stem erect; leaves linear, flaccid, with pilose margins; anthophorum long. ♃. H. Native of Naples by the sides of fountains. Flowers white.

Var. β; leaves shorter, stiffer and recurved; flowers larger.

Fountain Catchfly. Pl. ¼ foot.

121 S. alpe'stris (Jacq. fl. austr. 1. p. 60. t. 96.) glabrous; root somewhat creeping; stem simple, few-leaved; leaves almost all radical, lanceolate, bluntish; flowers rather large, panicled; calyx campanulately-clavated; petals with a broad 4-toothed border and 2-parted appendages; seeds ciliated. ♃. H. Native of Austria on the alps. Sweet, fl. gard. t. 111. Flowers white, shining.

Alp Catchfly. Fl. May, July. Clt. 1774. Pl. ½ foot.

§ 2. *Petals emarginate, or bifid.*

* *Small perennial plants, with lanceolate leaves.*

122 S. Tomasi'nii (Vis. in bot. zeit. 1829.) clammy-pubescent, dwarf; stem slender, branched, woolly at the base; radical leaves spatulate, stalked, cauline ones lanceolate-linear, sessile; flowers dichotomously-panicled; calyx conico-clavate; petals emarginate. ♃. H. Native of Dalmatia. This is an intermediate plant between *S. alpéstris* and *S. quadridentàta*, but differs in the leaves being broader and blunter, and in all parts of the plant being viscid, as well as in the petals being emarginate, not 4-toothed. Flowers white.

Tomasin's Catchfly. Fl. May, July. Pl. ¼ to ½ foot.

123 S. gra'ta (Hænk. adumbr. plant. 28.) glabrous; stem filiform, diffuse, branched; leaves turned backwards, fleshy, channelled, mucronate; flowers terminal; calyx clavated, ventricose; petals 2-parted, reticulated. ♃. H. Native? Poir. dict. suppl. 5. p. 155. Flowers pinkish or white.

Grateful Catchfly. Fl. May, July. Pl. ¼ to ½ foot.

124 S. rupe'stris (Lin. spec. 602.) glabrous; stems rather procumbent, branched; leaves ovate-lanceolate; flowers small, panicled; calyx campanulate, clavated; petals obcordate, hardly crowned. ♃. H. Native of the alps of Sweden and Switzerland, &c. Sturn. deutschl. fl. 1. fasc. 22. t. 10. Flowers very pale pink. A pretty little glaucous plant, something like chickweed in habit.

Rock Catchfly. Fl. May, Jul. Clt. 1774. Pl. procumbent.

125 S. glaucifòlia (Lag. in varied de cienc. 1805. p. 213.) glabrous; stem procumbent, branched, leafy; leaves ovate, obtuse, lower ones stalked, upper ones cordate; flowers small, panicled; calyx clavated; petals obovate. ♃. H. Native of Spain on the mountains of Leone. Flowers pale pink, nearly white. Very like *S. rupéstris*, but the anthophorum is longer.

Glaucous-leaved Catchfly. Fl. May, July. Clt. 1820. Pl. procumbent.

126 S. lychnidiflòra (Otth. mss. in D. C. prod. 1. p. 375.) clammy; stem erect, branched, pubescent at the base; lower leaves lanceolate-spatulate, pubescent; upper ones linear-lanceolate, glabrous; flowers loosely panicled; calyx somewhat ovate; petals with a broad obcordate border. ♃? H. Native of Candia. Flowers white or reddish.

Lychnis-flowered Catchfly. Fl. June. July. Pl. ½ to 1 foot.

** *Annual plants, with flowers on long peduncles. Hardly differing from the annual species in the next section.*

127 S. clandesti'na (Jacq. coll. suppl. 5. t. 3. f. 3.) plant pubescent; stems erect, much branched, slender; lower leaves oblong, obtuse, upper ones lanceolate, rather narrow; flowers loosely panicled; calyx ventricose; petals short, erect, bifid, with long claws, naked. ☉. H. Native of the Cape of Good Hope. Petals red with a white border.

Hidden-flowered Catchfly. Fl. June, July. Clt. 1801. Pl. ½ foot.

128 S. Porte'nsis (Lin. spec. 704.) glabrous; stem erect, dichotomously-branched; leaves linear, acute, glabrous, lower ones stalked; flowers loosely panicled, on long slender pedicels; calyx clavated, purplish, but with white stripes; petals bifid. ☉. H. Native of Portugal in sandy and gravelly places about Coimbra and Oporto. S. clandestìna β, angustifòlia, Otth. mss. in D. C. prod. 1. p. 876. Petals white on the upper surface, under surface purplish-green; appendages in the throat white, rather bifid. Flowers only opening in the evening or while the sun is overclouded.

Oporto Catchfly. Fl. June, July. Clt. 1759. Pl. ½ to 1 ft.

129 S. antirrhi'na (Lin. spec. 600.) almost smooth; stem erect, branched, rather leafy; leaves lanceolate, acute, somewhat ciliated; flowers small, panicled; calyx ovate, glabrous; petals obcordate, crowned. ☉. H. Native of North America in waste fields and on the banks of rivers from Pennsylvania to Carolina, common throughout Canada. Viscàgo amer. &c. Dill. elth. p. 422. t. 313. Flowers small, white, or greenish.

Snapdragon-like Catchfly. Fl. June, Jul. Clt. 1732. Pl. 1 ft.

130 S. geminiflòra (Willd. enum. 472.) pubescent; stems rather branched; lower leaves elliptical-spatulate, upper ones lanceolate, bluntish; flowers terminal, twin; calyxes clavated, 10-ribbed; petals bifid. ☉. H. Native of? Flowers solitary or twin, on the top of the branches, purple, but of a livid-purplish colour externally.

Twin-flowered Catchfly. Fl. June, July. Clt. 1816. Pl. ½ to ¾ foot.

131 S. linifòlia (Willd. enum. 473.) stems branched; leaves linear-spatulate; flowers dichotomous, terminal; calyx cylindrically clavated, 10-ribbed; petals bifid. ☉. H. Native of? Petals greenish-yellow.

Flax-leaved Catchfly. Fl. Ju. Jul. Clt. 1817. Pl. 1 foot.

132 S. divarica'ta (Clem. elench. hort. reg. madr. ann. 1806. p. 105.) clammy; stem erect, pubescent, branched; leaves ciliated, lower ones spatulate, obtuse, upper ones lanceolate, acute; flowers terminal, as well as in the forks of the stem; calyx cylindrically-clavated; petals obovate, emarginate, crowned. ☉. H. Native of Sicily. S. Sícula, Cyrillo. Petals rose-coloured.

Divaricate-branched Catchfly. Fl. June, July. Clt. 1818. Pl. 1 foot.

133 S. rigídula (Smith. fl. græc. t. 430.) stem much branched from the base, divaricate, with the joints smooth and the internodes clammy; branches filiform; leaves lanceolate, smooth; peduncles 1-flowered; calyx long, clavate; petals 2-parted, with quadrifid appendages. ☉. H. Native near Athens on Mount Hymettus. An elegant, much branched plant, with the habit of *S. pícta*. Flowers rose-coloured. Stigmas twisted, pubescent.

Stiff-leaved Catchfly. Pl. 1 foot.

134 S. villòsa (Cambess. in mem. mus. 14. p. 221. t. 14.) stem dwarf, villous, branched; leaves sessile, broad, linear, ob-

tuse, fleshy, pubescent; peduncles long, axillary, solitary, filiform, at first erect, but afterwards reflexed; calyx very villous, cylindrical at time of flowering, but afterwards clavate; petals deeply emarginate, crowned with bifid scales. ⊙. H. Native of the south of Spain in the sand by the sea-side. Silène péndula, Salzm. not Lin. Flowers rose-coloured.

Villous Catchfly. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

135 S. sedoi'des (Jacq. coll. suppl. p. 112. t. 14. f. 1.) rather scabrous; stem much branched; leaves rather fleshy, scabrous, spatulate, obtuse; flowers small, terminal, or in the forks of the stem; calyxes tubular, very villous; petals emarginate, crowned with bifid appendages. ⊙. H. Native of Crete. A pretty little much-branched herb. Flowers rose-coloured above, but greenish beneath.

Stone-crop-like Catchfly. Fl. June, July. Clt. 1804. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

136 S. ramosi'ssima (Smith, fl. græc. t. 425.) plant beset with clammy red hairs; stem much branched; leaves spatulate, recurved, obtuse; flowers loosely panicled, small, terminal or in the forks of the stem; petals bifid, furnished with 4-parted appendages. ⊙. H. Native of Candia on rocks by the sea-side. Calyx oblong-clavate, 10-angled. Flowers numerous, rose-coloured.

Much-branched Catchfly. Fl. June, July. Pl. $\frac{1}{2}$ foot.

*** *Small herbaceous permanent rock plants, with linear narrow-lanceolate or lanceolate-spatulate leaves.*

137 S. linoi'des (Otth. in D. C. prod. 1. p. 384.) plant woody at the base, much branched; stem simple, few-flowered, rather hoary; peduncles 1-flowered; leaves linear-lanceolate, mucronate, rather scabrous; calyx cylindrical, rather clavate; petals bifid, obtuse, with bifid, obtuse, entire appendages. ♃. H. Native of Mount Parnassus. S. linifòlia, Smith, fl. græc. t. 433. not of Willd. Flowers of a whitish-flesh-colour above, but greenish-brown beneath.

Flax-like Catchfly. Pl. 1 to $1\frac{1}{2}$ foot.

138 S. creta'cea (Fisch. in litt. ex Spreng. syst. 2. p. 407.) stem suffruticose, erect, branched; leaves terete, awl-shaped, spreading; peduncles 1-flowered, elongated; calyx glabrous, clavated. ♃. H. Native of Siberia. Flowers white.

Cretaceous Catchfly. Pl. 1 foot.

139 S. costa'ta (Otth. mss. in D. C. prod. 1. p. 376.) pubescent; stems much branched, erect; leaves small, linear, very narrow; flowers terminal, solitary, rarely twin; calyx clavate, scabrous, with 10 ribs; petals semi-bifid. ♃. H. Native of? Petals white, crowned?

Ribbed-calyxed Catchfly. Fl. June, July. Pl. $\frac{1}{2}$ foot.

140 S. parvifòlia (Otth. mss. in D. C. prod. 1. p. 376.) pubescent; stems creeping, branched; leaves small, linear-lanceolate, acute; flowers terminal; calyx cylindrically-clavated, pilose; petals bifid. ♃. H. Native of? Petals white?

Small-leaved Catchfly. Fl. June, Aug. Pl. $\frac{1}{4}$ foot.

141 S. fruticulòsa (Sieb. pl. ex sic. in D. C. prod. 1. p. 376.) plant hardly pubescent; root woody, branched; stems simple, diffuse, filiform; leaves small, lanceolate-spatulate; flowers terminal, on long stalks; calyx clavate. ♃. H. Native of Candia. Petals whitish on the upper surface, and greenish-brown on the under?

Fruticulose Catchfly. Fl. June, Aug. Pl. $\frac{1}{4}$ foot.

142 S. multicau'lis (Guss. pl. rar. p. 172. t. 35.) stem ascending, dichotomously panicled; leaves linear, narrow, puberulous, acute, ciliately scabrous; flowers rather panicled; calyx smooth, clavated; petals 2-parted, crowned with bicuspidate appendages; capsules ovate-oblong, on short pedicels. ♃. H. Native of Abruzzo in high gravelly mountains in moist places. Stems filiform, hanging from the rocks. Peduncles long, 1-flowered. Flowers white above, but dirty green beneath.

Many-stemmed Catchfly. Fl. July, Sep. Pl. 1 foot.

143 S. saxi'fraga (Lin. spec. 602.) plant smooth, rather viscid, tufted; stems assurgent; leaves linear-acute; peduncles very long; flowers terminal, solitary, rarely axillary; calyx clavate; petals 2-parted, with ciliated claws, and bicuspidate appendages. ♃. H. Native of France, Italy, Hungary, &c. on cretaceous mountains. Lodd. bot. cab. t. 454. Waldst. et Kit. hung. 2. t. 163. Petals yellowish on the upper surface, and reddish-brown on the under.

Saxifrage Catchfly. Fl. June, Aug. Clt. 1640. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

144 S. petræ'a (Waldst. et Kit. hung. 2. t. 164.) tufted, beset with short bristles; stems assurgent; leaves linear, with bristly teeth; flowers small, terminal, solitary; calyx clavate; petals bifid, with bifid appendages. ♃. H. Native of Hungary. Petals white, but brownish on the under surface.

Hungarian *Rock* Catchfly. Fl. Ju. Aug. Clt. 1822. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

145 S. falca'ta (Smith, fl. græc. t. 436.) root fusiform; plant tufted; floriferous stems 1-flowered, pilose; leaves awl-shaped, falcate, pilose, numerous; calyx cylindrically clavate; petals 2-parted, with entire 2-parted appendages. ♃. H. Native on mount Olympus in Bithynia. A tufted evergreen alpine plant. Flowers largish, cream-coloured. Anthophorum very long.

Sickle-leaved Catchfly. Pl. $\frac{1}{2}$ foot.

146 S. campa'nula (Pers. ench. 1. p. 500.) glabrous; stems erect or assurgent, rather branched, leafy at the base; leaves lanceolate-linear, acute, lower ones spatulate; flowers terminal, solitary or twin, rather drooping; peduncles very long; calyxes campanulate, large; petals 2-parted, naked. ♃. H. Native of Piedmont on rocks. Cucùbalus alpéstris, All. auct. p. 28. t. 1. f. 3. Very like the preceding plant. Petals whitish, but reddish-brown on the under surface.

Campanulate-calyxed Catchfly. Fl. June, Aug. Clt. 1823. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

147 S. nodulòsa (Viv. append. fl. cors. in Schlecht. Linnæa, 1. p. 501.) stem erect, simple, usually 1-flowered, knotted; radical leaves spatulate-lanceolate, hispid, cauline ones lanceolate, short; calyx smooth, clavate; petals exserted, naked, semibifid, with obovate oblong segments. ♃. H. Native of Corsica. S. pauciflòra, Salz.? Flowers white?

Knotted-stemmed Catchfly. Pl. $\frac{1}{2}$ to 1 foot.

148 S. Cano'pica (Del. ex Spreng. syst. 2. p. 406.) stem erect, beset with glandular hairs, viscid; branches angular; lower leaves spatulate, upper ones lanceolate, villous; peduncles axillary, remote, at length reflexed; calyx clavate. ⊙. H. Native of Upper Egypt. Perhaps belonging to this section.

Canopic Catchfly. Pl. $\frac{1}{2}$ to 1 foot.

149 S. vi'scida (Spreng. fl. min. cogn. 2. p. 65.) very clammy from glandular hairs; stems diffuse, branched; leaves linear-lanceolate; flowers solitary, terminal, or in the axillæ of the leaves; petals toothed. ♃? H. Native of Carniola. Petals greenish-white or yellowish?

Viscid Catchfly. Fl. June, Aug. Clt. 1820. Pl. $\frac{1}{2}$ to 1 foot.

150 S. Urvi'llii (Schott. mon. sil. ined. in D. C. prod. 1. p. 377.) rigid, almost glabrous; stem suffruticose at the base, branched, very leafy; leaves horizontal, linear, pungent; flowers terminal, rarely axillary; calyx clavated; petals semi-bifid. ♃. H. Native of the island of Cos. Petals white or cream-coloured.

D'Urvill's Catchfly. Fl. June, Aug. Pl. $\frac{1}{2}$ foot.

151 S. ni'vea (Muhl. catal. in D. C. prod. 1. p. 377.) stem branched above; leaves oblong-lanceolate, powdery, pubescent; flowers solitary; calyx campanulate, inflated, rather hairy; petals small, reflexed, bifid, with long claws. ♃. H. Native of North America in the vicinity of the Columbia. Nutt. gen.

amer. 1. p. 287. Petals white, almost naked. Peduncles half an inch long. Perhaps belonging to the section *Behenántha*.

Snowy Catchfly. Fl. June, Aug. Pl. ½ to 1 foot.

152 S. Menzie'sii (Hook. fl. bor. amer. p. 90. t. 30.) plant pubescent; stem erect, branched, dichotomous; leaves broad-lanceolate, acuminated at both ends; peduncles scarcely higher than the leaves; calyx obovate, 5-cleft; petals naked, bifid, with linear segments. ♃. H. Native of the north-west coast of America on low hills of Oakanagan. Flowers white. It is doubtful whether this plant belongs to this section.

Menzies's Catchfly. Pl. 1 to 2 feet.

153 S. alsinoi'des (Viv. append. fl. cors. in Schlecht. Linnæa, 1. p. 501.) procumbent; stem hispid; hairs on the calyx glandular; leaves oblong, hairy, ciliated at the base; flowers terminal, stalked; petals bifid, with ovate segments; capsule roundish. ♃ ? H. Native of Corsica. Perhaps belonging to the present section.

Chickweed-like Catchfly. Fl. June, July. Pl. procumbent.

154 S. flave'scens (Walds. et Kit. hung. 2. p. 131. t. 175.) hoary pubescent; stems erect, much branched, straight; lower leaves lanceolate-spatulate, upper ones linear; flowers loosely panicled; calyx cylindrical; petals 2-lobed. ♃. H. Native of Hungary. S. móllis, Horn. hafn. 1. p. 418. Petals yellowish, crowned.

Yellowish-flowered Catchfly. Fl. June, July. Clt. 1804. Pl. ½ to 1 foot.

Sect. VII. Siphonomo'rpha (from *σιφων*, *siphon*, a siphon, or tube, and *μορφη*, *morphe*, form; in allusion to the long tubular form of the calyx.) Otth. mss. in D. C. prod. 1. p. 377. Caulescent. Flowers erect or drooping, panicled, rarely solitary, on short opposite pedicels. Calyx tubular, cylindrical or clavate at the apex.

§ 1. *Flowers nodding. Calyxes clavate or cylindrical.*

155 S. longipe'tala (Vent. hort. cels. p. 83. t. 83. Smith, fl. græc. t. 419.) glabrous, clammy; stems erect; leaves rather fleshy, lanceolate, with scabrous margins; flowers nodding, loosely panicled; calyxes clavated; petals with a very long 2-parted involute border, and with 2-parted emarginate appendages. ☉. H. Native about Aleppo and in the island of Cyprus. Flowers greenish. Petals, stamens, and styles hairy at the base.

Long-petalled Catchfly. Fl. June, Aug. Clt. 1822. Pl. 1½ to 2 foot.

156 S. longicí'lia (Otth. mss. in D. C. prod. 1. p. 377.) root woody; stems pubescent at the base, branched; leaves lanceolate, acute, lower ones stalked, pubescent, fringed with woolly hairs; flowers nodding, panicled; calyxes clavated; petals 2-parted, each crowned with 2 callosities. ♃. H. Native of Portugal on calcareous soil near Coimbra, &c. Cucùbalus longicílius, Brot. fl. lus. 2. p. 180. Flowers white on the upper surface, but purplish on the under.

Long-haired Catchfly. Fl. May, Aug. Pl. 1 to 2 feet.

157 S. nu'tans (Lin. spec. 596.) pubescent; stems very leafy at the base; radical leaves spatulate, upper ones lanceolate; flowers panicled, drooping one way; calyx cylindrical-ventricose; petals 2-parted, involute, with long 2-parted acute appendages. ♃. H. Native almost throughout the whole of Europe in arid meadows. In Britain on limestone rocks and chalky cliffs, particularly on the walls of Nottingham castle and thereabout; in Dovedale, Derbyshire; near north Queensferry, Scotland; in Carnarvonshire; on rocks about Knaresborough, Yorkshire; also on the Dover cliffs. Smith, engl. bot. 465. Fl. dan. 242. S. latifòlia, Horn. hafn. suppl. 49. ? Lýchnis nùtans, Scop. carn. 2. p. 525. Peduncles clammy. Flowers white, drooping, sweet-scented, expanding in the evening.

Var. β, incána (Ser. herb. D. C. l. c.) stem leaves and calyxes hoary-tomentose; calyx pale or purplish. ♃. H. Native of Vallais.

Var. γ, oligophýlla (Otth. mss. D. C. l. c.) plant dwarf, pubescent; stem simple, almost wanting, purplish; leaves small, spatulate; peduncles 1-2-flowered.

Var. δ, alpìna (Reyn. in litt. D. C. l. c,) plant humble; stems almost leafless; leaves linear, pilose; panicles few-flowered. ♃. H. Native on mount Ganterberg.

Nodding-flowered, Nottingham or Dover Catchfly. Fl. June, July. Britain. Pl. ½ to 1½ foot.

158 S. viscòsa (Pers. ench. 1. p. 497.) plant pubescent, very clammy; stem simple, leafy; lower leaves large, lanceolate, upper ones linear-lanceolate, undulated; flowers large, nodding; spike panicled, long; calyx cylindrically-clavated, with 10 stripes; petals 2-parted, without a crest; stamens very long. ♃. H. Native of Italy, Sweden, and the Levant, on mount Ararat; also in Britain on the Dover cliffs. Cucùbalus viscòsus, Lin. spec. 592. Leaves almost like those of *Cynoglóssum officinàle*, but smaller. Flowers white, fragrant at night, drooping all round, not to one side.

Clammy Catchfly. Fl. June, July. Clt. 1739. Pl. 1 to 2 feet.

159 S. infra'cta (Waldst. et Kit. hung. 3. p. 257. t. 213.) glabrous; stems very leafy at the base; radical leaves rather spatulate, upper ones lanceolate-linear; flowers panicled, drooping one way; calyx cylindrically-ventricose; petals 2-parted, crowned. ♃. H. Native of Hungary. Flowers white, sweet-scented, expanding in the evening.

Infracted-peduncled Catchfly. Fl. June, July. Clt. 1800. Pl. 1 to 1½ foot.

160 S. li'vida (Willd. enum. p. 474.) pubescent; stem flexuous; leaves oblong-lanceolate; flowers panicled, drooping to one side; petals bifid, crowned. ♃. H. Native of Carniola. Like *S. nùtans* and *S. viridiflòra*, but differing from both in having a flexuous infracted stem. Flowers livid-green on the under surface, and white on the upper surface. S. nùtans *κ* lívida, D. C. prod. 1. p. 378.

Var. β, viridélla (D. C. prod. 1. p. 377. under *S. nùtans*,) pubescent, much branched; petals green or clothed with green pubescence. ♃. H. Native of the south of Europe.

Var. γ, saxátilis (Sims, bot. mag. 689.) glabrous; leaves linear-lanceolate; flowers usually white. ♃. H. Native of Siberia and France. S. Amblevàna, Lej. fl. spa. 1. p. 199. S. nùtans var. *ε*, glàbra, D. C. prod. 1. p. 377.

Livid-flowered Catchfly. Fl. June, July. Clt. 1816. Pl. 1 ft.

161 S. saxa'tilis (Bieb. fl. taur. 1. p. 338.) smooth; stem few-leaved; radical leaves oblong, bluntish, stalked, cauline ones lanceolate-linear; calyx clavate, 10-striped; flowers panicled, nakedish, drooping; petals bifid, crowned. ♃. H. Native of Caucasus on rocks. Flowers small, white, with the lobes of the limb of the petals narrow. Panicle rather naked; peduncles opposite, usually 3-flowered, erect after flowering. Calyx purplish. Anthophorum short. Perhaps the same as *S. saxátilis*, Sims, bot. mag. 689.

Stone Catchfly. Fl. June, July. Clt. 1800. Pl. 1 foot.

162 S. quadri'fida (Otth. mss. and D. C. prod. 1. p. 378.) stem single, rather tomentose; radical leaves elliptical or spatulate, upper ones lanceolate; flowers panicled, secund; peduncles 1-flowered, nodding; calyxes cylindrical; petals 2-4 cleft, or 2-parted, with bifid lobes. ♃. H. Native about Verona. Cucùbalus quadrífida, Pollin. pl. ver. p. 11. Petals white?

Four-cleft-petalled Catchfly. Fl. June, July. Clt. 1818. Pl. ½ to 1 foot.

163 S. ru'bens (Vest. in fl. 1821. p. 150.) pilose; stem erect; cauline leaves lanceolate, floral ones dilated at the base; flowers nodding, panicled; peduncles 3-6-flowered; calyx co-

loured; petals bifid, crowned. ♃ ? H. Native near Clangenfurt. Petals white?

Red-calyxed Catchfly. Fl. June, July. Pl. 1 foot.

164 S. LATIFÒLIA (Horn. hort. hafn. 1. p. 414.) stem branched, tall, hairy; leaves ovate-oblong, hairy beneath; panicle diffuse, with the branches very clammy; flowers drooping; pedicels and calyx coloured, very villous; calyx clavate; petals 2-parted, crowned. ♃. H. Native of Barbary? Flowers white.

Broad-leaved Catchfly. Fl. June, July. Clt. 1817. Pl. 1 to 1½ foot.

165 S. VIRIDIFLÒRA (Lin. spec. 597.) covered with soft hairs; stem branched, leafy; leaves large, elliptic-lanceolate, acute, lower ones stalked; flowers elongated, panicled, drooping; calyx ventricose, clavated; petals bifid, with long claws, crowned with bifid linear appendages. ♂. H. Native of Portugal and Spain. Lýchnis, &c. Herm. par. 199. t. 199. Flowers greenish-white.

Green-flowered Catchfly. Fl. Ju. July. Clt. 1739. Pl. 1 to 2 ft.

166 S. CHLORA'NTHA (Willd. spec. 2. p. 694.) plant glabrous; stems erect, simple, rather leafy; radical leaves lanceolate-spatulate, with scabrous margins, upper ones short, linear; flowers panicled, drooping one way; calyx cylindrical; petals 2-parted, with filiform lobes. ♃. H. Native of Germany, Viscàgo, &c. Dill. elth. 425. t. 316. f. 408.—Mentz. pug. t. 2. f. 1. (bad.) Panicle clammy. Flowers numerous, greenish-yellow.

German *green-flowered* Catchfly. Fl. June, July. Clt. 1732. Pl. 1 to 2 feet.

167 S. PSAMMI'TIS (Link. in Spreng. nov. prov. p. 39.) hairy; leaves lanceolate; flowers lateral, solitary, drooping; petals profoundly 2-lobed. ♃. H. Native of? Petals cream-coloured.

Sand Catchfly. Fl. June, July. Clt. 1818. Pl. 1 foot.

§ 2. *Flowers erect; calyxes elongated, clavated.*

* *Small plants, probably belonging to section Rupífraga. Calyxes not clavate.*

168 S. NICÆE'NSIS (All. ped. no. 1576. t. 44. f. 2.) plant villous, very clammy; stems branched, rather procumbent; leaves linear, obtuse; flowers panicled, nearly erect; calyx cylindrical; petals semibifid, with long claws, and bifid appendages; lobes of petals ovate-flat. ⊙. H. Native in the fields about Nice, and in Portugal, &c. in sand by the sea-side. S. villòsa, Mœnch. meth. 708. S. arenària, Desf. atl. 1. p. 354. S. arenícola, Presl. ex Spreng. Petals white on the upper surface, but of a pale yellowish-purple colour on the under surface, expanding in the evening. Radical leaves like those of *Cerástium vulgàtum*.

Nice Catchfly. Fl. June, July. Clt. 1820. Pl. procumbent.

169 S. RAMO'SA; plant pubescent, clammy; stems erect, much branched; leaves narrow, lanceolate; flowers numerous, panicled, erect; calyx ovate; petals bifid. ⊙. H. Native of Barbary in the sand by the sea-shore. S. ramosíssima, Desf. atl. 1. p. 354. Petals small, white.

Much-branched Catchfly. Fl. June, July. Clt. 1820. Pl. ½ to 1 foot.

170 S. ARENARIOI'DES (Desf. atl. 1. p. 355.) pubescent; stems somewhat tufted, slender, branched; leaves narrow-linear; flowers panicled; calyx tubular, villous; claws of petals a little higher than the calyx, with a bifid border. ♃. H. Native of Barbary in corn-fields. Petals white. Calyx purplish.

Arenaria-like Catchfly. Fl. June, July. Pl. ½ foot.

171 S. FUSCA'TA (Link. et Brot. ex Spreng. syst. 2. p. 413.) stem simple, clothed with glandular pubescence; leaves lanceolate; flowers panicled, on short pedicels; calyx campanulate, viscid, striated, coloured; petals somewhat emarginate. ♃. H. Native of Portugal. Flowers reddish brown.

Darkened Catchfly. Pl. 1 foot.

* * *Perennial, flowers white or cream-coloured.*

172 S. CATHÓLICA (Otth. mss. in D. C. prod. 1. p. 378.) plant velvety, clammy above; stem erect, branched, leafy; leaves ovate-lanceolate, acute, nearly smooth; flowers small, loosely panicled; calyx clavate; petals 2-parted, naked; stamens very long. ♃. H. Native of Italy and Sicily. Cucùbalus Cathólicus, Lin. spec. 593. Cucùbalus glutinòsus, Retz. S. Mussìni, Horn. hort. hafn. 1. p. 415. Jacq. vind. 1. t. 59. Panicle very large and spreading. Petals white, with linear lobes.

Universal Catchfly. Fl. July, Sept. Clt. 1711. Pl. 1 to 3 ft.

173 S. SPINE'SCENS (Smith, fl. græc. t. 431.) stem shrubby at the base, much branched, tufted; branches opposite, horizontal, as stiff as spines, pubescent; leaves stalked, spatulate, mucronulate, pubescent, upper ones narrow, lanceolate; floriferous branches erect, panicled; peduncles 1-flowered; calyx clavate; petals bifid, with small bifid entire appendages. ♄. F. Native of Asia Minor. Flowers cream-coloured.

Spinescent-branched Catchfly. Shrub 1 to 1½ foot.

174 S. TE'NUIS (Willd. enum. p. 474.) glabrous; leaves linear-lanceolate, lower ones rather spatulate, ciliated at the base; flowers panicled, erect; peduncles 3-flowered; bracteas lanceolate, with membranous ciliated margins; calyx cylindrically campanulate; petals 2-parted, with profoundly 2-lobed obtuse appendages. ♃. H. Native of Siberia. Petals pale cream-coloured.

Slender Catchfly. Fl. June, July. Clt. 1816. Pl. ¾ foot.

* * * *Annual plants, with white flowers.*

175 S. DIVERSIFÒLIA (Otth. mss. in D. C. prod. 1. p. 378.) stem erect, much branched, hardly pubescent; cauline leaves oblong-ovate, those on the branches linear, bluntish; flowers small, panicled; calyx clavate, almost glabrous; anthophorum short. ⊙. H. Native of? S. antirrhìna, Hort. madr. Petals whitish?

Divers-leaved Catchfly. Fl. June, July. Pl. 1 foot.

176 S. E'LEGANS (Brot. fl. lus. 2. p. 185.) stem short, generally 2-flowered, somewhat pubescent; radical leaves lanceolate-linear, acute, cauline ones very short; calyx with 10 stripes; petals bifid. ⊙. H. Native of Portugal on the tops of the mountains called Herminius, near Cantharus. Petals white, but reddish on the outside.

Elegant Catchfly. Fl. June, July. Clt. 1819. Pl. ⅛ foot.

177 S. INAPE'RTA (Lin. spec. 660.) root creeping; stems numerous from the root, simple; leaves all linear, scabrous or villous, with the margins serrulately-ciliated; flowers few, panicled, erect; calyx clavate at the apex; petals 2-parted, narrow, obtuse, with bifid entire appendages. ♃. H. Native of Greece on the mountains, and many places in the south of Europe. Smith, fl. græc. t. 420.—Dill. elth. t. 314. f. 407. Panicle clammy. Flowers cream-coloured above, but rust-coloured beneath.

Unopen Catchfly. Fl. May, July. Clt. Pl. ½ to ¾ foot.

* * * * *Perennial, flowers small, red, or flesh-coloured.*

178 S. SPATULA'TA (Bieb. fl. taur. 1. p. 341.) plant dwarf, pubescent; root thick, woody; stems numerous, ascending, rather dichotomous; lower leaves spatulate, upper ones ovate; flowers few, panicled; calyx short, clavate; petals bifid. ♃. H. Native of Caucasus. S. pygmæ'a, Adam. app. Web. et Mohr. cat. 1. p. 58. no. 26. Flowers deep-purple, about the size of those of *S. quinquevúlnera*.

Spatulate-leaved Catchfly. Fl. June, July. Clt. 1823. Pl. ⅛ ft.

179 S. RE'PENS (Patrin. herb. in D. C. prod. 1. p. 379.) plant hardly pubescent; root long, creeping; stems erect, almost simple; leaves linear, grassy, acute; flowers few, erect, pa-

nicled; calyx clavate; petals semi-bifid; stamens long. ♃. H. Native of Siberia. Petals red?

Creeping-rooted Catchfly. Fl. June, Aug. Clt. 1823. Pl. ½ to 1 foot.

180 S. GLAU'CA (Zea. in Poir. dict. suppl. 5. p. 153.) plant glabrous, glaucous; stems erect; leaves oblong-linear, acute; flowers 2 or 3, rising from the forks of the branches; calyx somewhat cylindrical; petals rather crenated at the apex. ⊙. H. Native of? Petals purple.

Glaucous Catchfly. Fl. June, July. Pl. ½ to 1 foot.

181 S. UNDULÆFÒLIA (Mor. sard. elench. fasc. 1. 1827.) plant clothed with glandular hairs; stem erect; leaves thickish, oblong-obovate or lanceolate, waved; flowers dichotomously-panicled, erect; calyx clavate; petals rather emarginate. ⊙. H. Native of Sardinia. Flowers red?

Waved-leaved Catchfly. Fl. June, July. Clt. 1829. Pl. 1 ft.

182 S. TENUIFÒLIA (Otth. mss. in D. C. prod. 1. p. 379.) plant hardly pubescent; stem erect, much branched, leafy, leaves filiform, acute, ciliated at the base; flowers few, panicled; calyx bladdery, clavated; petals bifid. ⊙. H. Native of Dahuria. Petals purple.

Fine-leaved Catchfly. Fl. June, July. Clt. 1820. Pl. ½ to 1 foot.

* * * * * *Flowers large, purple, or red.*

183 S. ALLAMA'NI (Otth. mss. in D. C. prod. 1. p. 379.) plant pubescent; stems erect, simple; leaves linear-lanceolate; flowers large, few, panicled; calyx cylindrical, coloured; petals broad, obcordate. ⊙. H. Native of Mexico. Petals purple.

Allaman's Catchfly. Fl. June, July. Pl. 1 foot.

184 S. VIRGI'NICA (Lin. spec. 600.) plant covered with clammy pubescence; stems procumbent, assurgent, branched; leaves lanceolate, lower ones on very long footstalks, ciliated at the base; flowers large, panicled, sometimes crowded; calyx amply clavated; petals broad, bifid, crowned, with long claws. ♃. H. Native of North America in the western parts of Virginia and Carolina, and in the Illinois country. S. cheiranthoìdes, Poir. dict. 7. p. 176. S. coccínea, Mœnch. suppl. 306.—Pl. alm. 231. t. 203. f. 1.? Petals dark-purple. A beautiful species. The leaves of this species are like those of the *Globe Amaranth*. The plant is reputed anthelmintic.

Virginian Catchfly. Fl. May, Aug. Clt. 1783. Pl. procumbent, ¼ to ¾ foot.

185 S. CATESBÆ'A (Walt. carol. 141.) branched, decumbent, clammy; leaves lanceolate, broad, with roughish margins; flowers panicled; calyx clavated, coloured; petals bifid, with 2 lateral teeth, lobes acute; claws of petals long; stamens exserted. ♃. H. Native of Carolina. Lýchnis viscòsa, &c. Catesb. carol. 54. t. 4. S. Virgínica, Michx. and Pursh, but not of Lin. A beautiful species, with dark-crimson flowers.

Catesby's Catchfly. Fl. June, July. Clt. 1810. Pl. ¼ to 1 ft.

186 S. MEXICA'NA (Moc. et Sesse, fl. mex. ined. and D. C. prod. 1. p. 379.) plant glabrous; root thick, horizontal; stems erect, branched; leaves lanceolate, acute; flowers panicled; calyx clavate, pilose; petals 4-cleft, lobes acute, furnished with scale-like appendages; stamens hardly longer than the petals. ♃. F. Native of Mexico. Petals red or purple.

Mexican Catchfly. Fl. June, July. Pl. 1 to 2 feet.

187 S. CAPE'NSIS (Otth. mss. in D. C. prod. 1. p. 379.) plant covered with clammy pubescence; stems horizontal, branched, leafy; branches erect; leaves large, linear-lanceolate; flowers large, panicled, few; calyx clavate, reticulate; petals broad, 2-parted, naked. ⊙. H. Native of the Cape of Good Hope. Flowers red.

Cape Catchfly. Fl. June, July. Pl. ½ to 1 foot.

188 S. NOCTIFLÒRA (Lin. spec. 599.) plant clammy, pubescent; stems erect, branched; leaves large, lower ones spatulate, upper ones lanceolate; flowers large, panicled; calyx cylindrical, ventricose, with alternate veins and stripes, teeth very long; petals 2-parted, crowned. ⊙. H. Native of Sweden and Germany. In England in fields on a sandy or gravelly soil, particularly in Cambridgeshire, Oxfordshire, very common about Wetherby, Yorkshire; not rare in Suffolk and Norfolk, especially on the west side of Norwich. Smith, engl. bot. 291. Lýchnis noctiflòra, Schreb. spic. p. 31. Ocymoìdes noctiflòrum, Comm. 109. t. 34. Petals of a pale blush-colour, expanding at night, with a short blunt bifid crest. This plant resembles the *Lýchnis dioíca* in habit.

Night-flowering Catchfly. Fl. July. England. Pl. 1 to 2 ft.

189 S. ORNA'TA (Ait. hort. kew. 2. p. 96.) plant pubescent; stems erect, branched; leaves lanceolate, bluntish; flowers panicled; calyx cylindrical, ventricose, with alternate stripes and veins; petals 2-parted; lobes broad, denticulated, crowned. ♂. G. Native of the Cape of Good Hope. Sims, bot. mag. 382. Flowers the size of a *clove-pink*, dark-purple.

Ornamented Catchfly. Fl. May, Sep. Clt. 1775. Pl. 2 ft.

* * * * * * *Flowers middle-sized, red, white, or cream-coloured.*

190 S. STRI'CTA (Lin. spec. 599.) plant hardly pubescent; stem erect, branched; leaves linear-lanceolate, lower ones stalked; flowers panicled, erect; calyx cylindrically-clavated, netted; petals small, emarginate, crowned. ⊙. H. Native of Spain. S. linæòla and S. eránthema, Wib. Petals red.

Straight Catchfly. Fl. June, July. Clt. 1802. Pl. 1 foot.

191 S. CRE'TICA (Lin. syst. 421.) stem erect, pubescent at the base, with the joints clammy; leaves scabrous, lower ones obovate, upper ones linear-lanceolate; flowers panicled, on long bractless pedicels; calyx clavate; petals 2-parted, narrow, with 2-parted, entire, acute appendages. ⊙. H. Native of Crete on rocks by the sea-side. Smith, fl. græc. t. 422.—Dill. elth. 422. t. 314. f. 404. Flowers deep rose-coloured.

Cretan Catchfly. Fl. June, July. Clt. 1732. Pl. 1 to 1½ foot.

192 S. MUSCI'PULA (Lin. spec. 601.) plant smoothish, clammy; stem erect; branches alternate, long; lower leaves lanceolate-spatulate, upper ones linear; flowers panicled; calyx amply clavated, netted; petals bifid. ⊙. H. Native of Spain.—Clus. hist. 1. p. 289. f. 1. Petals intensely red.

This plant is very clammy, and when flies light upon it they become entangled; hence the name of *Catchfly* for the whole genus.

Fly-trap Catchfly. Fl. June, July. Clt. 1596. Pl. 1 foot.

193 S. LEUCOPHÆ'A (Smith, fl. græc. t. 424.) plant villous, clammy, branched; leaves linear-oblong, recurved, sessile; stem usually dichotomous, somewhat panicled; calyx clavate; petals 2-parted, narrow, with 2-parted entire appendages. ⊙. H. Native of the island of Cyprus. Flowers cream-coloured above, but brownish beneath.

White-brown-flowered Catchfly. Fl. June, July. Pl. ½ foot.

194 S. CO'RSICA (D. C. fl. fr. 4. p. 756.) plant pubescent, very clammy; stems procumbent, leafy; leaves small, obovate; flowers terminal, erect; calyx clavate; petals 2-parted, crowned, with long claws. ♃. H. Native of Corsica.—Bocc. mus. t. 54. Petals purple?

Corsican Catchfly. Fl. June, July. Clt. 1820. Pl. procumbent.

195 S. XERA'NTHEMA (Viv. fl. cors. app. in Schlecht. Linnæa, 1. p. 501.) hairy; stem ascending; leaves all lanceolate, sessile; peduncles axillary, opposite, usually 1-flowered; petals semi-bifid, exserted; calyx elongated, membranous, hairy, glandular; capsules elliptically-clavate. ♃? H. Native of Corsica.

Dry-flowered Catchfly. Pl. ascending.

196 S. PUBE'SCENS (Lois. fl. gall. p. 727.) stem dwarf, much branched; leaves lanceolate, obtuse, tapering to the base, ciliated; flowers terminal, erect; calyx clavate, hairy; petals 2-parted, crowned, with very long claws. ⊙. H. Native of Corsica about Ajaccio. S. hírta, Willd. hort. berl. t. 23. Petals rose-coloured.

Pubescent Catchfly. Fl. June, July. Clt. 1818. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

197 S. ÆGYPTI'ACA (Lin. fil. suppl. 241.) plant somewhat tomentose; stems branched; leaves obovate, stalked; flowers terminal, erect; calyx clavate; petals obcordate, bidentate at the base. ⊙. H. Native of Egypt. Petals flesh-coloured, furnished with obtuse, emarginate appendages.

Var. β, *retroflèxa* (Pers. ench. 1. p. 500.) petals turned backwards; leaves linear; petals flesh-coloured.

Egyptian Catchfly. Fl. July, Aug. Clt. 1800. Pl. $\frac{1}{2}$ to 1 ft.

198 S. SERI'CEA (All. ped. no. 1573. t. 79. f. 3.) silky; stems branched; leaves ciliated with long hairs at the base, lower ones spatulate, upper ones oblong; flowers large, terminal, or in few-flowered panicles; calyx clavate; petals 2-parted, crowned, with long claws. ⊙. H. Native of Corsica. Petals rose-coloured, with the scales acute.

Var. β, *mìnor* (Otth. mss. in D. C. prod. 1. p. 380.) leaves opaque, somewhat fleshy; flowers and plant smaller. ⊙. H. Native of Portugal in the sand by the sea-side at the Tagus, not far from Lisbon and elsewhere; it also occurs on dry hills not far from the sea shore. S. littòrea, Brot. fl. lus. 2. p. 186. Petals dark purple, with the scales crenulated.

Silky Catchfly. Fl. June, July. Clt. 1801. Pl. α 1 foot; β $\frac{1}{2}$ foot.

199 S. PI'CTA (Pers. ench. 1. p. 498.) stems much branched, hardly pubescent; lower leaves obovate-spatulate, upper ones linear, acute; flowers loosely panicled; calyx clavate, striped with red; petals 2-parted, reticulated, crowned? ⊙. H. Native of France near Dax. Sweet, fl. gard. 92. S. Reinwárdtii, Roth. S. reticulàta, Hort. S. anastomòsans, Lag. gen. et spec. 15. Petals reticulated, with red nerves and veins. A beautiful rush-like plant.

Painted-flowered Catchfly. Fl. June, Aug. Clt. 1817. Pl. 1 to 2 feet.

200 S. RUGO'SA (Pers. ench. 1. p. 498.) plant glabrous; stems branched; leaves linear-lanceolate, acute; flowers terminal or somewhat panicled; calyx clavate, rather rough from wrinkled crenated stripes. ⊙. H. Native of? Petals reticulated, with red veins.

Wrinkled-calyxed Catchfly. Fl. June, July. Pl. 1 foot.

201 S. BI'COLOR (Thore, land. p. 174.) plant tufted, glabrous; rather clammy; stems branched at the base; leaves linear, flowers panicled; calyx clavate, reticulated; petals bifid, lobes lanceolate. ⊙. H. Native in the west of France, near Dax. D. C. icon. rar. gall. t. 42. S. Porténsis, Bonam. prod. Petals reticulated, with red nerves and veins?

Two-coloured-flowered Catchfly. Fl. June, Aug. Clt. 1820. Pl. 1 foot.

202 S. KAULFU'SII (Spreng. pl. min. cog. 2. p. 64. no. 123.) plant very smooth; root fusiform; stem almost simple; radical leaves oblong, cauline ones ovate-lanceolate; flowers panicled; calyx clavate; petals toothed, with long claws. ♃. H. Native at Politz. Flowers purple?

Kaulfus's Catchfly. Fl. June, July. Pl. 1 foot.

203 S. ATO'CION (Murr. syst. ed. 13. p. 421.) stem branched, viscid, pubescent; leaves roundish-obovate, lower ones on long footstalks, uppermost ones sessile; panicle fastigiate, trichotomous; calyx long, clavate; petals obcordate, obtuse, with an acute tooth on each side at the base, crowned by 2 protuberances. ⊙. H. Native of the Levant. Jacq. vind. 3. t. 32. Flowers pink. This plant ought to follow *S. orchídea*, Lin. p. 413. no. 245.

Atocion Catchfly. Fl. June, July. Clt. 1781. Pl. $\frac{1}{2}$ to 1 ft.

§ 3. *Flowers erect; calyxes long, clavated. The plants contained in this division are easily distinguished by their long, narrow calyx, sometimes even an inch in length.*

204 S. RETICULA'TA (Desf. atl. 1. p. 350. t. 99.) plant glabrous, clammy; stems branched; leaves lanceolate-linear; flowers dichotomously panicled; calyx very long, clavated, reticulated; petals obcordate, crowned with bifid acute appendages. ⊙. H. Native of Algiers. Calyx with 10 stripes, reticulated, with purple veins. Flowers small, rose-coloured, fastigiate.

Reticulated-calyxed Catchfly. Fl. June, Aug. Clt. 1804. Pl. 1$\frac{1}{2}$ foot.

205 S. ECHINA'TA (Otth. mss. in D. C. prod. 1. p. 380.) plant pubescent; stem slender, branched; cauline leaves small, linear; flowers panicled; calyx long, cylindrically-clavated, with 10 bristly echinated ribs; petals bifid. ⊙? H. Native of?

Echinated-calyxed Catchfly. Fl. June, July. Pl. 1 foot.

206 S. PENNSYLVA'NICA (Mich. fl. bor. amer. 1. p. 272.) plant clammy-pubescent; stems procumbent; leaves lanceolate, lower ones rather spatulate; flowers panicled; calyx long, tubular; petals emarginate and rather crenated. ♃. H. Native of North America in dry sandy woods, and on rocks from New York to Virginia. Ker, bot. reg. 247. Lodd. bot. cab. t. 41. Perhaps the same as S. Virgínica, Willd. spec. 2. p. 702. S. Caroliniàna, Walt. carol. 142. Flowers purple, very handsome.

Pennsylvanian Catchfly. Fl. May, June. Clt. 1806. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot, procumbent.

207 S. SUCCULE'NTA (Forsk. descr. p. 89.) plant clammy-pubescent; stems diffuse, thick, branched, leafy; leaves obovate, fleshy; flowers panicled; calyx long, somewhat ventricose, ribbed; petals 2-parted, crowned, with very long claws. ♃? H. Native of Egypt at the catacombs of Alexandria. Delile, fl. ægypt. t. 29. f. 2. Flowers purple?

Succulent-leaved Catchfly. Fl. May. Pl. $\frac{1}{2}$ foot.

208 S. VALLE'SIA (Lin. spec. 603.) plant tufted, clammy, pubescent; root woody; stems dwarf, assurgent, a little branched; leaves lanceolate, lower ones spatulate; flowers terminal, rarely twin; calyx very long, clavate, reticulated; petals bifid, crowned. ♃. H. Native in the alps of Vallais. All. ped. no. 1574. t. 23. f. 2.—Bocc. mus. 65. t. 54. Flowers flesh-coloured or white, smelling at night, of a deeper colour beneath.

Vallesian Catchfly. Fl. June, Aug. Clt. 1765. Pl. $\frac{1}{2}$ foot.

209 S. CA'SPICA (Pers. ench. 1. p. 497.) plant scabrous; stems branched; leaves spatulate-lanceolate; flowers terminal, and in the forks of the stem; calyx oblong, cylindrical, pubescent; petals 2-parted, and furnished with a tooth on each side at the base. ♃. H. Native of Caucasus on sterile hills. S. fruticulòsa, Bieb. tab. no. 17. S. frutéscens, Bieb. casp. 175. S. suffrutéscens, Bieb. fl. taur. 1. p. 340. Stems shrubby. Petals pink.

Caspian Catchfly. Fl. June, July. Clt. 1823. Pl. 2 feet.

210 S. SALZMA'NNII (Otth. mss. in D. C. prod. 1. p. 381.) plant tomentosely-pilose; root woody, branched; stems simple, leafy; leaves lanceolate-spatulate, numerous at the base; flowers densely panicled, erect; calyx long; petals broad, obcordate, naked. ♃. H. Native of Corsica. Flowers red? Perhaps belonging to section *Atocion*.

Salzmann's Catchfly. Fl. June, July. Pl. 1 foot.

211 S. REQUIE'NII (Otth. mss. in D. C. prod. 1. p. 381.) plant pubescent; root thick, woody; stem erect, simple, leafy; leaves oblong-obovate, acuminated; flowers few, panicled; calyx very long. ♃. H. Native of Corsica near Bonifacio.

Requien's Catchfly. Fl. June, Aug. Pl. 1 foot.

212 S. AMŒ'NA (Lin. spec. 596.) plant rather pubescent; root woody; stems decumbent, branched; leaves soft, numerous at the bottom, lanceolate, rather acute, nearly smooth; flowers numerous, disposed in ample secund panicles; calyx cylindrically clavated, obovate; petals bifid, with a converging crest. ♃. H. Native of Tartary. Calyx long. Petals white.

Pleasing Catchfly. Fl. July. Clt. 1779. Pl. decumbent.

213 S. SUPI'NA (Bieb. fl. taur. 1. p. 336.) plant tufted, covered with clammy pubescence; stems woody, procumbent, branched; leaves linear, acute; flowers on short alternate pedicels; calyxes long, cylindrically clavated, tomentose; petals with long claws, bifid, crowned; lobes narrow, diverging. ♃. H. Native of Caucasus. Sims, bot. mag. t. 1997. Petals white.

Var. β, latifòlia; leaves broader and flat.

Supine Catchfly. Fl. June, Aug. Clt. 1804. Pl. procumbent ½ foot.

214 S. DEPRE'SSA (Bieb. fl. taur. 1. p. 336.) plant clammy; root woody; stems numerous, branched at the base, leafy, pubescent; leaves small, lanceolate, somewhat ciliated; flowers solitary, terminal, rarely twin; calyx very long, cylindrically-clavated; petals bifid, with long claws, crowned. ♃. H. Native of Iberia on rocks about Tiflis. Flowers white.

Depressed Catchfly. Fl. Ju. Aug. Clt. 1816. Pl. procumbent.

215 S. PARADO'XA (Lin. spec. 1673.) stem erect, pubescent; leaves smooth, hardly ciliated, lower ones obovately-lanceolate, upper ones linear; flowers large, disposed in racemose panicles; calyx long, cylindrically clavated, downy; petals 2-lobed; lobes broad, obovate, with 2-parted appendages. ♃. H. Native of Dauphiny. Jacq. hort. vind. 3. t. 84. Flowers large, white. This plant is said to grow on the Dover Cliffs, but certainly not to be found there at present. What the older botanists found on Dover Cliffs appear to be *Silène nùtans* and *S. viscòsa*, the one with naked petals and the other with crested petals.

Var. β, tenuifòlia (Otth. mss. in D. C. prod. 1. p. 381.) stem twiggy, simple; leaves linear, acute. Native about Genoa.

Paradoxical or Dover Catchfly. Fl. July. Clt.? Pl. 1½ ft.

216 S. CHLORÆFÒLIA (Smith, icon. ined. 1. p. 13. t. 13.) plant very smooth and glaucous; stems branched; leaves elliptical, pointed, upper ones rather cordate; flowers large, disposed in a terminal panicle; calyx long, cylindrical, rather clavated, striped; petals cloven half-way down, with a 2-lobed crest. ♃. H. Native of Armenia. Sims, bot. mag. t. 807. Flowers white, turning reddish as they fade.

Chlora-leaved Catchfly. Fl. Aug. Sept. Clt. 1796. Pl. 1 to 2 feet.

217 S. ITA'LICA (D. C. fl. fr. 4. p. 753.) pilosely-pubescent; stems branched at the base; lower leaves spatulate, obtuse, stem ones lanceolate, acute, connate; flowers in spreading panicles; branches of panicle 3-flowered; calyx long, clavated; petals 2-lobed, obtuse, naked. ♃. H. Native of Italy and Laconia, l. c. Smith, fl. græc. 429. Cucùbalus Itálicus, Lin. spec. 593. Jacq. obs. 4. p. 12. t. 79. Cucùbalus silenoìdes, Vill. dauph. 3. p. 614. S. Sícula, Presl. Petals white above but flesh-coloured underneath.

Var. β, càna (Otth. mss. in D. C. prod. 1. p. 382.) plant a little branched, very soft; panicle dense. S. mollíssima, Lois. not. p. 166. Petals white above, l. c.

Var. γ, rubriflòra (Otth. mss. in D. C. l. c.) plant very soft; calyx purplish; petals purple.

Italian Catchfly. Fl. May, Jul. Clt. 1759. Pl. 1 to 2 ft.

218 S. PANICULA'TA (Otth. mss. in D. C. prod. 1. p. 382.) plant velvety, clammy; stem erect, much branched, leafy; leaves lanceolate, thickish; flowers in simple panicles; calyx cylindrically-clavated, long; petals bifid; stamens long. ♃. H. Native of? Petals white?

Panicled Catchfly. Fl. June, July. Pl. 1½ foot.

219 S. PAUCIFLÒRA (Salzmann, exsic. in D. C. prod. 1. p. 382.) plant tufted, pubescent; stems numerous, simple, slender, almost leafless; leaves linear-lanceolate, numerous at the base of the stems; flowers terminal and in few-flowered panicles; calyx narrow, cylindrical; petals 2-parted, reticulated, crowned. ♃. H. Native of Corsica. Petals striped.

Few-flowered Catchfly. Fl. May, July. Pl. 1 foot.

220 S. JU'NCEA (Smith, fl. græc. t. 421.) stem simple, pubescent, panicled at the top; lower leaves obovate, acute, stalked, hoary-pilose, upper ones sessile, linear-lanceolate, smooth, but ciliated at the base; calyx elongated, clavate; petals 2-parted, narrow, with 2-parted tridentate appendages. ♂. H. Native of Asia Minor. Branches long, paniculate, few-flowered. Flowers white above and rusty beneath.

Rushy Catchfly. Pl. 2 to 3 feet.

221 S. PA'TULA (Desf. atl. 1. p. 356.) plant pubescent, clammy; stems erect, branched, branches spreading; lower leaves ovate-spatulate, upper ones lanceolate; flowers panicled; calyx long, clavated, narrow; petals semibifid, crested, with long claws. ♃. H. Native of Barbary in corn-fields. Petals white, about the size of those of *Lýchnis dioíca*. Peduncles 3-flowered.

Spreading-branched Catchfly. Fl. May, July. Clt. 1823. Pl. ½ to 2 feet.

222 S. POLYPHY'LLA (Lin. spec. 601.) plant pubescent; stems assurgent, much branched, very leafy; leaves linear, acute; flowers erect, panicled; calyx clavated; petals bifid. ♃. H. Native of Austria, Hungary, and Bohemia.—Clus. hist. 1. p. 290. f. 2. Flowers white above but purplish below.

Many-leaved Catchfly. Fl. June, July. Clt. 1800. Pl. 1 to 1½ foot.

223 S. NEMORA'LIS (Waldst. et Kit. hung. 3. p. 277. t. 249.) stem simple, pubescent; leaves pubescent, lower ones large, roundish, stalked, upper ones lanceolate; flowers panicled; calyx long, clavated; petals 2-parted, crowned. ♂. H. Native of Hungary. Cucùbalus floccòsus, Fic. Petals white above but purplish below.

Grove Catchfly. Fl. Ju. Jul. Clt. 1816. Pl. 1 to 1½ foot.

224 S. CALYCI'NA (Presl. sic. ex Spreng. syst. app. p. 182.) stem simple, erect, scabrous, clammy at the top; leaves linear-lanceolate, acute, ciliately-serrulated; flowers panicled, bracteate; calyx long, clavate, and is as well as the pedicels clothed with clammy pubescence; petals bifid, coloured. ♃? H. Native of Sicily.

Calycine Catchfly. Fl. June, July. Pl. 1 to 2 feet.

225 S. LONGIFLÒRA (Ehrh. beitr. 7. p. 144.) plant glabrous; stems erect, twiggy; leaves linear-lanceolate, rather glaucous, radical ones very long; flowers panicled; peduncles 1-flowered; calyx very long, clavated; petals 2-parted, crowned. ♃. H. Native of Hungary and Tauria, Waldst. et Kit. hung. 1. p. 7. t. 8. Petals whitish above but tinged with red below. A tall, smooth plant, with purplish stems.

Var. β, júncea (Otth. mss. in D. C. prod. 1. p. 382.) leaves all linear; panicle small. ♃. H. Native of Iberia. S. júncea, Roth. catalect. 1. p. 54.

Long-flowered Catchfly. Fl. July, Sept. Clt. 1793. Pl. 1½ to 3 feet.

226 S. BUGLOSSIFÒLIA (Smith, in Rees' cycl. vol. 32.) plant hairy, clammy; stem simple, leafy; leaves undulated, the upper ones lanceolate; flowers panicled; peduncles 1-flowered, opposite, shorter than the flowers; calyx cylindrical, an inch long; petals 2-parted, naked. ♂. H. Native of the Levant at the foot of Mount Ararat. Flowers white above.

Bugloss-leaved Catchfly. Fl. Aug. Pl. 3 feet.

227 S. BUPLEUROÌDES (Lin. spec. 598.) plant glabrous, clammy; stem assurgent, branched; leaves linear-lanceolate, acute, lower ones very long; upper bracteas with broad, mem-

branaceous margins; flowers panicled; peduncles generally 2-3-flowered; calyx long, clavate, purplish; petals 2-lobed, crowned. ♃. H. Native of Persia and on Mount Atlas. Petals white on the upper surface but pale violet underneath. Desf. atl. 1. p. 351.—Tourn. itin. 2. p. 139. t. 154.

Bupleurum-like Catchfly. Fl. June, Aug. Clt. 1801. Pl. 1 to 2½ feet.

228 S. ca'na (Otth. mss. in D. C. prod. 1. p. 382.) plant hoary-pubescent; stem twiggy, simple; lower leaves ovate-oblong, stalked, ciliated at the base, upper ones linear; flowers panicled; peduncles 3-flowered; calyx long, clavated, purplish; petals bifid, with long claws. ♃. H. Native of? Petals whitish above, but brownish underneath?

Hoary Catchfly. Fl. Ju. Jul. Clt. 1824. Pl. 2 feet.

229 S. molli'ssima (Pers. ench. 1. p. 498.) stem herbaceous, fleshy; leaves fleshy, silky pubescent, radical ones ovate-spatulate; panicle corymbose, somewhat dichotomous; petals bifid, naked; calyx cylindrically-clavate. ♃. H. Native of Italy and Asia Minor. Flowers white. Cucùbalus mollíssimus, Lin. spec. 593.

Very soft Catchfly. Fl. Jul. Sept. Clt. 1739. Pl. 1 to 2 ft.

230 S. pilòsa (Spreng. syst. 2. p. 411.) plant hoary, villous; stems erect, branched, clammy; leaves undulated, lower ones large, spatulate, upper ones lanceolate; flowers in ample trichotomous panicles; calyx cylindrically clavated; petals 2-parted, crowned. ♃. H. Native of Italy, Hungary, and Transylvanica by the sea-side. Cucùbalus pilòsus, Willd. enum. 471. Cucùbalus mollíssimus, Waldst. et Kit. hung. 3. t. 248. Flowers white above but brownish or reddish beneath.

Pilose Catchfly. Fl. Jul. Sept. Clt. 1739. Pl. 1 to 1½ ft.

231 S. re'gia (Sims, bot. mag. t. 1724.) plant clammy, pubescent; leaves ovate-lanceolate; flowers large, panicled; calyx downy, long, tubular; petals oblanceolate, undivided, crowned with bicuspidate appendages; stamens very long. ♃. H. Native of North America on the Mississippi. S. Virgínica, var. Illinoénsis, Mich. fl. bor. amer. 1. p. 272. Flowers large, dark crimson, in trichotomous panicles.

Royal Catchfly. Fl. May, Aug. Clt. 1811. Pl. 2 to 5 feet.

232 S. Baldwy'nii (Nutt. gen. amer. 1. p. 288.) plant pilose; leaves somewhat lanceolate; flowers very large, in trichotomous panicles; petals jagged, divaricating. ♃. F. Native of Florida. Flowers very large, rose-coloured.

Baldwyn's Catchfly. Fl. May, July. Pl. 1 to 3 feet.

233 S. Mocinia'na (D. C. prod. 1. p. 382.) plant rather villous; stem simple, erect; leaves lanceolate; flowers panicled; calyx cylindrically clavated, very long; petals 6-cleft, furnished with 2 bifid appendages. ♃. F. Native of Mexico. Moc. et Sesse. pl. mex. icon. ined. Flowers purple.

Mocino's Catchfly. Fl. Ju. Jul. Clt. 1827. Pl. 3 to 4 ft.

234 S. lacinia'ta (Cav. icon. 6. p. 44. t. 564.) plant pubescent; stem erect, branched; leaves large, lanceolate, acute; flowers very large, terminal, rather drooping; peduncles 1-flowered; calyx long, cylindrically ventricose: petals somewhat 4-cleft; stamens short. ♃. F. Native of South America. Flowers crimson, with a white, 2-parted crest.

Jagged-petalled Catchfly. Fl. June, July. Pl. 3 to 4 feet.

235 S. rotundifòlia (Nutt. gen. amer. 1. p. 288.) stems decumbent, pilose; leaves broad-oval, stalked, ciliated; flowers few, panicled; calyx angular, cylindrically-clavated; petals jagged, somewhat 4-cleft, crowned. ♃. H. Native of North America on the banks of the Ohio and Tenessee. Petals scarlet.

Round-leaved Catchfly. Fl. June, Aug. Pl. decumbent.

236 S. adsce'ndens (Lag. gen. amer. 15.) plant villous, clammy; leaves linear-lanceolate, obtuse, ciliated; peduncles 1-flowered, fruit-bearing ones spreading; calyx oblong, clavated, circularly reflexed at the base; petals bifid. ⊙. H. Native of Spain. Flowers red.

Ascending-stemmed Catchfly. Fl. June, July. Clt. 1822. Pl. ½ foot.

237 S. dianthoi'des (Pers. ench. 1. p. 500.) leaves linear; flowers panicled; calyx striated, sessile between 2 leaves, which form an involucrum: petals bifid. ⊙? H. Native of the Levant. Cucùbalus saxífragus, Schreb. dec. 9. t. 5. Flowers pink or purple? Calyx striped with purple.

Dianthus-like Catchfly. Fl. June, July. Pl. ½ to 1 foot.

Sect. VIII. Ato'cion (from *α* priv. and *τοκος*, *tokos*, the young or brood of any thing; because many of the plants contained in this section often produce nothing but male flowers.) Otth. mss. in D. C. prod. 1. p. 383. Caulescent. Flowers corymbose. Calyxes clavated, with 10 stripes.

* *Perennial or shrubby.*

238 S. cordifòlia (All. ped. no. 1581. t. 23. f. 3.) plant clammy, glaucous; stems simple, hairy; leaves ovate, pointed, pubescent, upper ones somewhat cordate; flowers 1-4, terminal, almost sessile; calyx ovate, cylindrically clavated; petals quinquefid with a bifid crest. ♃. H. Native of Piedmont on rocks, also about Nice. Petals pale pink above and yellowish beneath.

Heart-leaved Catchfly. Fl. June, July. Clt. 1819. Pl. ¼ ft.

239 S. fruticòsa (Lin. spec. 597.) stem shrubby at the base, much branched, tufted; flowering stems simple; leaves obovate, mucronate, dark-green, permanent, ciliated, particularly towards the base; flowers crowded, fastigiately-panicled; calyx clavate; petals deeply emarginate, obtuse, with 4-parted appendages. ♄. H. Native of Sicily and the island of Cyprus on rocks. Smith, fl. græc. t. 428. S. nítida, Lag. gen. et spec. p. 15.—Bocc. sic. 48. t. 30. f. 2. Petals with greenish claws, flesh-coloured on the limb above, but greenish below.

Shrubby Catchfly. Fl. June, July. Clt. 1629. Sh. 1 to 1½ ft.

240 S. cæspitòsa (Stev. in mem. soc. mosq. 2. p. 262.) plant tufted, roughish; root thick, woody; stems simple, slender, very leafy at the base; leaves small, linear, acute; flowers 2-3, terminal; calyx clavated; petals 2-lobed, crowned? ♃. H. Native of Caucasus. Petals pink.

Turfy Catchfly. Fl. May, July. Clt. 1824. Pl. ¼ to ½ ft.

241 S. tomentòsa (Otth. mss. in D. C. prod. 1. p. 383.) plant very soft; root woody, branched; stems simple, very leafy at the base, almost leafless above; leaves fleshy, lower ones large, shell-formed, upper ones linear; flowers disposed in a crowded corymb; calyx cylindrically-clavated; petals 2-parted. ♃. H. Native of Gibraltar on rocks. Petals pink.

Tomentose Catchfly. Pl. ½ to 2 feet.

242 S. platype'tala (Otth. mss. in D. C. prod. 1. p. 383.) plant pilosely-pubescent; stem humble, very leafy at the base; leaves ciliated at the base, lower ones lanceolate-spatulate, upper ones linear-lanceolate; flowers few, in a panicled corymb; calyx clavated; petals broad-ovate, with long claws. ♃. H. Native of North America. S. Virgínica, Rafinisque in litt. but not of Lin. Flowers large, crimson.

Broad-petalled Catchfly. Fl. May, Aug. Pl. ½ foot.

243 S. Berge'rii (Schott. ex Spreng. syst. 2. p. 411.) stem simple, pilose at the base; leaves lanceolate, also pilose; panicle corymbose, few-flowered; calyx clavate, hispid; petals obcordate, crowned. ♃? H. Native of Italy. Flowers red?

Berger's Catchfly. Pl. 1 foot.

244 S. polygonoìdes (Pers. ench. 1. p. 500.) plant pilose; root thick; stems procumbent, branched; leaves small, lower ones lanceolate, upper ones elliptical, acute; flowers sessile, in corymbs; calyx cylindrical; petals emarginate, naked? ♃. H. Native of the island of Naxia. Cucùbalus polygonoìdes, Willd. spec. pl. 2. p. 690. Flowers white, with a purple circle in the centre. Leaves like those of *Thýmus serpýllium*.

Polygonum-like Catchfly. Pl. trailing.

* * *Annual or biennial.*

245 S. ORCHI'DEA (Lin. fil. suppl. 241.) plant clammy; stem branched, pubescent; leaves ovate, ciliated, lower ones on short footstalks; flowers in dense corymbs; calyx long clavated; petals deeply 2-lobed, furnished with a lobe on each side at the base, crowned with bifid entire appendages. ⊙. H. Native of the Levant and the Grecian Islands. Smith, fl. græc. t. 427. Calyx and petals rose-coloured. The petals have the appearance of the labellum of some species of *Orchis*. The *S. Atòcion* of Murr. p. 413. no. 203. has been considered by many botanists identical with this species, but it is truly distinct. It ought, however, to have been placed in the present section.

Orchis-like-petalled Catchfly. Fl. June, July. Clt. 1781. Pl. ½ to 1 foot.

246 S. PSEU'DO-ATO'CION (Desf. atl. 1. p. 353.) plant clammy; stem much branched; leaves glabrous, lower ones obovate-spatulate; flowers in lax corymbs; calyx long clavated; petals very entire, linear, crowned. ⊙. H. Native of the north of Africa. Petals rose-coloured.

False-Atocion Catchfly. Fl. Ju. July. Clt. 1820. Pl. ¼ to ¾ ft.

247 S. CRI'SPA (Poir. dict. 7. p. 162.) root slender; stem erect, almost simple, hairy; leaves oblong-linear, obtuse, with curled spinulose margins; flowers solitary, disposed in close bundles; calyx long, clavated; petals bifid. ⊙. H. Native of Barbary. Flowers pink?

Curled-leaved Catchfly. Fl. July, Sept. Pl. 1 foot.

248 S. ARME'RIA (Lin. spec. 601.) plant quite smooth, glaucous; stem branched; leaves ovate-lanceolate, rather cordate at the base; flowers in corymbose panicles; calyx long, clavated; petals obcordate, crowned. ⊙. H. Native of France and Switzerland. In England in fields, or on banks, or on old walls, a doubtful native. Smith, engl. bot. t. 1398. Fl. dan. t. 559. Cucùbalus fasciculàtus, Lam. Flowers pink.

Var. β, álba (D. C. prod. 1. p. 384.) flowers white.

Sweet-William or Lobel's Catchfly. Fl. July, Sep. Pl. 1 to 1½ foot.

249 S. LERCHENFELDIA'NA (Baumg, stirp. trans. 1. p. 398.) glabrous; stem filiform, decumbent; leaves oblong or linear-lanceolate, cauline ones ovate-lanceolate, quite smooth, rather crenulated; panicle simple, corymbose, few-flowered; petals emarginate, crowned. ⊙. H. Native of Transylvania on the Alps. Flowers red?

Lerchenfeld's Catchfly. Pl. decumbent.

250 S. SIEGE'RI (Baugm. stirp. trans. 1. p. 400.) stem erect, simple, furrowed; radical leaves numerous, oblong-lanceolate, channelled, stalked; cauline leaves 2, linear; flowers terminal, solitary, or 2-3 in an umbel; calyx clavated, campanulate; petals obcordate, crowned? ⊙? H. Native of Transylvania on the Alps about Rodno. Flowers pink?

Sieger's Catchfly. Fl. June, July. Pl. ½ to 1 foot.

251 S. CONGE'STA (Sibth. and Smith, prod. fl. græc. p. 300.) plant pubescent; stem rather branched, nakedish, rather clammy near the top; leaves obovate, obtuse, green, stalked, crowded at the base of the stem; flowers disposed in dense tufted corymbs; calyx very long, clavated; petals 2-parted, naked. ⊙. H. Native of the Pyrenees and Greece. Flowers greenish.

Crowded-flowered Catchfly. Fl. July, Sept. Clt. 1818. Pl. 1 to 1½ foot.

252 S. COMPA'CTA (Fisch. in Horn. hafn. 1. p. 417.) plant glabrous, glaucous; stem erect, branched; leaves ovate-cordate, sessile, with 2 large ones like an involucre near the corymb, appearing as if they were connate; bracteas narrow, shorter than the pedicels; flowers crowded into dense corymbs; calyx very long, clavated; petals oboval, entire, crowned. ♂. H. Native of Russia. S. Armèria, Bieb. fl. taur. no. 837. Flowers pink. This is very like *S. Armèria*, but easily distinguished by its entire petals.

Compact-flowered Catchfly. Fl. July. Clt. 1810. Pl. 1½ ft.

253 S. PERFOLIA'TA (Otth, mss. in D. C. prod. 1. p. 384.) plant very smooth, glaucous; stems slender, filiform, almost simple; leaves roundish, perfoliate; flowers in capitate corymbs, with a 1-leaved concave involucrum, which is larger than the leaves; calyx rather inflated, oblong; petals small. ♂. H. Native of the Levant. Cucùbalus chloræfòlius, Poir. dict. 2. p. 416. Flowers red?

Perfoliate Catchfly. Fl. June, July. Clt. 1817. Pl. 1½ foot.

254 S. UNDULATIFÒLIA (Mor. ex Spreng. syst. append. p. 182.) stem erect, glabrous; leaves spatulate, oblong, obtuse, waved, smooth; flowers in terminal fascicles; calyx smooth, coloured; petals 2-lobed. ⊙. H. Native of Sardinia. Flowers red.

Wavy-leaved Catchfly. Fl. June, July. Pl. 1 foot.

255 S. FŒ'TIDA (Link. ex Spreng. syst. 2. p. 406.) stem erect, nearly simple, villous, clammy; leaves ovate, acute, also villous and clammy; flowers tern, terminal, peduncled, erect; calyx cylindrical. ♂. H. Native of Portugal. This plant ought perhaps to be placed in section *Siphonomórpha*.

Fœtid Catchfly. Pl. 1 foot?

† *A plant belonging to section Behenántha, which ought to follow S. angustifòlia*, no. 29, p. 400.

256 S. DOUGLA'SII (Hook. fl. bor. amer. p. 88.) pubescent; stems erect, flexuous, slender; leaves remote, long, linear; flowers panicled; calyx obovate, at length inflated, striated, pubescent; petals bifid. ♃. H. Native of North America above the grand rapids of the Columbia, and on the western declivity of the Rocky Mountains. Flowers white.

Douglas's Catchfly. Pl. 1 foot.

Cult. The few green-house kinds of this genus thrive well in a rich light soil, and young cuttings of the shrubby species, planted under a hand-glass, strike root readily. The hardy herbaceous kinds only require to be planted in the open border, but the dwarfer species are well adapted for rock-work. Some of them will not live long unless kept in pots, as alpines, that they may be sheltered with ease in the winter, particularly *Silène cordifòlia perfoliàta, Catesbæ'a, Virgínica, acaúlis, quadridentàta, rupéstris, glaucifòlia, règia, pumìlio, pusílla, Pennsylvánica*, &c.; these may be grown in a mixture of loam and peat, as well as those marked frame. The seeds of the hardy annual and biennial kinds only require to be sown in the beginning of April where they are intended to remain. All the species may be easily increased by seeds, but all the truly perennial kinds are easier increased by dividing the plants at the root in spring. The sections *Nanosilène, Siphonomórpha, Rupífraga*, and *Atòcion*, contain the most elegant species.

VII. VISCA'RIA (from *viscus*, bird-lime; because the stems of the plants are covered with clammy gluten.) Roehler.

LIN. SYST. *Decándria, Pentagýnia*. Calyx cylindrical, clavated at the apex, 5-toothed, naked. Petals 5, unguiculated, with scales in the throat. Stamens 10. Styles naturally 5. Capsule 5-celled. Anthophorum long. Evergreen tufted plants, with glassy leaves, and long clustered or corymbose racemes of red or white flowers.

1 V. VULGA'RIS (Roehl.) stem viscid about the joints; petals slightly cloven; leaves linear-lanceolate, fringed at the base. ♃. H. Native throughout the whole of the north of Europe in dry meadows and in fissures of rocks. In Britain on Arthur's seat, and on rocks by the hermitage a mile south of Edinburgh; on the sides of Craig Wreidhin, Montgomeryshire, &c. Lýchnis viscària, Lin. spec. 625. Smith, engl. bot. 788. Fl. dan. t.

1032.—Clus. hist. 1. p. 289. f. 2. Flowers rose-coloured, scentless, disposed in a crowded clustered raceme. Calyx purplish.

Var. β, flòre-plèno ; flowers double. This plant is very common in rustic gardens, where it is called *Double Catchfly.* It is a very ornamental plant.

Common Red German Catchfly, or Rock Lychnis. Fl. May, June. Britain. Pl. 1 to 1½ foot.

2 V. negle'cta (G. Don, in Loud. hort. brit. p. 186.) stem not clammy ; petals entire ; leaves lanceolate, linear, ciliated at the base. ♃. H. Native of? Lýchnis viscària albiflòra, Hort. Flowers white. An elegant plant.

Neglected Rock Lychnis. Fl. May, June. Clt.? Pl. 1 foot.

3 V. alpi'na ; smooth, not viscid ; petals cloven ; flowers densely corymbose ; leaves linear-lanceolate, naked at the base. ♃. H. Native of several parts in the north of Europe, Lapland, Denmark, &c. also said to grow on the Pyrenees. In Scotland, near the summits of the Clova Mountains, in Angus-shire. Lychnis alpìna, Lin. spec. 626. Smith, engl. bot. 2254. Fl. dan. 62. Flowers crowded into a dense tuft at the top of the stems, of a bright rose-colour, tetragynous in the American plant.

Alpine Red Campion or Rock Lychnis. Fl. June, July. Scotland. Pl. ½ foot.

4 V. Helve'tica (G. Don, in Loud. hort. brit. 186.) smooth, not viscid ; leaves lanceolate, naked at the base ; petals cloven to the middle, acute ; calyx ventricose ; flowers crowded into a convex umbel ; anthophorum long. ♃. H. Native of Switzerland on the Alps. Lýchnis alpìna, Sims, bot. mag. 394. Flowers beautiful rose-coloured ; petals crowned with small protuberances rather than teeth ; this is said to be the case in *V. alpìna.* Hall. hist. 1. p. 400. t. 17. There are several species under the name of *Lýchnis alpìna* in the gardens. The one so named in the Botanical Magazine is a biennial plant.

Swiss Red Campion or Rock Lychnis. Fl. June, July. Clt. 1810. Pl. ½ foot.

5 V. Magella'nica ; plant rather villous, tufted ; leaves linear, acute ; flowers in terminal fascicles ; petals emarginate, with a tooth on each side at the base ? equalling the campanulate calyx in length. ♃. F. Native of the Straits of Magellan. Lýchnis Magellánica, Lam. dict. 3. p. 641.

Magellan Rock Lynchis. Pl. ½ foot.

Cult. Pretty plants, well adapted for rock-work, or the front of flower-borders. They thrive best in light sandy soil. *V. alpìna* and *V. Helvética* grow well in pots as alpines. They are all increased by dividing the plants at the root, this should be done three times in the course of the summer, for when they become large and matted they are apt to be destroyed by a kind of green insect.

VIII. LY'CHNIS (from λυχνος, *lychnos,* a link or lamp ; probably in allusion to the brilliancy of the flowers of most of the species.) Lin. gen. no. 231. D. C. fl. fr. 4. p. 761.

Lin. syst. *Decándria, Pentagýnia.* Calyx cylindrical, clavated, 5-toothed, naked. Petals 5, unguiculate, crowned with scales at the throat. Stamens 10. Styles 5. Capsule 1-celled. Anthophorum long or short. Smooth, hairy, or woolly herbs, with terminal corymbs of flowers rarely solitary.

1 L. Chalcedo'nica (Lin. spec. 625.) plant smoothish, clammy ; flowers corymbose, in bundles ; calyx cylindrical, clavated, ribbed ; petals 2-lobed ; anthophorum long ; leaves lanceolate, rather cordate at the base, and rather pilose, clasping the stem. ♃. H. Native of Siberia about Barnaoul and in Japan. Curt. bot. mag. 257.—Clus. hist. 1. p. 192. f. 1. Flowers either scarlet, rose-coloured, or white.

Var. β, flòre-plèno ; flowers double, scarlet. Double scarlet Lychnis.

Var. γ, albiflòra ; flowers single, white. White Lychnis.

Var. δ, álbo-plèna ; flowers double, white. Double White Lychnis.

This most shewy plant is called *Scarlet Lychnis* in England. *Croix de Malthe* in France and Portugal ; *Croce de Cavaliere* in Italy ; *Croix de Jerusalem* in Spain.

Chalcedonian or Scarlet Lychnis. Fl. June, July. Clt. 1596. Pl. 1½ to 3 feet.

2 L. Flos-jo'vis (Lin. spec. 625.) plant white from tomentum ; flowers in umbellate heads ; calyx cylindrical, clavated, ribbed ; petals 2-lobed ; anthophorum short, thick ; leaves lanceolate, clasping the stem, silky-tomentose. ♃. H. Native of Switzerland and Piedmont on dry rocks. Curt. bot. mag. 390.—Mor. hist. 2. p. 540. sect. 5. t. 36. f. 2. Peduncles short, rather branched. Flowers purple or scarlet.

Var. β, ramòsa (Ser. mss. in D. C. prod. 1. p. 385.) flowers in panicled corymbs. ♃. H. Native of Savoy on mount Breson. Flowers red.

Flower of Jove or Umbellate Lychnis. Fl. July. Clt. 1726. Pl. 1½ foot.

3 L. grandiflo'ra (Jacq. coll. 1. p. 149. pl. rar. t. 84.) plant glabrous ; flowers solitary or tern, terminal and axillary ; calyx terete, clavated, ribbed ; petals lacerated ; anthophorum very long ; leaves ovate, almost sessile. ♃. G. Native of China and Japan. Lýchnis coronàta, Thunb. jap. 187. Delaun. herb. amat. t. 25. Curt. bot. mag. 223. Flowers large, beautiful scarlet, pale beneath.

Var. β, tetrapétala (Ser. mss. in D. C. prod. 1. p. 386.) calyx 4-toothed. Petals 4.

Great-flowered Lychnis. Fl. June, Sept. Clt. 1774. Pl. 1 to 1½ foot.

4 L. fu'lgens (Fisch. in Sims, bot. mag. t. 2104.) plant hairy ; flowers in fastigiate corymbs ; calyx terete, clavated, woolly ; petals 4-cleft, outer segments awl-shaped ; anthophorum short ; leaves ovate, hairy. ♃. H. Native of Siberia. Ker, bot. reg. 478. Rchb. icon. t. 5. Flowers large, beautiful, of a vermilion colour.

Fulgent Lychnis. Fl. June, July. Clt. 1819. Pl. 1 to 2 foot.

5 L. cœ'li-ro'sa (Desrouss. in Lam. dict. 3. p. 644.) plant glabrous ; stem dichotomously panicled, erect ; flowers solitary, terminal ; calyx clavated, with 10 ribs ; lobes very acute ; petals lobed ; leaves linear, acute ; anthophorum long. ⊙. H. Native of Sicily, Barbary, and the Levant, in corn-fields, &c. Agrostémma cœ'li-ròsa, Lin. spec. 624. Curt. bot. mag. 295.—Moris, hist. sect. 5. t. 2. f. 32. Flowers flesh-coloured.

Var. α, pusílla (Poir. suppl. 3. p. 537.) stem much branched at the base ; leaves linear, acute, almost glabrous. ⊙. H. Native of Spain by the sea shore.

Var. β, læ'vis (Poir. l. c.) stem angular, erect ; leaves smooth. ⊙. H.

Var. γ, áspera (Poir. l. c.) stem almost round ; leaves narrow, rough ; angles of the calyx rough, serrulated. ⊙. H.

Var. δ, diffùsa (D. C. cat. hort. monsp. p. 122.) stem flexuous, decumbent. ⊙. H.

Rose of heaven or smooth Lychnis. Fl. July, Aug. Clt. 1713. Pl. ½ to 1 foot.

Cult. All the species of this genus are deserving of cultivation for the brilliancy of their blossoms. The *Lýchnis Chalcedónica* or *scarlet lychnis,* is an old and much esteemed border-flower, the double varieties of which require some care to prevent them from returning to a single state, and to propagate them by cuttings. *L. fúlgens* and *grandiflòra* are truly elegant plants, these may be also increased by cuttings. They all thrive best in light rich loamy soil, but they must often be taken up and divided or they dwindle away ; the best time to do this is early in spring. *L. grandiflòra* will thrive well and flower

abundantly if planted out in the open border in spring; but it requires to be taken up in the autumn and potted, or the frost will kill it. All the species may be reared by cuttings, planted under a hand-glass, or by seeds, which generally ripen in abundance. The *L. cœli-rosa* is an elegant hardy annual plant, the seeds of which only require to be sown in the open border in spring.

IX. AGROSTE'MMA (from *αγρος*, *agros*, a field, and *στεμμα*, *stemma*, a crown; alluding to the beauty of the flowers, which were formerly made into crowns or garlands). Lin. gen. no. 231.

Lin. syst. *Decándria*, *Pentagýnia*. Calyx egg-shaped or campanulate, with 5 short teeth. Petals 5, unguiculate, crowned. Stamens 10. Styles 5. Capsule 1-celled. Anthophorum very short, or wanting. Evergreen plants with broadish leaves and 1-flowered peduncles.

1 A. ape'tala (Lin. spec. 626. under *Lýchnis*,) stem straight, 1-flowered; flower nodding; calyx inflated, bladdery, striated, hairy; petals shorter than the calyx; anthophorum very short; leaves linear, lower ones spatulate. ♃. H. Native of the alps of Lapland and Siberia. Lin. fl. lap. t. 12. f. 1. There are numerous varieties of this plant, but probably as many distinct species.

Var. α, hortènsis (Cham. in Schlecht. Linnæa. 1. p. 43.) stem simple, 2 feet high, 1-flowered, pubescent; flower nodding.

Var. β, pauciflòra (D. C. prod. 1. p. 386.) stem bearing 1-2 or 3 flowers; petals hardly longer than the calyx. L. uniflòra and pauciflòra, Fisch. in litt. L. brachypétala, Cat. hort. berl. ex Horn. hort. hafn. suppl. p. 51. Petals white.

Var. γ, gentianoìdes (Cham. l. c.) stem di-trichotomous, 8 inches high, smooth, one of the stems bearing 7 flowers the other 4 flowers. Native of Eschscholtz Bay.

Var. δ, genuìna (Cham. l. c.) pubescent, but when in fruit smooth, or a little pubescent. ♃. H. Native of Europe.

Var. ε, móllis (Cham. l. c.) plant densely tufted, 9 inches long and trailing, glaucous, and of a more soft habit than the other varieties; calyx more inflated; young leaves ciliated, but smooth in other respects. Native of?

Var. ζ, macrocéphala (Cham. l. c. p. 44.) root woody, with numerous stems rising from it, forming a dense tuft; leaves narrower than in the preceding, pubescent; stems 3-4 inches high; flowers deep red. Native of the island of St. Lawrence.

Two species are described by Ledebour in the Petersburg Transactions. *L. pauciflòra* and *uniflòra*, which do not appear to differ from some of the above varieties.

Apetalous Rose-campion. Fl. June, Jul. Clt. 1810; *β* 1817. Pl. ½ to 1½ foot.

2 A. involucra'ta; plant smooth at the base and pubescent at the apex; radical leaves linear; stems filiform, 1-flowered; with some narrow elongated leaves in the middle and some smaller ones approximating the flower in the form of an involucre; petals longer than the calyx; calyx bladdery. ♃. H. Native of? Lýchnis brachypétala, var. involucràta, Cham. l. c.

Involucrate Rose-campion. Pl. ½ foot.

3 A. variega'ta (Desf. cor. Tourn. 74. t. 56. under *Lýchnis*,) plant glabrous; flowers terminal; calyx inflated; petals emarginate, variegated; stamens protruding; leaves roundish, fleshy, glaucous; footstalks connate at the base. ♃. H. Native on Mount Ida. Flowers variegated.

Variegated-flowered Rose-campion. Pl. ½ foot.

4 L. sylve'stris (Hop. cent. exs. 3. no. 33. D. C. fl. fr. 4. p. 763. under *Lýchnis*,) hairy and viscid; flowers dichotomously-panicled, generally dioecious; petals cloven; lobes narrow, diverging; capsules roundish, with recurved teeth; leaves ovate or lanceolate. ♃. H. Native almost throughout the whole of Europe in humid shady places. In Britain in moist shady places and under hedges, frequent. L. diúrna, Sibth. oxon. 145. L. dioíca *α*, Lin. spec. 626. L. dioíca flòre-rùbro, Smith, engl. bot. 1579. Curt. lond. fasc. 2. t. 32. Flower scentless, rose-coloured or purple. Petals crowned with 4 teeth. Calyx inflated.

Var. β, flòre-plèno; flowers double, red. ♃. H. Cultivated in gardens, where it is called *Bachelors' buttons*.

Var. γ, pygmæ'a (Ser. mss. in D. C. prod. 1. p. 386.) small; leaves rather imbricated; stems bearing only 1 or 2 flowers. ♃. H. Native on Mount Margazola. Flowers red.

Wild Red-campion. Fl. May, June. Britain. Pl. *α* 1 to 2 feet; *β* 1 and *γ* ½ foot.

5 L. dioíca (Lin. spec. 626. var. *β*. D. C. fl. fr. 4. p. 762. under *Lýchnis*,) hairy and viscid; flowers dichotomously-panicled, dioecious; petals cloven; lobes broad, approximating; capsules conical, with erect teeth; leaves ovate. ♃. H. Native throughout the whole of Europe in fields, hedges, and by way-sides; plentiful in Britain. L. vespertìna, Sibth. oxon. 146. L. álba, Mill. dict. no. 4. L. dioíca flòre-álbo. Smith, engl. bot. t. 1580. Fl. dan. t. 792. Flowers white, sweet-scented in the evening. Petals crowned with 4 teeth. Calyx inflated.

Var. β, múltiplex (D. C. prod. 1. p. 386.) flowers white, double, sweet-scented in the evening. ♃. H. Cultivated in gardens, but rare.

Var. γ, ròsea; flowers blush-coloured, often with stamens and pistils together. Bearing white and red flowers on the same plant when transplanted. ♃. H. Native of Britain in hedges and fields, but rare.

Var. δ, viridiflòra (Ser. mss. in D. C. prod. 1. p. 386.) flowers double, with green petals.

Dioecious Rose-campion. Fl. June, Sept. Brit. Pl. 2 to 3 feet.

6 A. declìnis (Lag. gen, et spec. 15. under *Lýchnis*,) plant pilose; stems tufted, dichotomous, leafy; flowers dioecious, on long pedicels, terminal and axillary; calyx terete, striped; fructiferous ones rather globose, teeth small; petals emarginate; stamens not protruding; leaves and bracteas ovate-lanceolate; anthophorum none. ♃. H. Native of Spain in the province of Valentia. Agrostémma dioíca, L. Duf. in litt. Flowers white or red.

Declining Rose-campion. Fl. June, July. Pl. 1 to 1½ foot.

7 A. læ'ta (Ait. hort. kew. 2. p. 118. ed. 2. vol. 3. p. 134. under *Lýchnis*,) flowers solitary; calyxes with 10 ribs; petals bifid; leaves linear-lanceolate, rather ciliated. ⊙. H. Native of Portugal in bogs and moist meadows, particularly about Coimbra. L. palústris, Brot. fl. lus. 2. p. 221. phyt. lus. fasc. 1. A pretty little plant with rose-coloured flowers.

Joyful Rose-campion. Fl. July. Clt. 1778. Pl. ¼ to ½ ft.

8 A. Córsica (Lois. not. 73. under *Lýchnis*,) stem erectish, branched, somewhat dichotomous; peduncles elongated, 1-flowered; petals oblong, somewhat emarginated; leaves linear-lanceolate, glabrous. ♃. H. Native of Corsica. Perhaps distinct from *L. læ'ta*. A beautiful little plant with red flowers.

Corsican Rose-campion. Fl. Ju. Jul. Clt. 1818. Pl. ½ ft.

9 A. niva'lis (Kit. in litt. under *Lýchnis*. Spreng. syst. 2. p. 421.) smooth; radical leaves oblong, ciliated, tapering into the petiole; scape 1-flowered; bracteas linear, elongated, ciliated; calyx campanulate, equal, obtusely-toothed; petals large, lobed, crowned in the throat. ♃. H. Native of the Carpathian mountains.

Snow Rose-campion. Pl. ½ foot.

10 A. Sibi'rica (Lin. spec. 626. under *Lýchnis*,) stems tufted; flowers in dichotomous bundles and solitary in the forks of the stem on long stalks; calyx campanulately-globose; lobes very short, obtuse; petals bifid; anthophorum none; leaves linear, and are as well as stems hairy. ♃. H. Native of Siberia. Stature of *Silène rupéstris*. Flowers pink.

Siberian Rose-campion. Fl. June, July. Clt. 1817. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

11 A. Pyrena'ica (Berg. fl. bass. pyren. 2. p. 264. under *Lýchnis*,) glabrous; stems tufted, diffuse; flowers in dichotomous bundles, with a single flower in each fork, which stands on a long peduncle; calyx campanulate, lobes short; petals rather emarginate, appendiculate; leaves leathery, radical ones spatulate, on long footstalks, cauline ones cordate, sessile. ♃. H. Native of the Pyrenees on rocks. D. C. icon. fl. gall. rar. fasc. 2. ined. L. nummulària, Lapeyr. abr. p. 263. Flowers red or white.

Pyrenean Rose-campion. Fl. June, July. Clt. 1819. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

12 A. triflòra (Sommerfelt, in mag. natur. ann. 1824. cah. 1. p. 151. under *Lýchnis*,) stem 3-flowered; peduncles and calyx clothed with viscid down; stem erect, very short, pubescent; leaves densely-pubescent, radical ones crowded, lanceolate, acutish, entire, ciliated, with a pair of cauline ones hardly an inch from the root; bracteas 6, opposite by twos, approximating the flowers in the manner of an involucrum; calyx ventricose; petals emarginate, longer than the calyx. ♃. H. Native of Greenland. Flowers erect, white, 2 lateral ones on short pedicels, middle one on a long one. Stigmas pubescent.

Three-flowered Rose-campion. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

13 A. pu'lchra; herbaceous, canescent, viscidly-pubescent; stem erect, few-flowered; leaves lanceolate, acute, lower ones tapering into the petiole, upper ones sessile, half-stem-clasping; flowers large, on long peduncles, like those of *A. sylvéstris*, p. 416. no. 4. but nearly twice the size, and red; calyx tubular, 10 lines long, 10-striped, 5-toothed; teeth broad, with pellucid margins, and with a green nerve running through the middle; petals quadrifid, lateral segments smallest. ♃. F. Native of Mexico at the bottom of mount Oriziba. Lýchnis púlchra, Schlecht. et Cham. in Linnæa 5. p. 334.

Fair Rose-campion. Pl. 1 to 2 feet.

14 A. fimbria'ta; stem erect, nearly simple, panicled at the top, pubescent; leaves ovate, acuminated, 3-5-nerved; calyx inflated; petals fringed. ♃. H. Native of Kamoon in the East Indies. Lýchnis fimbriàta, Wall. mss. Flowers white? Like *Silène inflàta*. This plant comes near to *A. apétala*, p. 416. no. 1.

Fringed-petalled Rose-campion. Pl. 1 to 2 feet.

15 A. infla'ta; erect, pubescent; leaves ovate, acute, lower ones stalked, upper ones sessile; stem 1-flowered; flower nodding; calyx much inflated, not much shorter than the petals. ♃. H. Native of Kamoon in the East Indies. Lýchnis inflàta, Wall. mss. This plant comes near to *A. sylvéstris*, p. 416. no. 4.

Inflated-calyxed Rose-campion. Pl. 1 foot.

16 A. flós-cu'culi (Lin. under *Lýchnis*,) stems ascending; smoothish; flowers in dichotomous bundles; calyx campanulate, with 10 ribs; petals torn, appendiculate. ♃. H. Native of Europe in moist meadows and bogs, plentiful in Britain. Lam. ill. t. 391. Smith, engl. bot. 573. Curt. lond. fasc. 1. t. 33. Oed. fl. dan. t. 590. Flowers scentless, rose-coloured.

Var. β, albiflòra; flowers white.

Var. γ, flòre-plèno; flowers double, rose-coloured. Cultivated sometimes in gardens.

Cuckoo-flower or Ragged-robin. Fl. June. Britain. Pl. 1 to $1\frac{1}{2}$ foot.

17 A. corona'ria (Lin. spec. 625.) plant woolly; stems dichotomous; peduncles elongated, 1-flowered; calyx somewhat campanulate, ribbed; petals emarginate, crowned, serrated; leaves lanceolate, very broad, leathery. ♃ H. Native of Italy, Switzerland, and Tauria, by the sides of woods on the Alps. Curt. bot. mag. t. 24. Lýchnis coronària, Lam. dict. 3. p. 643.—Knor. del. 1. t. R. 20. Flowers white, with the middle red.

Var. β, rùbra; flowers single, red. In gardens.

Var. γ, álba; flowers single, white. In gardens.

Var. δ, plèna; flowers double, red. In gardens.

Crowned or Common Rose-campion. Fl. July, Sept. Clt. 1596. Pl. 1 to 2 feet.

A species not sufficiently known.

18 A. Lusita'nica (Mill. dict. no. 8. under *Lýchnis*,) stem erect; calyx striated, acute; petals dissected. ♃. H. Native of Portugal.

Portugal Rose-campion. Pl. 1 foot.

Cult. Some of the species of *Agrostémma* are very ornamental, and well adapted for flower-borders. They will all grow freely in any common garden-soil. The perennial species are either increased by dividing at the root or by seed. The seeds of the annual species require only to be sown in the open border where they are intended to remain.

X. GITHA'GO (from *gith* or *git*, a black aromatic seed, which was employed in the kitchens of the Romans. The seeds of the *Nigélla satìva*, which those of *Githàgo* much resemble. *Ago* in botany, when it terminates a word, usually signifies resemblance with the word that precedes it, as *gith* and *ago*, resembling *gith*). Desf. cat. 159. Agrostémma, spec. Lin. Lýchnis, spec. Lam.

Lin. syst. *Decándria, Pentagýnia.* Calyx campanulate, coriaceous, with 5 long, leafy segments. Petals 5, unguiculate, undivided, naked. Stamens 10. Styles 5. Capsule 1-celled, 5-valved. Anthophorum wanting. Upright annual plants, with largish red or white flowers, and long leafy calycine teeth.

1 G. se'getum (Desf. cat. p. 159.) plant hairy; stem dichotomous; flowers on long stalks; leaves linear; calyx equal in length to the corolla. ☉. H. Native among corn in all parts of Europe, and North America around Quebec; plentiful in Britain. Agrostémma Githàgo, Lin. spec. 624. Smith, engl. bot. 741. Curt. lond. fasc. 3. t. 27. Martyn, rust. t. 105. Fl. dan. 576. Drevers bilderb. t. 22. Lýchnis Githàgo, Lam. dict. 3. p. 643.—Fusch. hist. 127. icone. Flowers purple, with bluish streaks. This is a very troublesome weed in cornfields: it should be eradicated by hand before flowering.

Corn-cockle. Fl. June, July. Britain. Pl. 1 to 3 feet.

2 G. Nicæe'nsis; plant hairy; stem dichotomous; flowers on long peduncles; calyx longer than the corolla. ☉. H. Native in fields about Nice. Lýchnis Nicæénsis, Willd. spec. 2. p. 805. Agrostémma Nicæénsis, Pers. ench. 1. p. 519. Flowers white, sometimes streaked with red.

Nice Corn-cockle. Fl. Ju. Jul. Clt. 1794. Pl. 1 to 2 ft.

Cult. The seeds of these plants only require to be sown in the open border in spring in patches. The plants are very elegant when in flower.

XI. VELE'ZIA (in honour of Franc. Velez, a Spaniard, author of a small book on *Cúbebes*). Lin. gen. no. 448. Gært. fruct. 2. t. 129. f. 12. D. C. prod. 1. p. 387.

Lin. syst. *Decándria, Digýnia.* Calyx tubular (f. 79. *b.*), 5-toothed. Petals 5, short, with filiform claws (f. 79. *d.*), bearded in the throat (f. 79. *c.*), and with an emarginate border. Stamens 10 (f. 79. *e.*). Styles 2 (f. 79. *g.*). Capsules 1-celled, long, cylindrical (f. 79. *i.*). Seed imbricate. Slender prostrate herbs with narrow leaves and long calyxes, like the pink.

1 V. rí'gida (Lin. spec. 474.) calyx filiform, pubescent; petals bifid. ⊙. H. Native of the South of France and in many other parts of the south of Europe and north of Africa, also the Grecian islands, in corn-fields. Smith, fl. græc. 390.—Bocc. mus. 2. p. 50. t. 45.—Buxb. cent. 2. p. 41. t. 47.—J. Bauh. hist. 3. p. 352. icon. Corolla small, with a rose-coloured border. Stem much branched, prostrate.

FIG. 79.

Rigid Velezia. Fl. July. Clt. 1683. Pl. prostrate.

2 V. quadridenta'ta (Sibth. and Smith. fl. græc. t. 391.) calyx long, clavated, smooth; petals 4-toothed. ⊙. H. Native of Asia Minor. V. clavàta, D'Urv. enum. pl. archip. 28. no. 234. Petals rose-coloured.

Four-toothed-petalled Velezia. Fl. Ju. Jul. Pl. ¼ to ½ foot.

Cult. Beautiful little plants, only requiring to be sown in the open border in spring, where they will flower and seed freely. A dry sandy soil suits them best.

XII. DRY'PIS (from δρυπτω, *drypto*, to tear; on account of the leaves being armed with stiff spines). Lin. gen. no. 519. Gært. fruct. 2. t. 28. f. 12. D. C. prod. 1. p. 388.

Lin. syst. *Pentándria, Trigýnia.* Calyx tubular, 5-toothed. Petals 5, unguiculate, with a 2-parted limb, and furnished each with a bifid appendage in the throat. Stamens 5. Styles 3. Capsules 1-celled, cut, round, 1-seeded from abortion. An evergreen furze-like plant, with fastigiate corymbs of small, pale-blue flowers.

1 D. spinòsa (Lin. spec. 390.) ♄. H. Native of Mauritania, Italy, and Istria. Jacq. vind. t. 49. Sims, bot. mag. 2216.—Moris. hist. 3. p. 161. sect. 7. t. 32. f. 8.—Lob. icon. 789. Tabern. icon. 144. Stems at first procumbent, 4-sided, flowering stems erect. Leaves stiff, awl-shaped, somewhat trigonal, mucronated. Bracteas with 3 teeth on each side. Flowers corymbose, pale-blue. A beautiful plant, when in flower.

Spinose Drypis. Fl. June, Aug. Clt. 1775. Shrub ½ foot.

Cult. This pretty little plant is admirably adapted for ornamenting rock-work; in this situation it becomes suffruticose, and produces an innumerable quantity of flowers. It may be either increased by cuttings planted in sand under a hand-glass, or by seeds, which should be sown in a pot filled with an equal mixture of loam, sand, and peat, and when the plants become of sufficient size they should be separated and planted on the top of rock-work, taking care to water them until they have emitted fresh fibres.

XIII. VIVIA'NIA (in honour of Dom. Viviani, M.D. a professor and botanist of Genoa, author of Annali di Botanica, 2 vols. 8vo. Genoa. 1802 and 1804, &c.). Cav. anal. de cienc. 7. p. 212. Macræ'a, Lindl. in Brande's journ. scienc. for Jan. April 1828, vol. 35. p. 204.

Lin. syst. *Decándria, Trigýnia.* Calyx campanulate, 5-toothed. Petals 5, inserted in a short torus, unguiculate, permanent, twisted in æstivation. Stamens 10, inserted on the top of the torus. Style short, crowned by 3 linear stigmas, with reflexed margins. Capsule 3-celled, 3-valved. Valves separating from the axis even to the placenta, as in *Linèæ*. Dry shrubs, natives of Chili, with opposite exstipulate leaves, covered with simple down. Flowers disposed in terminal, corymbose panicles, they are either white or red.

1 V. grandiflòra; leaves grey and glandular beneath with prominent veins; branches pubescent; peduncles shorter than the leaves. ♄. G. Native of Chili near Santiago. Macræ'a grandiflòra, Lindl. l. c. Hook. bot. misc. pt. 2. p. 175. Flowers white or red.

Great-flowered Viviania. Shrub 1 to 2 feet.

2 V. parviflòra; leaves white and glandular beneath, with obscure veins; branches cobwebbed; peduncles shorter than the leaves. ♄. G. Native of Chili with the last. Macræ'a parviflòra. Lindl. l. c. Hook, bot. misc. pt. 2. p. 176. Flowers white.

Small-flowered Viviania. Shrub 1 to 2 feet.

3 V. marifo'lia (Cav. anal. de cien. 7. p. 212. t. 49.) leaves distant, white, and glandless beneath; branches pubescent; peduncles elongated. ♄. G. Native of Chili on the Andes at the pass of Cumbre. Macræ'a ròsea, Lindl. l. c. Hook, bot. misc. pt. 2. p. 176. t. 50. Flowers rose-coloured.

Marum-leaved Viviania. Fl. Nov. Shrub 1 to 2 feet.

4 V. crena'ta; leaves deeply-crenate, with reflexed margins, whitish-tomentose beneath; flowers sub-corymbose; petals white. ♄. G. Native of Chili on the Andes near La Guardia, at the height of 5000 feet. Macræ'a crenàta, Hook. bot. misc. 2. p. 177.

Crenate-leaved Viviania. Pl. 1 foot.

Cult. The species of this genus are very ornamental, but none of them have been introduced to the gardens. A mixture of loam and sand will no doubt suit them, and the plants may be either increased by young cuttings under a hand-glass, or by seeds.

Tribe II. Alsi'neæ (plants agreeing with *Alsìne* in having the calyx cleft to the base) D. C. fl. fr. 4. p. 166. prod. 1. p. 388. Sepals of calyx 4 or 5, free, or hardly connected at the base.

XIV.? ORTE'GIA (in honour of Casimir Gomez de Ortega, a Spanish botanist, once professor of botany at Madrid). Lin. gen. no. 33. Gært. fruct. 2. t. 129. f. 8. D. C. prod. 1. p. 388.

Lin. syst. *Triándria, Monogýnia.* Calyx 5-parted. Corolla wanting. Stamens 3; anthers cordate. Style 1. Stigma capitate. Capsules 1-celled, 3-valved. Seeds fixed to the bottom of the capsule.—The leaves are furnished with a small black gland on each side at the base. Inconspicuous, weed-like plants.

1 O. Hispa'nica (Lin. spec. 49.) stems dichotomous, peduncles short; flowers dichotomously-corymbose. ♃. H. Native of Spain in the provinces of Castile and Salamanca. Flowers greenish-grey.

Spanish Ortegia. Fl. June, July. Clt. 1768. Pl. ½ foot.

2 O. dicho'toma (Lin. mant. 174.) stems dichotomous; peduncles elongated; flowers dichotomously-panicled. ♃. H. Native of Piedmont and Spain. O. Hispánica, Cav. icon. 1. p. 47. All. ped. str. t. 4. f. 1. O. dichótoma of D. C. fl. fr. 4. no. 4376 is perhaps a distinct species. Flowers greenish.

Dichotomous-panicled Ortegia. Fl. Aug. Sept. Clt. 1820. Pl. 1 foot.

Cult. *Ortègia* is a genus of insignificant looking herbaceous plants, consequently not worth cultivating, except in botanical gardens. They should be grown in pots, well drained with potsherds, in a mixture of sand, loam, and peat, or on rock-work; they are easily increased by seeds, and cuttings will root freely under a hand-glass.

XV. GOU'FFEIA (in honour of Gouffé de la Cour, who wrote a memoir on the exotic vegetables naturalized at Marseilles in 1818). Robill. et Cast. diss. ined. D. C. fl. fr. 5. p. 609. prod. 1. p. 388.

Lin. syst. *Decándria, Digýnia.* Calyx 5-parted, spreading. Petals 5, entire. Stamens 10. Style 2. Capsules globose, 1-celled, 2-valved, 1-2-seeded. An inelegant herb like *Arenària tenuifòlia* or *Buffònia tenuifòlia.*

1 G. arenarioi'des (Rob. et Cast. l. c. &c.) branches divaricating; flowers somewhat corymbose; leaves linear, short, deflexed. ⊙. H. Native about Marseilles. Flowers white.

Sand-wort-like Gouffeia. Fl. June, July. Pl. $\frac{1}{2}$ foot.

Cult. Goúffeia only requires to be sown on rock-work, or in the open border, where it will flower and ripen seed freely, but being a weed-looking plant it will be scarcely worth cultivating, except in botanical gardens.

XVI. BUFFO'NIA (in honor of Count de Buffon, the celebrated French naturalist). Sauv. meth. fol. 141. Lin. gen. no. 225. Gært. fruct. 2. p. 129. f. 1. D. C. prod. 1. p. 388.

Lin. syst. *Tetrándria, Digýnia.* Calyx of 4 sepals. Petals 4, entire. Stamens 4. Styles 2. Capsules compressed, 1-celled, 2-valved, 2-seeded. Insignificant slender herbs, with awl-shaped leaves, like some species of *Arenària.*

1 B. a'nnua (D. C. fl. fr. 4. p. 768.) stem loosely panicled from the base; branches divaricating, short, firm; stripes on calyx straight, parallel; capsules scarcely equal in length to the calyx; leaves awl-shaped, dilated at the base. ⊙. H. Native of the south of France on rocks; said to have been found in England on the sea-coast about Boston in Lincolnshire. B. tenuifòlia, Lin. spec. 179. Lam. ill. no. 1710. t. 87. f. 1. Smith, engl. bot. t. 1313.—Pluk. phyt. t. 75. f. 3.—Magn. hort. monsp. 97. t. 15. A slender plant with small white petals.

Annual Buffonia. Fl. June, July. England? Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

2 B. Oliveria'na (Ser. mss. in D. C. prod. 1. p. 388.) stem branching at the top; branches filiform, elongated; stripes on the calyx straight, parallel; capsules almost sessile, shorter than the calyx; leaves very short, form of scales. ⊙? H. Native about Teheran in Persia. A slender plant, with small, white petals.

Olivier's Buffonia. Fl. June, July. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

3 B. macroca'rpa (Ser. mss. in D. C. prod. 1. p. 388.) stem very much branched, dichotomous; branches filiform, rigid, very long, almost naked, and divaricating; sepals ovate, obtuse; stripes on calyx straight, parallel; capsules on long stalks, large, much longer than the calyx; seeds somewhat globose, compressed, echinated on the margins. ♃. F. Native of Persia from Teheran to Ispahan. Flowers small, white.

Long-fruited Buffonia. Fl. June, July. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

4 B. pere'nnis (Pour. act. toul. 3. p. 319.) stem branching at the top; branches filiform, elongated; stripes on calyx arched, converging. ♃. H. Native of France and Vallais. Lam. ill. no. 1711. t. 87. f. 2. Flowers small, white.

Perennial Buffonia. Fl. June, Jul. Clt. 1817. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

Cult. Both the perennial and annual species of this genus can only be encreased by seeds; they only require to be sown in the open border or on rock-work, but being weedy looking plants, they are hardly worth cultivating, except in botanical gardens or in those of the curious. A dry sandy soil suits them best. A plant or two of the perennial species should be kept in pots, so that they may be sheltered by a frame during winter, as they are otherwise apt to damp off in that season.

XVII. SAGI'NA (*sagina*, in Latin, signifies fatness; according to Linnæus it is so called for its qualities in fattening sheep). Lin. gen. no. 236. Gært. fr. 2. p. 129. f. 10. D. C. prod. 1. p. 389.

Lin. syst. *Tetra-Pentándria, Tetragýnia.* Calyx 4-5-parted. Petals 4-5, or wanting. Stamens 4-5. Styles 4. Capsules 4-5-valved, 1-celled, many-seeded. Small insignificant herbs.

1 S. procu'mbens (Lin. spec. 185.) plant glabrous; branches procumbent; leaves linear, mucronated; fruit-bearing peduncles, ascending; petals short, obtuse; segments of calyx rounded. ⊙. H. Native on sandy ground, or the walks and beds of neglected gardens, as well as on shady walls and gravelly banks, every where throughout Europe; on the north-west coast of America, and on the banks of the Columbia. In Britain plentiful. Smith, engl. bot. t. 88. Curt. lond. fasc. 3. t. 12. Plant spreading on the ground. Flowers drooping, with white roundish petals.

Var. β, plèna; a pretty variety, with rose-like white double flowers, of from 27 to 32 petals. This plant was formerly cultivated in some curious gardens, but is now, we believe, altogether lost. ♃. H. Native on a green near Beaumaris, in Wales. Rev. H. Davis, July, 1817.

Procumbent Pearlwort. Fl. May, Aug. Britain. Pl. procumbent.

2 S. filifo'rmis (Pourr. chlor. hisp. no. 593.) stems erect, much branched, jointed; leaves linear, glabrous; peduncles axillary and terminal, dichotomous. ⊙. H. Native of the Pyrenees, growing mixed with *S. procúmbens.* Rœm. et Schult. syst. 3. p. 499. Petals white.

Filiform Pearlwort. Fl. May, Aug. Clt. 1824. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ foot.

3 S. mari'tima (G. Don, herb. brit. 155.) plant smooth; branches erectish; leaves lanceolate, obtuse, very short; fruit-bearing peduncles ascending; petals none; segments of calyx ovate, obtuse. ⊙. H. Native of Britain: on the coast near Aberdeen, and on the summit of Ben Nevis; at Bally Castle, near the Giant's Causeway, Ireland; on Hartle-pier, Durham; in salt marshes at Southwold, Suffolk, abundantly. Smith, engl. bot. t. 2195. Curt. fl. lond. t. 115. Petals abortive or entirely wanting. Stamens sometimes 8.

Sea-side Pearlwort. Fl. May, Aug. Britain. Pl. 2 to 3 inches.

4 S. stri'cta (Fries. novit. fl. suec. 3. p. 122.) plant very glabrous; stems and peduncles straight; leaves rather cylindrical, not mucronated; lobes of calyx lanceolate, acute (obtuse according to Horn. in hort. hafn. suppl. p. 122.) ⊙. H. Native of Denmark and Sweden at Cimbrishavn, by the sea-side. Petals white.

Straight Pearlwort. Fl. May, Aug. Clt. 1823. Pl. 2 or 3 inches.

5 S. cilia'ta (Fries. in Billb. svensk. bot. ex Spreng. neue. entd. 3. p. 220.) stem diffuse; leaves awl-shaped, spreading, ciliated; segment of calyx acuminated. ⊙? H. Native of Sweden. Petals white.

Ciliated-leaved Pearlwort. Fl. May, Aug. Clt.? Pl. 1 to 2 inches.

6 S. ape'tala (Lin. mant. p. 559.) plant hispid, pubescent; branches erectish, dichotomous; leaves linear, fringed, mucronated; fruit-bearing peduncles ascending; petals very short, roundish; segments of calyx lanceolate, bluntish. ⊙. H. Native on dry sandy barren grounds on walls and waste places; very common in Britain, Italy, and Germany. Smith, engl. bot. t. 881. Curt. lond. fasc. 5. t. 14. Arduin. specel. 2. p. 22. t. 8. f. 1. The petals when present are white, not half the length of the calyx.

Var. β, agglomeràta (D. C. prod. 1. p. 389.) flowers sessile and stalked, glomerated.

Apetalous Pearlwort. Fl. May, June. Britain. Pl. 1 or 2 inches.

7 S. Quite'nsis (H. B. et Kunth, gen. et spec. amer. 6. p. 19.) stems filiform, procumbent? leaves rather falcate; peduncles axillary, 1-flowered, bearing 4 bracteas above the middle; fruit-bearing peduncles straight, elongated; flowers apetalous, somewhat drooping. ⊙. H. Native of South America on the sandy banks of Rio Blanco at the height of 4800 feet. Valves of capsule revolute.

Quito Pearlwort. Fl. May, Aug. Pl. trailing.

8 S. fasciula'ta (Poir. dict. 6. p. 390.) stems creeping, rooting, jointed; branches somewhat erect; leaves secund in bundles; peduncles axillary, 1-flowered. ♃. H. Native about Algiers. Very like *S. procúmbens*. Calyx glabrous, with short oval, obtuse, spreading lobes, which are reflexed after flowering. Petals white.

Bundle-leaved Pearlwort. Fl. May, Aug. Pl. 1 to 3 inches.

Cult. None of the species of this genus are worth cultivating except the double-flowering variety of *S. procúmbens* and *S. fasciculàta*: both should be kept in small pots well drained with potsherds, in a mixture of loam, peat, and sand; and the best way of increasing them is by dividing the plants at the roots. The rest of the species are only worth preserving in Botanical gardens; they require no care, but if once introduced to the garden, it will be hereafter quite impossible to extirpate them.

XVIII. MŒ'NCHIA (in honour of Conrad Mœnch, a professor of botany at Marburgh, who wrote several botanical works between the years 1777 and 1802.) Ehrh. beitr. fasc. 2. 177. Pers. ench. 1. p. 153.

Lin. syst. *Tet ándria, Digýnia.* Calyx of 4 sepals. Petals 4. Stamens 4. Capsules membranous, 1-valved, 1-celled, opening at the summit with 8, occasionally, 10 teeth, many-seeded. Seed kidney-shaped. Small plants, with the habit of *S. Cerástium*.

1 M. ere'cta (Smith, engl. fl. 1. p. 241.) glaucous; stems erect, 1-flowered, glabrous; leaves linear, acute; peduncles straight; petals short; sepals lanceolate, concave, acute, with membranous edges. ⊙. H. Native in pastures and heathy ground on a gravelly soil, in most parts of Europe; also in Britain. M. glaúca, Pers. ench. 1. p. 153. M. quaternélla, Ehrh. phyt. 82. Sagìna erécta, Lin. spec. 185. Smith, engl. bot. t. 609. Curt. lond. fasc. 2. t. 12.—Vaill. par. t. 3. f. 2. Petals white.

Upright Mœnchia. Fl. May. Britain. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ foot.

2 M. cerastoìdes (Spreng. syst. 1. p. 497.) green and pilose; stem diffuse, dichotomous, branched; leaves spatulate or obovate, recurved; peduncles axillary, 1-flowered, reflexed after flowering; petals emarginate; sepals lanceolate, acute, with membranous margins. ♃. H. Native of Scotland on rocks about the Firth of Forth, and in many places about Edinburgh. Flowers small, white. Sagìna cerastoìdes, Smith in Lin. trans. vol. 2. p. 343. Cerástium tetrándrum, Curt. lond. fasc. 1. t. 31.

Chickweed-like Mœnchia. Fl. Ju. July. Britain. Pl. trailing.

Cult. Chickweed-looking plants, which may be sown on rock-work, and may be afterwards allowed to scatter their seeds.

XIX. HYMENE'LLA (a diminutive of *υμην, hymen*, a membrane, on account of the thin little petaloid crown at the base of the petals.) Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 389.

Lin. syst. *Tetrándria, Trigýnia.* Calyx 4-parted, spreading, Petals 4, oblong, entire, length of the calyx. Stamens 4, alternating with the petals, connected at the base by an 8-toothed petaloid little crown. Ovary ovate. Styles 3. Capsules 3-celled. An insignificant looking plant, like *Mœhringia*.

1 H. moehringioi'des (Moc. et Sesse, fl. mex. ined. icon. in D. C. prod. 1. p. 390.) ♃. F. Native of Mexico in gardens. P. Carmelitàrum, Sancti Angeli, Buffònia tenuifòlia, Moc. et Sesse, fl. mex. ined. icon. Stems weak; leaves linear, acute, glabrous; pedicels solitary, 1-flowered, axillary; flowers small, white.

Moehringia-like Hymenella. Pl. $\frac{1}{2}$ foot.

Cult. This plant should be kept in pots in a mixture of sand, loam, and peat, and placed in a green-house or frame during winter. It may be either increased by seeds or by dividing the plants at the root, but it is not worth cultivating except in botanical gardens.

XX. MOEHRI'NGIA (in honour of Paul Henry Gerard Moehring, a German physician, author of Hortus Proprius, 1736.) Lin. gen. 264. Gært. fruct. 226. t. 129. f. 11. D. C. prod. 1. p. 390.

Lin. syst. *Octándria, Digýnia.* Calyx 4-parted. Petals 4. Stamens 8. Styles 2. Capsules 4-valved, 1-celled, many-seeded. Pretty alpine plants, with the habit of *Arenària*.

1 M. muscòsa (Lin. spec. p. 515.) leaves linear, connate; segments of calyx flat, lanceolate, acute; flowers axillary, solitary. ♃. H. Native of Europe in humid parts of mountains at the margins of woods. Lam. ill. t. 314. Schkuhr. handb. 1. t. 108. Flowers small, white.

Mossy Moehringia. Fl. June, July. Clt. 1775. Pl. $\frac{1}{4}$ foot.

2 M. sedifòlia (Willd. berl. mag. 1818. p. 101. t. 3. f. 23.) leaves oblong, obtuse, convex on both surfaces, fleshy, somewhat imbricated; flowers terminal, solitary. ♃. H. Native of the Alps of Tenda. M. muscòsa, var. Balb. misc. bot. 20. t. 5. f. 2. M. muscòsa sedoìdes, Pers. ench. 1. p. 438. Flowers like those of *M. muscòsa*, but a little smaller.

Sedum-leaved Moehringia. Fl. Ju. July. Clt. 1823. Pl. $\frac{1}{4}$ ft.

3 S. stri'cta (Sibth. and Smith, fl. græc. t. 362.) leaves strict, scariose, and ciliated at the base, shorter than the joints of the stem. ♃. H. Native of Candia. Flowers small, white.

Strict-leaved Moehringia. Fl. June, July. Pl. $\frac{1}{4}$ foot.

Cult. These pretty little alpine plants are well adapted for rock-work or to be grown in small pots. A mixture of sand, loam, and peat suits those grown in the latter way; and the best method of increasing them is by dividing the plants at the root.

XXI. ELA'TINE (from *ελατη, elate*, a fir in Greek. Its fine leaves have been compared to those of a fir-tree.) Lin. gen. no. 685. Gært. fruct. 2. p. 142. t. 102. f. 2. D. C. prod. 1. p. 390.

Lin. syst. *Tri-Octándria, Tetragýnia.* Calyx 3-5-parted. Petals 3-4, not unguiculate. Stamens equal in number with the petals, and double that number, therefore either 3-4 or 6-8. Styles 4, capitate at the top. Capsules 4-valved, 4-celled, many-seeded. Seeds cylindrical. Small creeping plants, with insignificant flesh-coloured flowers.

1 E. hydro'piper (Lin. spec. 572.) leaves opposite; flowers alternate, stalked, octandrous, 4-petalled. ♃. H. Native in inundated places almost throughout the whole of France. E. hydrópiper var. *α*, Lin. spec. p. 527. D. C. icon. pl. rar. 1. p. 13. t. 43. f. 2.—Vaill. bot. paris, t. 2. f. 2. Flowers rose-coloured.

Water-pepper Waterwort. Fl. July, Aug. Pl. 2 to 3 inches.

2 E. hexa'ndra (D. C. icon. pl. rar. 1. p. 14. t. 43. f. 1.) leaves opposite; flowers alternate, stalked, hexandrous, 3-petalled. ♃. H. Native of inundated places about Paris. E. hydrópiper var. *β*, Lin. spec. 527.—Vaill. Paris, bot. t. 2. f. 1. Tillæ'a hexándra, Lapierre, journ. phys. fl. an. xi. Biròlia paludòsa, Bell. mem. acad. tur. 1808. icone. Flowers rose-coloured.

Hexandrous Waterwort. Fl. July, Aug. Clt.? Pl. 2 inches.

3 E. tripe'tala (Smith, engl. fl. 2. p. 243.) leaves opposite, rough, with minute points; flowers alternate, stalked, octandrous, 3-petalled. ♃. H. Native on the margins of ponds and ditches, in a sandy soil, about the eastern shore of Bomere pool, near Candover, Shropshire, and near Bingfield, Berks. E.

hydrópiper, Smith, engl. bot. t. 955. Petals roundish, slightly pointed, concave, inflexed, reddish or pale flesh-coloured, smaller than the calyx. Anthers yellow.

Three-petalled Waterwort. Fl. July, Aug. England. Pl. 2 or 3 inches.

4 E. tria'ndra (Schkuhr. handb. no. 1023. t. 109. b. f. 2.) leaves opposite; flowers sessile, and opposite, triandrous, 3-petalled. ♃. H. Native of inundated places about Ratisbon. Flowers and seeds rose-coloured.

Triandrous Waterwort. Fl. July, Aug. Pl. 2 or 3 inches.

5 E. alsina'strum (Lin. spec. 527.) leaves in whorls; flowers sessile, and disposed in whorls. ♃. H. Native about Paris and in fountains at Fontainebleau.—Vaill. bot. paris, 1. f. 6. E. verticillàta, Lam. fl. fr. 3. p. 11. D. C. fl. fr. 4. p. 772. Habit of *Hippùris vulgàris*—Pitamópitys, Buxb. act. petrop. t. 1. f. 6.

Chickweed-like Waterwort. Fl. June, Aug. Pl. ¼ foot.

Cult. *Elátine* is a genus of singular water plants. They all grow under water except *E. tripétala*, which grows by the sides of ponds; therefore they should all be planted or sown in ponds except the latter species, which should be planted on the borders of a pond or canal, where they should be allowed to increase themselves. A sandy or gravelly bottom suits them best. Ripe seeds are easily transported in a vegetative state from the places of their natural growth, or plants may be introduced.

XXII. BE'RGIA (in honour of Peter Jonas Bergius, once professor of natural history at Stockholm, who wrote several botanical works between 1757 and 1780, particularly upon mosses and plants of the Cape of Good Hope.) Lin. gen. no. 791. D. C. prod. 1. p. 390.

Lin. syst. *Decándria*, *Pentagýnia*. Calyx 5-parted. Petals 5. Stamens 10. Styles 5, approximate. Capsules 5-valved, 5-celled.

1 B. verticilla'ta (Willd. spec. 2. p. 770.) leaves lanceolate, denticulated at the apex; flowers in whorls, almost sessile, much crowded. ⊙? H. Native of Egypt in rice-fields about Rosetta and Damiata; also in the East Indies, but not at the Cape of Good Hope. B. Capénsis, Lin. mant. 241. Elátine luxúrians, Del. fl. ægypt. p. 13. t. 26. f. 1. Flowers red or whitish.

Whorl-flowered Bergia. Fl. July. Clt. 1820. Pl. 1 foot.

2 B. glomera'ta (Lin. fil. suppl. 243.) leaves ovate, crenulated; flowers glomerate. ⊙? H. Native of the Cape of Good Hope. Thunb. prod. 82. Flowers whitish.

Glomerate-flowered Bergia. Pl. ½ foot.

3 B. re'pens (Blum. bijdr. ex Schlecht. Linnæa, 1. p. 645.) stem branched and creeping; leaves lanceolate, serrated; flowers glomerate, on short peduncles, axillary. ♃? S. Native of Java.

Creeping Bergia. Pl. creeping.

4 B. ammanioi'des (Roth. nov. pl. spec. 219.) stem branched, rough from capitate bristles; leaves elliptical, acute, sharply and deeply serrated, silvery-tomentose on the under surface; flowers axillary, stalked, glomerate, pentandrous. ⊙. S. Native of the East Indies. Corolla white.

Ammania-like Bergia. Fl. July. Pl. ½ foot.

Cult. All the species of this genus are inhabitants of moist places, such as rice-fields, which are irrigated the greater part of the year, consequently they will require to be kept in similar situations in gardens, where they will ripen their seed. None of them are worth cultivating, unless in botanic gardens.

XXIII. MOLLU'GO (the Roman name of what is supposed to be our *Gàlium Mollùgo*, which many of the species of this genus resemble in their whorled leaves and inconspicuous appearance.) Lin. gen. no. 139. Gært. fruct. t. 130. f. 8.

Lin. syst. *Triándria*, *Trigýnia*. Calyx 5-parted. Petals none or very small. Stamens 3. Styles 3. Capsules 3-valved, 5-celled, many-seeded. Leaves in whorls, rarely opposite. Insignificant plants, with 1 or many-flowered peduncles.

* *Peduncles 1-flowered, in whorls.*

1 M. oppositifòlium (Lin. spec. 131.) leaves opposite, lanceolate; branches alternate, dichotomous; peduncles lateral, crowded. ⊙. S. Native of Ceylon.—Pluk. phyt. t. 75. f. 6. Peduncles almost the length of the leaves, in whorls. Flowers white. Plant smooth, diffuse.

Opposite-leaved Mollugo. Fl. July, Aug. Pl. ½ foot.

2 M. hi'rta (Thunb. prod. p. 24. fl. cap. 1. p. 444.) plant decumbent; leaves obovate, villous, 4 in a whorl, stalked; flowers in whorls on very short stalks. ⊙. F. Native of the Cape of Good Hope.

Hairy Mollugo. Fl. July. Pl. decumbent.

3 M. verticilla'ta (Lin. spec. 131.) leaves in whorls, unequal, obovately wedge-shaped, acute; stem decumbent, dichotomous; peduncles 1-flowered, in whorls. ⊙. S. Native of South America in Brazil, and near Cumana on the sea-shore, as well as in Virginia, and on the banks of the Columbia in North America. Rœm. et Schult. syst. 2. p. 871.—Pluk. phyt. 4. t. 332. f. 5.—Ehret. pict. t. 6. f. 3. A decumbent plant, with fleshy leaves.

Whorl-leaved Mollugo. Fl. July, Aug. Clt. 1748. Pl. decumbent.

4 M. Schra'nkii (Ser. mss. in D. C. prod. 1. p. 391.) leaves in whorls, rather linear, acute; stem dichotomous, diffuse; peduncles 1-flowered, few in a whorl. ⊙. S. Native of Brazil and Guiana. M. dichótoma, Schrank. pl. rar. 64. icon. exclusive of the synonyme of Lin. fil. Very like *M. verticillàta*, but differs in the leaves being narrower and longer; and flowers 1-3, rising from each whorl of leaves. Flowers white.

Schrank's Mollugo. Fl. July, Aug. Clt. 1826. Pl. ¼ to ½ ft.

** *Peduncles umbellate or racemose.*

5 M. stri'cta (Lin. spec. 131.) leaves usually 4 in a whorl, lanceolate, radical ones spatulate; branches panicled, dichotomous, nodding; stem erect, angular; capsule equal in length to the calyx. ⊙. S. Native of Asia, Java, &c.—Pluk. alm. p. 21. t. 257. f. 2.—Burm. zeyl. 31. t. 5. f. 3. Flowers nodding.

Upright-stemmed Mollugo. Pl. ½ foot.

6 M. pentaphy'lla (Lin. spec. 131.) leaves usually 5 in a whorl, obovate, glabrous; flowers panicled; stems decumbent. ⊙? S. Native of Ceylon.—Burm. zeyl. 13. t. 8. f. 1. Leaves 3-4-5 in a whorl, dark-green. Peduncles axillary, very long, panicled.

Five-leaved Mollugo. Fl. June, July. Clt.? Pl. procumbent.

7 M. nudicau'lis (Lam. dict. 4. p. 234.) radical leaves oblong, numerous, obovate, crowded; scapes trichotomously-panicled, decumbent, naked. ⊙? F. Native of the East Indies.—Burm. zeyl. 14. t. 8. f. 2. Radical leaves glaucous, green, large. Flowers cream-coloured. Seeds very black. (Burm.)

Naked-stemmed Mollugo. Fl. June, July. Pl. decumbent.

8 M. radia'ta (Ruiz, et Pav. fl. per. 1. p. 48.) stems procumbent, leafy; branches panicled; leaves obovate, acuminated. ⊙. H. Native of Chili in inundated places about Conception.—Rœm. et Schult. 2. p. 872.—Pluk. phyt. t. 118. f. 1.

Radiated Mollugo. Pl. procumbent.

9 M. arena'ria (H. B. et Kunth, gen. et spec. amer. 6. p. 21.) plant glabrous; stems dichotomous, diffuse, round; leaves 5 in a whorl, linear-spatulate, obsoletely 1-nerved, 4-times shorter than the spaces of the stem between the leaves; umbels of flowers almost sessile, generally 5 or 6-flowered. ⊙. H.

Native of Buenos Ayres, and in a sandy island in the river Apures near El Diamante. Stamens 3, shorter than the calyx.

Sand Mollugo. Pl. ¼ to ½ foot.

10 M. TRIPHY'LLA (Lour. fl. coch. ed. Willd. 1. p. 79, but not of Link.) stems diffuse; branches ternate; leaves 3 in a whorl, lanceolate, sessile; flowers dichotomous, on long stalks; peduncles branched at the apex. ⊙? H. Native of China about Canton, and the island of Manilla.

Three-leaved Mollugo. Fl. July. Pl. ¼ to ½ foot.

11 M. LI'NKII (Ser. mss. in D. C. prod. 1. p. 392.) stem erectish; leaves 3 in a whorl, large; panicles of flowers terminal and lateral. ⊙. S. Native of Brazil. M. triphylla, Link. enum. 1. p. 108. but not of Lour. Leaves acute, glabrous.

Link's Mollugo. Fl. July. Clt. 1821. Pl. ¼ to ½ foot.

12 M. GLINOI'DES (St. Hil. fl. bras. 2. p. 171. t. 109.) stem diffuse, trailing; leaves spatulate, tomentose; flowers sessile, fascicled; stamens 3-5. ⊙. H. Native of Brazil on the banks of the Uruguay.

Glinus-like Mollugo. Fl. Jan. Sept. Pl. prostrate.

Cult. The species of the genus *Mollùgo* are all weed-like plants, therefore not worth cultivating unless in botanic gardens. The seed should be sown in pots in any common soil, and the pots placed in the hot-bed, and in June they may be removed into the green-house, or planted out in the open border in a sheltered situation, where they will probably ripen seed.

XXIV. PHARNA'CEUM (an historical name. Pharnaces, king of Pontus, is said to have first used it in medicine.) Lin. gen. no. 517. Gært. fruct. 1. p. 130. f. 4. Mollùgo, sect. 2. Pharnàceum, D. C. prod. 1. p. 39.

Lin. syst. *Pentándria*, *Trigynia*. Calyx 5-parted. Petals very small or wanting. Stamens 5. Styles 3. Capsule 3-valved, 3-celled, many-seeded. Small herbaceous or shrubby plants. Leaves opposite or in whorls.

* *Peduncles bifid, racemose, or umbelliferous.*

1 P. BELLIDIFÒLIUM (Poir. dict. 5. p. 262.) stems erect, leafless; radical leaves rosulate, spatulate, tapering into the footstalk at the base; flowers corymbosely panicled. ⊙. S. Native of the West Indies and Guiana in waste ground and sandy places. Mollùgo bellidifòlia, Ser. mss. in D. C. prod. 1. p. 391.—Plum. amer. t. 21. f. 1. Flowers white.

Daisy-leaved Pharnaceum. Fl. June, July. Clt. 1823. Pl. ¼ foot.

2 P. PARVIFLÒRUM (Roth. nov. pl. spec. p. 186.) leaves ovate, obtuse, strigose on the under surface; umbels lateral; stems herbaceous, ascending. ⊙. S. Native of the East Indies. Mollùgo parviflòra, Ser. mss. in D. C. prod. 1. p. 391.

Small-flowered Pharnaceum. Fl. June, July. Pl. ¼ foot.

3 P. DI'STICHUM (Lin. mant. p. 221.) leaves almost linear, pubescent; racemes 2-parted, flexuous. ⊙. S. Native of the East Indies and the Cape of Good Hope. Mollùgo dísticha, Ser. mss. in D. C. prod. 1. p. 392. M. racemòsa, Lam. ill. no. 1197. —Pluk. phyt. 3. p. 22. t. 130. f. b.

Distich Pharnaceum. Fl. June, July. Pl. ½ foot.

4 P. CORDIFÒLIUM (Lin. amœn. 6. p. 85.) stems decumbent; leaves 4 in a whorl, obversely cordate, mucronated; corymbs axillary and terminal, dichotomous; flowers solitary in the forks. ⊙. F. Native of the Cape of Good Hope. Jacq. hort. schœnbr. t. 349. Mollùgo cordifòlia, Ser. mss. in D. C. prod. 1. p. 392. Petals white, shorter than the sepals.

Heart-leaved Pharnaceum. Fl. June, July. Clt. 1823. Pl. decumbent.

5 P. MULTIFLÒRUM (Ser. mss. in D. C. prod. 1. p. 392. under *Mollùgo*,) stems diffuse, dichotomous; leaves in whorls, lanceolate, unequal; flowers distich, panicled, numerous. ⊙. F. Native of China. Flowers white. Perhaps a species of *Mollùgo*.

Many-flowered Pharnaceum. Pl. ¼ foot.

6 P. DICHO'TOMUM (Lin. fil. suppl. p. 186.) smooth; stems flexuous; leaves 9 or more in a whorl, linear; peduncles axillary, elongated, dichotomous. ⊙. F. Native of the Cape of Good Hope. Rœm. et Schult. syst. 6. p. 689. Mollùgo dichótoma, Ser. mss. in D. C. prod. 1. p. 392.

Dichotomous-peduncled Pharnaceum. Fl. June, July. Clt. 1783. Pl. ¼ to ½ foot.

7 P. GLOMERA'TUM (Lin. fil. suppl. p. 185.) stems flexuous; leaves linear, reflexed, in whorls, acute, glabrous; flowers glomerate, almost sessile; stem decumbent. ⊙. F. Native of the Cape of Good Hope. Mollùgo glomeràta, Ser. mss. in D. C. prod. 1. p. 392.—Pluk. phyt. 163. t. 331. f. 4. Flowers white.

Glomerate-flowered Pharnaceum. Fl. June, Aug. Clt. 1817. Pl. prostrate.

8 P. MARGINA'TUM (Thunb. prod. p. 55. fl. cap. 2. p. 239.) stems filiform, decumbent; leaves small, in whorls, ovate, marginated, obtuse; flowers axillary, sessile, glomerate. ⊙. F. Native of the Cape of Good Hope. Mollùgo marginàta, Ser. mss. in D. C. prod. 1. p. 392.

Marginated-leaved Pharnaceum. Pl. decumbent, ⅛ foot.

9 P. CERVIA'NUM (Lin. spec. ed. 1. p. 272. ed. 2. p. 388.) stems in whorls, rarely dichotomous; peduncles umbellate, lateral, equal in length to the leaves; leaves in whorls of 4 or 5, very narrow, glaucous, obtuse, smoothish. ⊙. H. Native of Russia, Spain, Guinea, and Asia. Mollùgo Cerviàna, Ser. mss. in D. C. prod. 1. p. 392.—Lam. ill. t. 214. f. 1.—Gmel. sib. 3. p. 102. no. 79. t. 20. f. 2.—Buxb. cent. 3. p. 33. t. 62. f. 2. —Pluk. mant. 9. t. 332. f. 11. Calyx white on the inside. A weak-growing plant, at first erect, but at length decumbent.

Cervian's Pharnaceum. Fl. June, July. Clt. 1771. Pl. ½ ft.

10 P. SPERGULOI'DES (Poir. dict. 5. p. 260.) stems in whorls of 3 or 4; branches simple; umbels involucrated, terminal, few-flowered, or rising from the axils of the whorls; leaves in bundles, whorled, numerous, very narrow, and acute. ⊙? S. Native of India. Lam. ill. t. 214. f. 2. Mollùgo sperguloìdes, Ser. mss. in D. C. prod. 1. p. 392.

Spurry-like Pharnaceum. Fl. June, July. Clt. 1819. Pl. ¼ foot.

11 P. LINEA'RE (Lin. fil. suppl. p. 185.) leaves in whorls; branches dichotomous; umbel panicled, terminal, and lateral; leaves linear, obtuse, 6 or 8 in a whorl. ⊙? ♄. G. Native of the Cape of Good Hope. Mollùgo lineàris, Ser. mss. in D. C. prod. 1. p. 392. Andr. bot. rep. 326. Stems prostrate. Flowers white.

Linear-leaved Pharnaceum. Fl. May, June. Clt. 1795. Shrub ½ foot.

12 P. MICROPHY'LLUM (Rœm. et Schult. syst. 6. p. 686.) plant tomentose; peduncles umbellate; umbels compound; leaves ovate, terete, blunt, covered with interwoven wool. ♄. G. Native of the Cape of Good Hope. Mollùgo microphýlla, Ser. l. c. Stem shrubby, rigid; branchlets somewhat whorled, aggregate. Leaves rising from the knots in bundles, and scattered on the stems.

Small-leaved Pharnaceum. Shrub ¼ foot.

13 P. TERETIFÒLIUM (Thunb. prod. p. 53.) glabrous; branches opposite, and a little branched; leaves filiform, mucronated, terete; stem erect, frutescent; umbels erect, simple, stalked. ♄. G. Native of the Cape of Good Hope. Mollùgo teretifòlia, Ser. mss. in D. C. prod. 1. p. 393.

Terete-leaved Pharnaceum. Fl. June, July. Shrub ½ foot.

14 P. QUADRANGULA'RE (Lin. fil. suppl. 185.) smooth; stems suffruticose, erect; branches alternate, flexuous, leafless; leaves linear, quadrifariously imbricated; flowers in umbels; peduncles

short. ♄. G. Native of the Cape of Good Hope. Mollùgo quadrangulàris, Ser. mss. in D. C. prod. 1. p. 393. Plant with the appearance of a heath. Flowers inside white, outside green. Capsule quadrangular.

Quadrangular-capsuled Pharnaceum. Shrub $\frac{1}{4}$ to $\frac{1}{2}$ foot.

15 P. MUCRONA'TUM (Thunb. in phyt. bl. p. 29. fl. cap. 2. p. 239.) stems herbaceous, almost none; leaves ovate-mucronated, entire: flowers in whorls, aggregate, almost sessile. ⊙? G. Native of the Cape of Good Hope. Mollùgo mucronàta, Ser. mss. in D. C. prod. 1. p. 393. Radical leaves aggregate. Peduncles radical, capillary, numerous.

Mucronate-leaved Pharnaceum. Fl. June, July. Pl. $\frac{1}{4}$ foot.

16 P. UMBELLA'TUM (Forsk. fl. ægypt. p. 58.) radical leaves stellate, cauline ones obovate; peduncles umbellate, involucrated; involucres linear. ⊙. H. Native of Egypt in argillaceous places near Lohaga. Flowers brown. Mollùgo umbellàta, Ser. mss. in D. C. prod. 1. p. 393.

Umbel-flowered Pharnaceum. Fl. June, Aug. Clt. 1820. Pl. 1-2 inches.

17 P. INCA'NUM (Lin. fil. suppl. 186.) leaves scattered, or 4 in a whorl, with bundles of smaller leaves rising from the axillæ, smooth, linear; stems erect; branches white from stipulas; stipulas pilose; flowers in proliferous umbels; common peduncles very long. ♄. G. Native of the Cape of Good Hope. Sims, bot. mag. 1883. Flowers white inside, green on the outside.

Hoary-stipuled Pharnaceum. Fl. May, Oct. Clt. 1782. Shrub $\frac{1}{2}$ foot.

18 P. PRUINÒSUM (Haw. succ. pl. suppl. p. 15.) stems branched, thickish; branches pale from membranaceous stipulas; leaves crowded, filiform, terete, acute, fleshy, mealy, or pruinose. ♄. G. Native of the Cape of Good Hope. Peduncles umbellate.

Pruinose-leaved Pharnaceum. Fl. June, Aug. Clt. 1819. Shrub $\frac{1}{4}$ foot.

19 P. A'LBENS (Lin. fil. suppl. p. 186.) smooth, suffruticose; leaves linear, opposite, remote, exstipulate; common peduncle long, umbellate; pedicels filiform. ♄. G. Native of the Cape of Good Hope.

White-stemmed Pharnaceum. Shrub $\frac{1}{2}$ to 1 foot.

* * *Peduncles* 1-*flowered.*

20 P. SERPYLLIFÒLIUM (Lin. fil. suppl. 186.) smooth; stem filiform, dichotomous; leaves opposite, ovate, obtuse, stalked; peduncles axillary, 1-flowered. ⊙. F. Native of the Cape of Good Hope. A weak plant. Mollùgo serpyllifòlia, Ser. mss. in D. C. prod. 1. p. 391. Like *Herniària glàbra.*

Wild-Thyme-leaved Pharnaceum. Pl. decumbent.

21 P. DEPRE'SSUM (Lin. mant. atl. p. 564.) stem prostrate, simple; peduncles 1-flowered, lateral; leaves lanceolate, pubescent, opposite or 4 in a whorl. ⊙. F. Native of the East Indies. Lœflíngia I'ndica. Stems depressed. Leaves somewhat tetragonal, lanceolate. Stipulas scarious. Peduncles dichotomous. Corolla purple.

Depressed Pharnaceum. Pl. prostrate.

22 P. MOLLU'GO (Lin. mant. 561.) leaves in whorls, unequal, on short stalks, 4 or 5 in a whorl, elliptic-lanceolate, smooth, acutish, with scabrous margins; peduncles axillary, 1-flowered; stem procumbent, dichotomous. ⊙. S. Native of Ceylon. Mollùgo Spérgula, Lin. spec. 1. p. 131.—Burm. zeyl. p. 13. t. 7. fl. ind. 31. t. 5. f. 4. Flowers white. Leaves like those of *Gàlium Mollùgo.*

Mollugo-like Pharnaceum. Pl. decumbent.

23 P. MARI'TIMUM (Walt. fl. carol. p. 117.) flowers lateral, solitary, sessile; leaves rather terete, obtuse, fleshy. ⊙. H. Native of Carolina. Mollùgo marítima, Ser. mss. in D. C. prod. 1. p. 392.

Sea-side Pharnaceum. Pl. prostrate.

24 P. LICHTENSTEINIA'NUM (Rœm. et Schult. syst. 6. p. 692.) leaves in whorls, lanceolate-linear, acute; peduncles axillary. ⊙? F. Native of the Cape of Good Hope on Mount Witsemberg. Mollùgo Lichtensteiniàna, Ser. mss. in D. C. prod. 1. p. 393. Pharnáceum galioìdes, Lichten. spicil. fl. cap. mss. Very like a species of *Spérgula*, but the flowers are monogynous. Perhaps a proper genus?

Lichtenstein's Pharnaceum. Pl. $\frac{1}{2}$ foot.

25 P. HOFFMANNSEGGIA'NUM (Rœm. et Schult. syst. 6. p. 692.) leaves lanceolate, acute, in whorls; peduncles 1-flowered, elongated. ⊙. S. Native of Brazil. Mollùgo Hoffmannseggiàna, Ser. mss. in D. C. prod. 1. p. 393. Pharnàceum galioìdes, Willd. mss. ex Schult. l. c. Flowers white.

Hoffmannsegg's Pharnaceum. Fl. June, July. Pl. prostrate.

26 P. BERTERIA'NUM; stem dichotomous, slender; space between the leaves very long; leaves very narrow, bluntish; peduncles filiform, in whorls. ⊙? S. Native of Porto Rico, along the sides of torrents. Pharnàceum lineàre. Bert. ined. Mollùgo Berteriàna, Ser. mss. in D. C. prod. 1. p. 391.

Bertero's Pharnaceum. Pl. procumbent.

Cult. The species of *Pharnàceum* are scarcely worth cultivating, except in botanical gardens, being for the most part weedy-looking plants. The greenhouse shrubby kinds thrive well in a mixture of sandy loam and peat, but the pots should be well drained with potsherds. Cuttings planted under a hand-glass in the same kind of soil will root freely, but they may be increased more easily by seed, which often ripen in abundance. The annual species should be sown in pots in the spring, and placed in a moderate hot-bed, where they may remain until they ripen their seed, or they may be removed into the greenhouse in June.

XXV. PHY'SA (φυσα, *physa*, a bladder; bladdery capsules). Pet. Thouar. nov. gen. mad. p. 20. D. C. prod. 1. p. 393.

LIN. SYST. *Decándria, Trigýnia.* Calyx 5-sepalled. Petals none. Stamens 10. Stigmas 3. Capsules 3-furrowed, 3-celled, 3-valved; valves septiferous, conniving with the receptacle.

1 P. MADAGASCARIE'NSIS (D. C. prod. 1. p. 393.) a little prostrate plant with jointed stems; leaves 4 in a whorl, unequal; peduncles 1-flowered. ⊙. S. Native of Madagascar.

Madagascar Physa. Pl. trailing.

Cult. This plant should be sown in a pot in a mixture of sand, loam, and peat, and placed in a hot-bed, where it may remain until it ripens its seed. Not worth cultivating.

XXVI. HOLO'STEUM (from ολος, *holos*, all; and οστεον, *osteon*, a bone, all bone, applied by antiphrasis to this plant, which is no bone, being soft and delicate. This species of wit is not uncommon, even at the present day, but applied to men not plants). Lin. gen. 136. Gært. fruct. t. 130. f. 5. D. C. prod. 1. p. 393.

LIN. SYST. *Tri-Pentándria, Trigýnia.* Calyx 5-sepalled. Petals 5, toothed. Stamens 5, or from abortion only 3 or 4. Styles 3. Capsules 1-celled, ending in 6 teeth at the apex. Embryo unfolded within the albumen.

1 H. DIA'NDRUM (Swartz. prod. p. 27. icon. t. 7.) stems procumbent, rather stiff; leaves roundish; flowers diandrous; stipulas 4, on both sides. ⊙. S. Native of Jamaica on rocks. Rœm. et Schult. syst. 2. p. 857. Very like *Drymària cordàta*, but much smaller, of which genus it is perhaps a species. Petals white.

Diandrous Holosteum. Fl. May, Sept. Clt. 1824. Pl. procumbent, $\frac{1}{8}$ foot.

2 H. SPERGULOI'DES (Lehm. pug. pl. hort. hamb. 10.) stem decumbent; leaves linear, fleshy, acute, younger ones pubescent,

stipulate; racemes leafy, rather secund; sepals lanceolate, obtuse, and glandular-pilose; petals ovate; stamens 3-4. ⊙. H. Native of Egypt. Flowers rose-coloured.

Spurry-like Holosteum. Fl. June, July. Clt. 1829. Pl. procumbent.

3 H. MUCRONA'TUM (Moc. et Sesse. pl. mex. ined. icon. in D. C. prod. 1. p. 393.) plant pubescent; stems procumbent; leaves cordate; peduncles 3-flowered. ⊙. F. Native of Mexico. Perhaps a variety of *Drymària cordàta*. Petals white.

Mucronate Holosteum. Fl. May, Sept. Pl. trailing, $\frac{1}{8}$ foot.

4 H. SUCCULE'NTUM (Lin. amœn. 3. p. 21.) leaves elliptical, fleshy, glabrous; petals somewhat trifid, smaller than the calyx. ⊙. H. Native of the states of New York and Carolina. Polycárpon uniflòrum, Walt. fl. carol. p. 83. This is a very doubtful plant according to Pursh, he having never been able to find it either in the state of New York nor Carolina. Flowers white.

Succulent Holosteum. Pl. trailing?

5 H. HIRSU'TUM (Lin. amœn. 3. p. 21.) leaves orbicular, hairy; flowers sessile? white. ⊙. S. Native of Malabar.

Hairy Holosteum. Pl. trailing.

6 H. UMBELLA'TUM (Lin. spec. 130.) radical leaves elliptical, glaucous, glabrous; cauline ones larger, ovate; flowers umbellate; common peduncles clammy-pubescent; pedicels deflexed after flowering. ⊙. H. Native of many parts of Europe on old walls and in sandy fields. In England on several walls and roofs of houses about Norwich, about Bury, also on the walls of Chelsea garden. Smith, engl. bot. t. 27. Fl. dan. 1204. Lam. ill. t. 51. f. 1. Cerástium umbellàtum, Huds. 201. Flowers white, sometimes tinged with red.

Umbellate-flowered Jagg-chickweed. Fl. April, May. Engl. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

Cult. Holósteum diándrum, mucronàtum, and *hirsútum,* require to be sown in pots and placed in a hot-bed in any kind of soil, where they may remain. *H. succuléntum* and *umbellàtum* may be sown on rock-work. None of the species are worth cultivating except in botanical gardens.

XXVII. SPE'RGULA (from *spargo,* to scatter; because it scatters its seed abroad, to the great profit of the farmer in Holland. See *Spérgularia arvénsis.*). Lin. gen. no. 798. Gært. fruct. t. 130. f. 4. D. C. prod. 1. p. 394.

Lin. syst. *Decándria, Pentagýnia.* Calyx 5-parted. Petals 5, entire. Stamens 5 and 10. Styles 5. Capsules 1-celled, 6-valved, 5-valved according to Smith, many-seeded. Leaves exstipulate.

1 S. NODÒSA (Lin. spec. 630.) leaves opposite, awl-shaped, smooth, bluntish; lower ones broad, sheathing, upper ones clustered; stems tufted, almost simple, few-flowered; petals twice as long as the calyx: seeds somewhat reniform, rough. ♃. H. Native of many parts of Europe in marshy places. In Canada and on the shores of the Arctic sea. In Britain in moist sandy or turfy ground. Smith, engl. bot. t. 694. Curt. lond. fasc. 4. t. 34. Fl. dan. t. 96. Stems spreading or prostrate. Flowers white.

Var. β, brevifòlia (Pers. ench. 1. p. 522. Poir. dict. 7. p. 305.) stem very simple; clusters of leaves approximate; cauline leaves very short. ♃. H. Native of Europe in arid fields. Flowers larger than in var. *a*.

Var. γ, marítima (Pers. ench. 1. p. 522.) leaves fleshy, incurved, spreading. ♃. H. Native by the sea-side.

Knotted Spurry or Sand-chickweed. Fl. July, Aug. Brit. Pl. 3 to 6 inches long.

2 S. SAGINOÌDES (Lin. spec. 631.) stem creeping; leaves opposite, awl-shaped, smooth, nearly pointless; peduncles solitary, very long; petals obovate, very blunt; hardly equal in length to the obtuse sepals; seeds rather kidney-shaped, dotted. ♃. H. Native of Switzerland, France, Siberia and Sweden, as well as in South Carolina and on the north-west coast of America. In Scotland on Mael-Ghyrdy and Ben Lawers. In the islands of Unalaschka and St. Paul. Smith, engl. bot. 2105. Swartz. in the stockh. trans. for 1789. p. 44. t. 1. f. 2. Stellària biflòra, t. 12. but not of Lin. Plant with the habit of *Sagìna procúmbens,* with several stems in a patch, in their lower part decumbent, then erect. Petals white. Dr. Swartz says his plant has only 5 stamens, but with us they are 10.

Sagina-like Spurry. Fl. June, July. Scotland. Pl. 2 to 3 inches long.

3 S. SUBULA'TA (Swartz, act. holm. 1789. p. 45. t. 1. f. 3.) plant rather pilose; leaves opposite, almost sessile, rather leaning to one side, linear-awl-shaped; somewhat awned, ciliated; peduncles solitary, very long; petals length of calyx. ♃. H. Native of Germany, Denmark, Sweden, and Britain on barren heaths, and North America on the Rocky Mountains. Smith, engl. bot. 1082. S. larícina, Huds. 203. Fl. dan. 858. S. saginoìdes, Curt. lond. fasc. 4. t. 35. Sagìna procúmbens β, Lin. spec. 185. Leaves fringed with glandular or slightly viscid hairs, and terminate each in a very conspicuous hair-like point, not sufficiently expressed in engl. bot. l. c. Flowers white, about half the size of those of *S. saginoìdes.* Stamens more frequently 5 than 10.

Var. β, flòre-plèno; flowers double, white.

Awl-shaped-leaved Spurry. Fl. July, Aug. Britain. Pl. 2 inches.

4 S. PILI'FERA (D. C. fl. fr. 4. no. 4391.) leaves opposite, linear, awned, rather stiff, glabrous, in bundles; stems creeping, branched, tufted; peduncles very long; petals twice as large as the calyx; seeds egg-shaped. ♃. H. Native of Corsica on the higher mountains. Flowers white.

Hair-bearing-leaved Spurry. Fl. July, Aug. Clt. 1826. Pl. $\frac{1}{4}$ foot.

5 S. GLA'BRA (Willd. spec. 2. p. 821.) plant decumbent; leaves opposite, filiform, glabrous, rather acute; petals larger than the calyx. ♃. H. Native of the alps of Europe in shady pastures. Poir. dict. 7. p. 306. Spérgula saginoìdes, All. ped. no. 1735. t. 64. f. 1. Flowers white.

Glabrous Spurry. Fl. June, July. Clt. 1816. Pl. trailing, $\frac{1}{8}$ to $\frac{1}{4}$ foot long.

6 S. GLANDULÒSA (Besser. prim. fl. galic. p. 298.) plant covered with glandular pubescence; leaves opposite, awl-shaped; stems branched, bearing bundles of smaller leaves in the axillæ of the older ones; petals elliptical, twice as long as the obtuse sepals. ♃. H. Native of Galicia in humid pastures. Flowers white.

Glandular Spurry. Fl. June, Aug. Pl. $\frac{1}{4}$ foot.

7 S. ARENARIOÌDES (Ser. mss. in D. C. prod. 1. p. 395.) plant glabrous; root thick; stem prostrate; branches ascending; leaves lanceolate, linear, acute; flowers pentandrous; petals oblong, length of calyx. ♃? F. Native of Mexico. Arenària? pentágyna, Moc. et Sesse, pl. mex. ined. icon. Flowers white.

Sand-wort-like Spurry. Fl. June, July. Pl. prostrate.

8 S. APE'TALA (Labill. nov. holl. 1. p. 112. t. 142.) almost stemless; leaves opposite, connate, imbricate, long; flowers apetalous, pentandrous; sepals lanceolate, very acute. Native of Van Diemen's Land.

Apetalous Spurry. Pl. 1 inch.

9 S. HUMIFU'SA (Cambess in St. Hil. fl. bras. 2. p. 173.) stems trailing, branched, covered with glandular-pubescence beneath; leaves linear, awl-shaped, connate at the base, smoothish; pedicels axillary, solitary, equal in length with the leaves; calyx clothed with glandular pubescence; petals equal in length

to the calyx. ⊙. H. Native of Brazil near the town called Rio Grande de St. Pedro do Sul. Like *Spérgula saginoìdes.*

Trailing Spurry. Fl. Sept. Pl. trailing.

Cult. None of the species of *Spérgula* are wòrth cultivating, except in botanical gardens. They will grow without care in any moist situation.

XXVIII. SPERGULA'RIA (altered from *Spérgula*, which see). Cambess. in St. Hil. fl. bras. 2. p. 171.

LIN. SYST. *Decándria, Tri-Pentagýnia.* Calyx of 5 sepals with membranous edges. Petals 5, entire. Stamens 10, seldom 5. Styles 3-5. Capsule 1-celled, 3-5-valved, many-seeded; seeds compressed, marginate. This genus has been divided from *Spérgula* and *Arenària*, by Cambessedes. We shall therefore retain the authorities for the species under these genera. The genus is remarkable in being furnished with stipulas, in the seeds being bordered with a wing, and in the petals and stamens usually adhering to the base of the calyx.

SECT. I. SPE'RGULA (in allusion to the genus being separated from *Spérgula*). Styles 5. Stamens 10. Capsule 5-valved. Flowers white. Leaves linear, in whorls. Stipulas in pairs under each whorl, membranous, very short. Flowers cymose.

1 S. ARVE'NSIS (Lin. spec. 630.) leaves in whorls; flowers decandrous; seeds spherical, rather hispid, black, with a narrow border. ⊙. H. Native throughout Europe in gardens and cultivated fields. North America on the banks of the Columbia and about Quebec; plentiful in Britain. Smith, engl. bot. t. 1535. Curt. lond. fasc. 5. t. 31. Fl. dan. 1033. Lam. ill. t. 393. f. 1. Flowers white.

Var. β, *geniculàta* (Poir. 7. p. 303.) stem beyond a foot, jointed at the knots, as if it were viviparous. S. geniculàta, Pers. ench. 1. p. 522. no. 3. Petals white.

In the Netherlands and in Germany the seed of this plant is sown on corn stubbles, to supply a bite for sheep during winter. It may be sown and reaped in eight weeks, either in autumn or spring. It is said to enrich the milk of cows, so as to make it afford excellent butter, and the mutton fed on it is said to be preferable to that fed on turnips. Hens eat *spurry* greedily, and it is supposed to make them lay a great number of eggs, whether in hay, or cut green, or in pasture. Von Thaer observes, it is the most nourishing in proportion to its bulk, of all forage, and gives the best flavoured milk and butter. It has been recommended to be cultivated in England, but it is not likely that such a plant can ever pay the expence of seed and labour in this country, even on the poorest soil; or at all events, as Professor Martyn observes, we have many better plants for such soils. *S. pentándra* has the same properties, and is, as well as *S. arvénsis*, called *yarr* in Scotland and *pick-purse* in Norfolk.

Corn Spurry or Yarr. Fl. June, July. Brit. Pl. ½ to 1 ft.

2 S. PENTA'NDRA (Lin. spec. 630.) leaves in whorls; flowers generally pentandrous; seeds lenticular, with dotted winged margins. ⊙. H. Native of Europe in woods in many parts. In Ireland on sandy ground. Lam. illus. t. 392. f. 2.—Moris, hist. 2. p. 551. sect. 5. t. 23. figure last but one marked 2. Petals white.

Var. β, *Spérgula pentándra* (Engl. bot. 1536.) seeds compressed, with a narrow, whitish membranous border. ⊙. H. Native about the Botanic Garden at Liverpool. Petals white.

Pentandrous Spurry. Fl. Ju. Jul. England. Pl. 1 to 1½ ft.

3 S. VILLO'SA (Pers. ench. 1. p. 522.) plant pubescent; leaves in whorls; cymes branched, many-flowered; petals shorter than the sepals. ♃. S. Native of Monte Video. Poir. dict. 7. p. 304. Sepals oblong, acutish. Petals white.

Villous Spurry. Fl. July. Pl. ½ foot.

4 S. VISCO'SA (Lag. in varied. de cienc. 1805. p. 213. gen. et spec. 15.) leaves in whorls, villous, clammy; flowers decandrous; petals longer than the calyx. ♃. H. Native of Spain near the snow on the summit of the mountain commonly called de Los-pozos near Arvas. Petals white.

Clammy Spurry. Fl. June, July. Pl. ½ foot.

5 S. PA'LLIDA (Salisb. prodr. 298.) stem clammy, pubescent; stipulas large; leaves half terete, mucronulate; petals oval, entire, obtuse; stamens 10. ♃. G. Native of the Cape of Good Hope. Seeds imbricated, a little reniform, with scarious margins. Petals pale red.

Pale-red-petalled Spurry. Fl. June, Jul. Clt. 1810. Pl. 1 ft.

SECT. II. ARENA'RIA (in allusion to the plants being separated from *Arenària*). Stipulària, Haw. Lepígonum, Wahlenb. fl. goth. ex Spreng. neue. entd. 3. p. 231. Stamens 10. Styles 3. Capsules 3-valved. Leaves linear, opposite, with bundles of smaller ones in the axillæ. Stipulas scarious, situated at the base of the leaves. Flowers usually cymose, but sometimes solitary, 1-flowered.

6 S. SEGETA'LIS (Lam. fl. fr. 3. p. 43.) plant glabrous; stem erect; leaves awl-shaped, leaning rather to one side; sepals scárious, marked with a longitudinal green line in the centre; petals shorter than the calyx; peduncles after flowering deflexed; seeds rather pear-shaped, rough. ⊙. H. Native among corn in France and Spain. Alsìne segetàlis, Lin. spec. 390.—Vaill. bot. par. t. 3. f. 3. Capsules 3-valved; valves broad, obtuse. Petals white.

Corn-field Sand-spurry. Fl. Jul. Sept. Clt 1805. Pl. ½ to 1 ft.

7 S. LEPTOPHY'LLA; like *Arenària tenuifòlia*, Lin. but differs in the leaves being stipulate; stipulas setaceous, scariose, and white; flowers lateral, and nearly sessile; bracteas all scariose and white. It differs from *Spergulària segetàlis* in the different figure of the stipulas. ♃. F. Native of Mexico. Arenària leptophýlla, Schlecht. et Cham. in Linnæa 5. p. 233.

Slender-leaved Sand-spurry. Pl. ¼ foot.

8 S. MOLLUGI'NEA (Ser. mss. in D. C. prod. 1. p. 400.) plant very smooth; leaves linear, thick, glaucous, rather callose at the apex; stem spreading, forked; flowers axillary; peduncles after flowering deflexed; sepals ovate, obtuse, with membranaceous margins; capsules roundish, 3-valved; valves very blunt, equalling the calyx in length; seeds reniform. ⊙. H. Native of New Spain. Alsìne mollugínea, Lag. gen. et spec. 1815. p. 13. Petals white. Perhaps a different genus from the preceding.

Mollugo-like Sand-spurry. Fl. June, July. Pl. ½ foot.

9 S. PROSTRA'TA (Ser. mss. in D. C. prod. 1. p. 400.) stems forked, prostrate, glabrous; leaves linear, disposed in whorls; extreme branches filiform; peduncles axillary, 1 or 4-flowered; sepals lanceolate, unequal, equal in length with the corolla; style one; stigmas 3; capsules ovate-roundish, 3-valved; valves ovate, bluntish. ♃? H. Native of Egypt. Alsìne prostràta, Forsk. descr. p. 201. Delile, fl. ægypt. p. 68. t. 24. f. 4. Flowers rose-coloured.

Prostrate Sand-spurry. Pl. prostrate.

10 S. SUCCULE'NTA (Ser. mss. in D. C. prod. 1. p. 400.) stems trailing, small, glabrous; branches forked; leaves spatulate; flowers terminal, somewhat panicled; sepals oblong, obtuse, with membranaceous margins, length of corolla; style 1; stigmas 3; capsules rather spherical, 3-valved; valves lanceolate, with the margins involute after opening. ⊙. H. Native of Egypt. Alsìne succulénta, Delil. fl. ægypt. p. 68. t. 24. f. 3. Flowers white.

Succulent Sand-spurry, Pl. trailing.

11 S. PURPU'REA (Pers. ench. 1. p. 50. but not of Schlecht.) plant hispid; stem erect; branches divaricating; leaves setaceous, almost one-half shorter than the spaces of the stem between the leaves; sepals lanceolate, bluntish, with scariose

margins; petals very blunt, shorter than the calyx; peduncles after flowering deflexed; seeds somewhat pear-shaped, black. ⊙. H. Native of Spain. Capsules of 3 lanceolate, acute valves. A neat little plant with fine purple flowers.

Purple Sand-spurry. Fl. Ju. Jul. Clt. 1823. Pl. ¼ to ½ ft.

12 S. rùbra (Lin. spec. 606.) stems prostrate, hairy; leaves linear, bristle-pointed, shorter than the spaces between the leaves; stipulas membranous; sepals lanceolate, bluntish, with scarious margins; peduncles deflexed after flowering; seeds compressed, angular, roughish at the edge, without a margin. ⊙. H. Native abundantly throughout Europe, as well as the north of Africa and California, in sandy fields. Smith, engl. bot. t. 852. A. campéstris, All. ped. 2. p. 114. Flowers light-purple; capsules 3-valved, as long as the calyx.

Red-flowering Sand-spurry. Fl. July, Aug. Britain. Pl. prostrate.

13 S. salìna (Presl. fl. cich. p. 23.) leaves semi-cylindrical, fleshy, pointless, longer than the spaces between the leaves; stipulas membranaceous, sheathing; capsules oblong, larger than the calyx; seeds compressed, angular, roughish. ⊙. H. Native of Bohemia in salt pastures. Arenària salìna, Ser. mss. in D. C. prod. 1. p. 401. Flowers light purple. This plant is said to be like *A. marìna*, and probably is not distinct.

Salt-marsh Sand-spurry. Fl. Jul. Aug. Clt. 1820. Pl. prostr.

14 S. glutinòsa (Bieb. fl. taur. 1. p. 344.) plant villous, clammy; leaves oblong, bluntish; stem erect, few-flowered; petals obovate, longer than the calyx. ⊙. H. Native between Astracan and Kisljar. A little plant with the appearance of *a Cerástium*, and flowers size, form, and colour of *S. rùbra*.

Clammy Sand-spurry. Fl. June, Aug. Pl. ¼ foot.

15 S. Spérgula (Duf. ann. gen. 7. p. 293.) plant prostrate, pubescent; leaves linear, fleshy, longer than the spaces of the stem between the leaves; peduncles rather leaning to one side, at length twisted backwards; sepals somewhat acute, shorter than the capsules; petals scarcely the length of the calyx; seeds girded by a membranaceous border. ⊙. H. Native of humid sandy fields near St. Filipe. Petals red. An intermediate plant between *S. rùbra* and *S. marìna*.

Spurry-like Sand-spurry. Fl. July, Aug. Pl. prostrate.

16 S. media (Lin. spec. 606.) stems prostrate, villous; leaves semi-cylindrical, fleshy, pointless, equal in length to the spaces of the stem between the leaves; sepals lanceolate, bluntish, with scarious margins; peduncles deflexed after flowering; seeds girded by a membranaceous margin. ⊙. H. Native of many parts of Europe on the sandy sea-coast and pastures adjacent. A. marìna, fl. dan. t. 740. Smith, engl. bot. t. 958. A. marginàta, D. C. fl. fr. 4. p. 793. icon. rar. gall. t. 48. A. glandulòsa, Jacq. hort. schœnbr. 3. p. 355. A. rùbra β, Lin. spec. 606. A. rùbra γ, Huds. 193. A much stouter and more succulent plant than *S. rùbra*. The border round the seeds is very variable in colour and width, even in the same capsule. Flower light-purple.

Intermediate Sea-spurry. Fl. Ju. Jul. Brit. Pl. prostrate.

17 S. radicans (Presl. ex Spreng. 2. p. 400.) stem prostrate, glabrous; leaves filiform, semi-cylindrical, obtuse; stipulas ovate, scarious; flowers axillary; capsule equal in length to the calyx; seeds compressed. ♃. H. Native of Mount Etna. Arenària, Spreng. l. c. Flowers red.

Rooting Sea-spurry. Pl. prostrate.

18 S. grandis (H. B. et Kunth, nov. gen. et spec. amer. 6. p. 30. in a note) leaves linear, acute, in whorls, longer than the spaces of the stems between the leaves; cymes corymbose, many-flowered; sepals oblong, acutish, longer than the petals; seeds girded by a membranaceous white wing. ⊙. H. Native about Monte Video. Spérgula grándis, Pers. ench. 1. p. 522. Poir. dict. 7. p. 305. Stems thick. Flowers white, purple at the tip.

Great Sand-spurry. Pl. 1 foot.

19 S. Canadensis (Pers. ench. 3. p. 504.) plant pilose, rather hispid; leaves filiform, longer than the spaces of the stem between the leaves; sepals lanceolate, bluntish, with broad scarious margins; stamens 5; peduncles deflexed after flowering; seeds somewhat semicordate, compressed. ⊙. H. Native of North America on the sea-coast, and in salt marshes from Canada to Carolina. A. rùbra β, Mich. fl. bor. amer. 1. p. 274. Flowers pale red. Capsules rather globose, 3-valved, longer than calyx; valves broad, blunt.

Canadian Sand-spurry. Fl. Ju. Jul. Clt. 1812. Pl. trailing.

20 S. Cervia'na (Cham. in Schlecht. Linnæa. 1. p. 52.) smooth; stems spreading, dichotomous; leaves linear, thick, mucronate, stipulate; flowers dichotomously-panicled, glomerate; capsule 3-valved, exceeding the calyx; seeds kidney-shaped, angular, tubercled. ♃. G. Native of Chili. Habit of *S. rùbra*.

Cervian's Sand-spurry. Pl. ½ foot.

21 S. viscòso-pubéscens (Lois. in Lin. trans. par. vol. 4.) root thick; stems prostrate; leaves linear-awl-shaped, rather longer than the internodes; stipulas membranous, sheathing a little; flowers in racemose panicles; petals and capsule shorter than the calyx; sepals obtuse, marginate. ♃. H. Native of Corsica. Flowers red?

Clammy-pubescent Sand-spurry. Pl. prostrate.

22 S. rupéstris (Camb. in St. Hil. fl. bras. 2. p. 172.) puberulous; leaves linear, awl-shaped, longer than the spaces of the stem between the leaves; cymes few-flowered; sepals obtuse, equal in length with the petals. ♃. F. Native of Brazil in the province of Cis-platine, in the fissures of rocks. Root woody, thick. The whole plant is beset with glandular hairs. Petals white.

Rock Sand-spurry. Pl. ½ foot.

23 S. levis (Camb. in St. Hil. fl. bras. 2. p. 176.) smooth; leaves linear, awl-shaped, longer than the internodes; cymes few-flowered; petals 4 times shorter than the acute sepals. ♃. F. Native of Brazil in the Eastern part of the province of Cis-platine. Stems numerous from the root, which is the case with most of the species. Flowers white.

Smooth Sand-spurry. Pl. 1 foot.

24 S. racemòsa (Camb. in St. Hil. fl. bras. 2. p. 178.) puberulous; leaves linear-awl-shaped, lower ones longer than the spaces of the stem between the leaves, but the upper ones are much shorter; cymes racemose, many-flowered; petals 3-times shorter than the oblong-lanceolate bluntish sepals. ♃. F. Native about Monte-Video. Flowers white.

Racemose-flowered Sand-spurry. Pl. 1½ foot.

Cult. None of the species are worth cultivating for ornament; they will all thrive well on rock-work in any common garden soil. The Brazilian species will require shelter during winter.

XXIX. DRYMA'RIA (from δρυμος, *drymos*, a forest; habitation of most of the species). Willd. herb. ex Rœm. and Schult. syst. 5. p. 406. H. B. et Kunth, gen. et spec. amer. 6. p. 21. D. C. prod. 1. p. 395.

Lin. syst. *Pentándria, Trigýnia.* Calyx 5-parted. Petals 5, bifid. Stamens 5. Styles 3. Capsules 3-valved even to the base, 5 and many-seeded. Embryo perepheric, rather annular.—Diffuse-branched, glaucous herbs, with petiolar, twin, and many stipulas.

1 D. Frankenioìdes (H. B. et Kunth, gen. et spec. amer. 6. p. 21. t. 515.) plant much branched, viscid from glandular hairs, hoary; leaves on short footstalks, lanceolate-oblong; peduncles 1-flowered; petals shorter than the calyx, 6-cleft, with the 4 intermediate segments capillaceous; ovary containing about 50

seeds. ⊙. S. Native of South America in the sand near Pachuca, at the height of 3810 feet. D. arenarioìdes, Rœm. et Schult. syst. p. 406. Seeds angular, reniform, thickly beset with very minute tubercles. Petals white.

Frankenia-like Drymaria. Pl. trailing.

2 D. stellarioi'des (Willd. herb. ex Rœm. et Schult. syst. 5. p. 406.) stems dichotomous at the apex, few-flowered; leaves sessile, glabrous; calyx viscid, pubescent, shorter than the bifid petals; ovary containing about 50 seeds. ⊙. S. Native of Quito near Hambato at the height of 4140 feet. H. B. et Kunth, gen. et spec. amer. 6. p. 22. Petals white.

Stitch-wort-like Drymaria. Fl. July, Sept. Pl. trailing.

3 D. ova'ta (Rœm. et Schult. syst. 5. p. 406.) stems villous at the top as well as the branches; leaves stalked, ovate, acute, mucronated, rounded at the base, puberulous; peduncles bifid, few-flowered; calyx glabrous, equalling in length the corolla; petals profoundly bifid; ovary containing 13 to 17 seeds. ⊙. H. Native near Quito at the height of 4380 feet. H. B. et Kunth, nov. gen. et spec. amer. 6. p. 23. Petals white.

Ovate-leaved Drymaria. Fl. July, Sept. Pl. trailing.

4 D. corda'ta (Willd. herb. ex Rœm. et Schult. 5. p. 406.) stems as well as leaves glabrous; leaves ovate, roundish, acute, mucronated, rounded or obsoletely cordate at the base, on short footstalks; peduncles dichotomous, many-flowered; calyx downy, exceeding in length the petals; ovary 7-10-seeded. ♃. S. Native of the West Indies and Surinam. H. B. et Kunth, nov. gen. et spec. amer. 6. p. 23. Holósteum cordàtum, Lin. amœn. 3. p. 21. mant. 327. Lam. ill. t. 51. f. 2. Petals white. Plant glaucous.

Cordate-leaved Drymaria. Fl. July, Sept. Clt. 1814. Pl. creeping.

5 D. gra'cilis (Schlecht. et Cham. in Linnæa 5. p. 232.) like *D. cordàta*, but differs in the leaves being more ovate, never dilated nor kidney-shaped, longer than the capillary petioles; peduncles and calyxes smooth, not clothed with glandular down as in that plant. The whole plant is more erect, and of a paler green colour, and the seeds are much larger. ⊙. H. Native of Mexico at Jalapa.

Slender Drymaria. Fl. June, Sept. Clt. 1828. Pl. ½ foot.

6 D. palu'stris (Schlecht. et Cham. in Linnæa 5. p. 232.) like *D. cordàta*, but with a much more slender habit, and with the leaves nearly 3 times smaller; bracteas broader and blunter; seeds smaller and echinately-muricated, not granular; peduncles and calyxes smooth; leaves roundish-ovate, rather cordate, acutish, younger ones and stems villous. ♃. F. Native of Mexico at Jalapa.

Marsh Drymaria. Fl. June, Sep. Clt. 1830. Pl. creeping.

7 D. villòsa (Schlecht. et Cham. in Linnæa 5. p. 232.) like the rest, but the whole plant is villous; seeds smaller, tuberculated, not muricated. ♃. F. Native of Mexico.

Villous Drymaria. Fl. April, Sep. Pl. ¼ to ½ foot.

8 D. dia'ndra (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 647.) branched, puberulous; leaves roundish-ovate, mucronate, smooth, tapering to the base; peduncles bifid; flowers diandrous; calyx clothed with glandular pubescence; petals profoundly bifid; capsule 1-seeded. ♃. S. Native of Java. Allied to *D. ovàta* and *D. cordàta*.

Diandrous Drymaria. Pl. trailing.

9 D. divarica'ta (H. B. et Kunth, gen. et spec. amer. 6. p. 24.) stems as well as leaves glabrous; leaves stalked, broadly roundish-ovate, acute, rounded at the base; peduncles irregularly branched, divaricating, many-flowered; calyx glabrous, a little shorter than the petals; ovary containing about 8 seeds. ⊙. H. Native on the shores of the Pacific ocean, near Lima in Peru. Differing from *D. cordàta* in the peduncles being irregularly branched, with longer pedicels. Petals exceeding the calyx, as well as the style being longer. Plant rather glaucous, diffuse. Petals white.

Divaricated-peduncled Drymaria. Fl. July, Sept. Pl. ½ ft.

Cult. *Drymària* is a genus of chickweed-looking plants, consequently not worth cultivating, except in botanical gardens. They only require to be sown in pots in the spring, and placed in a hot-bed. In the month of May they may be planted out in the open border in a warm situation. If kept in a stove most of them will prove perennial. A sandy soil suits them best.

XXX. SCHI'EDEA (William Schiede, a German botanist now in Mexico). Cham. in Schlecht. Linnæa. 1. p. 45.

Lin. syst. *Decándria, Trigýnia.* Calyx of 5 permanent sepals. Petals 5, minute, bifid, permanent, shorter than the calyx. Stamens 10. Styles 3, stigmatose on the inside. Capsule sessile, 1-celled, 3-valved, opening nearly to the base with a seminiferous nerve in the middle of each valve. Seeds 10-12, orbicular, emarginate. A branched, knotted, bifurcate shrub, about 3 feet high. Leaves small, opposite, connate at the base. Flowers small, white, in panicles.

1 S. ligustri'na (Cham. l. c. 1. p. 46.). ♄. G. Native of the Sandwich Islands, particularly in O Wahu.

Privet-like Schiedea. Shrub 3 feet.

Cult. This shrub will grow in a mixture of loam and sand, and young cuttings will strike root under a hand-glass.

XXXI. STELLA'RIA (from *stella*, a star, because of the stellate disposition of the petals). Lin. gen. no. 773. Gært. fruct. 2. t. 130. f. 3. D. C. prod. 1. p. 396.

Lin. syst. *Octo-Decándria, Trigýnia.* Calyx 5-parted. Petals 5, bifid. Stamens 10, or from abortion only 3-8. Styles 3. Capsules 1-celled, 6-valved at the apex, many-seeded.

1 S. ne'morum (Lin. spec. 603.) lower leaves cordate, stalked, upper ones ovate or lanceolate, almost sessile; panicles repeatedly forked; petals twice as long as the calyx; seeds orbicular, compressed, with a tubercled margin. ♃. H. Native of many places in Europe in moist woods and in the neighbourhood of springs. In the north of England and in the Lowlands of Scotland. Smith, engl. bot. t. 92. Fl. dan. 271. Alsine némorum, Schreb. spic. 30. Root slender, creeping. Stems straggling, with a few hairs. Leaves pale-green. Flowers numerous, white.

Grove Stitchwort. Fl. May, June. Britain. Pl. straggling.

2 S. cuspida'ta (Willd. herb. ex Schlecht. berl. mag. 1816. p. 196.) stems dichotomous, glabrous; leaves stalked, ovate-oblong, acuminated, cordate, membranaceous, glabrous; peduncles from the wings; calyx pilose, ciliated at the base, clammy; ovary containing about 30 seeds. ♃. H. Native of South America in groves in the province of Quito as well as in Chili. H. B. et Kunth, gen. et spec. amer. 6. p. 27. Very like *Stellària némorum*. Plant straggling, pale green. Flowers white.

Cuspidate-leaved Stitchwort. Fl. May, June. Pl. straggling.

3 S. saxi'fraga (Bert. pl. ital. rar. ed. 1. p. 55. no. 4.) plant pubescent, diffuse; leaves sessile, ovate, acute, dilated at the base, rough; panicles dichotomous; peduncles terminal, generally in threes, lateral ones furnished with bracteas; sepals narrow-lanceolate, one-half shorter than the petals; seeds rather kidney-shaped, rough. ♃. H. Native of Italy on the Peak of Sagra in the Alps of Appuanus. Flowers white.

Saxifrage Stitchwort. Fl. May, June. Pl. diffuse.

4 S. corda'ta (Willd. herb. ex Schlecht. berl. mag. 1813. p. 179.) leaves roundish-cordate; peduncles axillary. ♃. H. Native of South America near Caripe. Flowers white.

Cordate-leaved Stitchwort. Pl. trailing?

5 S. virga'ta (Ser. mss. in D. C. prod. 1. p. 396.) plant glabrous; stem upright, dichotomous; leaves ovate-cordate, 3-nerved; flowers terminal, 3 or 4 in an umbel, on short peduncles; sepals oblong, bluntish, with scarious margins, much longer than the corolla; styles very short. ♃. H? Native of? Alsine virgàta, Deless. herb.

Twiggy Stitchwort. Pl. ½ foot.

6 S.? arista'ta (Ser. mss. in D. C. prod. 1. p. 396.) stems tufted, dichotomous; leaves ovate, awned at the apex, ciliated at the base, spreading; flowers cymose, stalked; sepals lanceolate, shorter than the corolla; petals bidentate; stamens 5; ovary ovate; style 1; stigmas 3. ♃. H. Native of Mexico. Alsine? aristàta. Moc. et Sesse, pl. ined. icon. Flowers white.

Awned-leaved Stitchwort. Fl. June, July. Pl. ½ foot.

7 S. ra'dians (Lin. spec. 603.) stem dichotomous; leaves lanceolate, acute, somewhat serrulated; petals 5-parted, twice as long as the calyx. ⊙? H. Native of Siberia in bogs. Poir. dict. 7. p. 416. Wikstroem, acad. handl. 1822. Flowers white. Leaves hairy, veined.

Var. β, *uniflòra* (D. C. prod. 1. p. 396.) stem simple, 1-flowered.—Amm. stirp. ruth. t. 10.

Radiant Stitchwort. Fl. June, July. Pl. ¼ to ½ foot.

8 S. villòsa (Poir. dict. 7. p. 416. but not of Schlecht.) stems and peduncles hairy; leaves sessile, ovate-lanceolate, pubescent; flowers on long stalks, somewhat panicled, terminal; petals much longer than the calyx. ♃. S. Native of the island of Bourbon. Flowers white.

Villous Stitch-wort. Pl. ½ foot.

9 S. latifòlia (Pers. ench. 1. p. 501.) stems diffuse, forked, rooting a little at the base; leaves ovate, lower ones stalked, rather cordate, upper ones sessile; pedicels axillary, younger ones crowded into umbels; fruit-bearing ones reflexed; petals shorter than the calyx; seeds disciform, rough. ⊙. H. Native about Montpelier, and of Germany, in watery places. D. C. fl. fr. suppl. 5. p. 614. Stellària Cerástium, Lin. syst. veg. ed. 15. p. 452. Flowers white.

Broad-leaved Stitchwort. Fl. June, Aug. Clt. 1816. Pl. 1 foot.

10 S. Jamesònii (Torrey in ann. lyc. new york, vol. 2. 1827.) plant clothed with clammy pubescence; leaves lanceolate, somewhat falcate, sessile, acute; stem rather branched, yellow; flowers loosely panicled, divaricate; petals 2-lobed, about twice the length of the oblong, acute sepals. ♃. H. Native of North America on the Rocky Mountains.

Jameson's Stitchwort. Pl. ½ foot.

11 S. lanceola'ta (Poir. dict. 7. p. 416.) leaves lanceolate, oblong, acute; panicle pubescent; sepals longer than the corolla. ♃? H. Native of the Straits of Magellan. Flowers white.

Lanceolate-leaved Stitchwort. Pl. ½ foot.

12 S. me'dia (With. 418. Smith, engl. bot. t. 537.) stems procumbent, with an alternate hairy line on one side; leaves ovate; peduncles solitary, axillary; fruit-bearing ones deflexed; capsules profoundly 6-valved, scarcely longer than the calyx; seeds somewhat kidney-shaped, rough. ⊙. H. Common every where throughout the world in waste and cultivated grounds. Alsine mèdia, Lin. spec. 389. Curt. fl. lond. fasc. 1. t. 20. Lam. ill. t. 214. Fl. dan. t. 438 and 525. Stamens 3-5 or 10. Plant pale-green. Petals white. Small birds and poultry eat the seeds and whole herb. The latter may be boiled for the table like spinach.

Var. β, *Javénsis* (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 647.) stem procumbent, with an obverse lateral villous alternate line; leaves ovate, smooth, veinless, upper ones sessile; pedicels axillary, and are as well as the calyxes hairy; young pedicels umbellately aggregate; fructiferous ones reflexed; petals bifid, shorter than the calyx; seed rather reniform, wrinkled.

Intermediate Stitchwort or common Chickweed. Fl. March, Nov. Britain. Pl. trailing.

13 S. mono'gyna (D. Don, prod. fl. nep. 215.) stamens 5; stem much branched, procumbent, glabrous, bearded at the joints; leaves roundish, nerved, glabrous, stalked; umbels dichotomous, stalked; style simple, crowned by 3 stigmas. ⊙. H. Native of Nipaul. Flowers white.

One-styled Stitchwort. Fl. June, July. Pl. trailing.

14 S. rotundifòlia (Poir. dict. 7. p. 416.) leaves stalked, round, thickish, 3-nerved, rather mucronate; panicle terminal, with twiggy branches; corolla longer than the sepals.—Native of the Straits of Magellan. Perhaps a species of *Drymària*?

Round-leaved Stitchwort. Fl. June. Pl. trailing.

15 S. cilia'ta (Vahl. in herb. Juss. Pers. ench. 1. p. 503. but not of Kunth, nor Scop.) leaves cordate, acute, small, on short footstalks, which are ciliated; flowers axillary, solitary; petals hardly exceeding the calyx.—Native of Peru. Petals white.

Ciliated-footstalked Stitchwort. Pl. trailing.

16 S. dicho'toma (Lin. spec. 603. but not of Willd. herb.) plant hairy; leaves cordate, ovate, half stem-clasping; stems dichotomous; flowers solitary; fruit-bearing peduncles reflexed; sepals lanceolate, acute, exceeding the petals. ⊙? H. Native of Siberia on the Alps. Smith, icon. ined. 1. p. 14. t. 14. Petals white.

Dichotomous-stemmed Stitchwort. Fl. year. Pl. 1 foot.

17 S. pu'bera (Michx. fl. bor. amer. 1. p. 273.) plant downy; leaves oval, ciliated; pedicels erect, shortish; sepals ovate; petals longer than the calyx. ♃. H. Native of North America from Pennsylvania to North Carolina in shady woods on rich soil. Flowers large, white.

Downy Stitchwort. Fl. May, June. Pl. trailing?

18 S. bulbòsa (Wulf. in Jacq. coll. 3. p. 21. icon. rar. 3. t. 468.) leaves broad, ovate, lanceolate, veinless on the under surface; stem rather branched; peduncles 1-flowered; sepals lanceolate, acute, shorter than the petals; root filiform, creeping, bearing bulbs. ♃. H. Native of Carinthia on the Alps in shady moist places. Petals white. Anthers at first red, then black.

Bulbous-rooted Stitchwort. Fl. May, June. Clt. 1823. Pl. ¼ to ½ foot.

19 S. vi'scida (Bieb. fl. taur. 1. p. 342.) plant villous, clammy; leaves linear-lanceolate; stems dichotomous erect; petals longer than the calyx; capsules rather cylindrical, twice as long as the lanceolate sepals. ⊙. H. Native of Hungary, Tauria, and Caucasus, in fields. Cerástium anómalum, Willd. spec. 2. p. 812. Waldst. et Kit. hung. 1. t. 22. Petals white. This is probably a species of *Mœ'nchia*.

Var. β, *glabriúscula* (Bieb. fl. taur. suppl. p. 307.) smoothish.

Viscid Stitchwort. Fl. Ju. July. Clt. 1820. Pl. ¼ to ½ ft.

20 S. sabulòsa (Fisch. in litt. D. C. prod. 1. p. 397.) plant villous, clammy; leaves linear, very narrow; stems dichotomously-panicled; petals hardly longer than the calyx; capsules rather cylindrical, almost twice the length of the lanceolate sepals. ⊙? H. Native of Persia about Lenk-heran. Perhaps only a variety of *S. dùbia* of Bast? Petals white.

Gravel Stitchwort. Pl. ¼ to ½ foot.

21 S. du'bia (Bast. suppl. p. 24. D. C. fl. fr. suppl. p. 614.) leaves linear, glabrous, rather ciliated on the margins; stem erect; peduncles erect; sepals 3-nerved. ⊙. H. Native of France. Cerástium arvénse trígynum, Bast. fl. Maine et Loire, p. 163. Petals white.

Doubtful Stitchwort. Pl. ½ foot.

22 S. monospe'rma (Hamilt. mss. in D. Don, fl. prod. nep. p. 215.) leaves broadly lanceolate, acuminated, sessile, and are glabrous, as well as the erect stem; panicle terminal, trichotomous, many-flowered; calyx glabrous, obtuse, shorter than the

corolla; capsules 1-seeded. ♃. H. Native of Nipaul at Narainhetty. S. crispàta, Wall. in litt. Of all the species of *Stellària* this is the largest. Leaves 6 inches long, and an inch or an inch and a half broad. Panicle large, divaricating, many-flowered. Flowers white, and about the size of those of *S. Holóstea*.

One-seeded Stitchwort. Fl. Oct. Pl. 1½ to 2 feet.

23 S. pa'tens (D. Don, fl. prod. nep. p. 215.) leaves linear-lanceolate, acute, sessile, and are as well as the decumbent stem villous; peduncles axillary, trichotomous, few-flowered; sepals acute, glabrous, about the length of the petals. ♃. H. Native of Nipaul. S. longifòlia, Wall. mss. Flowers white.

Spreading Stitchwort. Pl. decumbent.

24 S. holo'stea (Lin. spec. 711.) leaves lanceolate, acuminated, serrulated, rather scabrous, upper ones broader and shorter than the lower ones; peduncles long, filiform; petals inversely heart-shaped, longer than the lanceolate acute sepals. ♃. H. Native throughout Europe in groves, thickets, and dry hedge bottoms. Smith, engl. bot. t. 511. Curt. lond. fasc. 2. t. 30. Fl. dan. 698. Stems square; they stick by their rough angles and the edges of the leaves to any thing that comes in their way. Flowers large, white, panicled. Plant glaucous. Root creeping.

All bone or Greater Stitchwort. Fl. May. Britain. Pl. 1 to 2 feet.

25 S. Laxma'nni (Fisch. in litt. D. C. prod. 1. p. 397.) stem erect, few-flowered; leaves linear, acute, entire, almost glabrous; peduncles filiform, long; petals 2-lobed, almost double the length of the acute lanceolate sepals. ♃? H. Native of Eastern Siberia. Flowers white.

Laxmann's Stitchwort. Fl. May. Clt. 1823. Pl. ½ foot.

26 S. veluti'na (Ser. mss. in D. C. prod. 1. p. 397.) plant clothed with soft hairs; leaves oblong-linear, distant; peduncles long, filiform; petals 2-lobed, longer than the oblong sepals. ♃. H. Native of Siberia? S. móllis, Fisch. in litt. but not of Schlecht. Flowers white.

Velvety Stitchwort. Fl. June, Aug. Clt. 1824. Pl. ½ to 1 ft.

27 S. saxa'tilis (Hamilt. mss. in D. Don, fl. prod. nep. p. 215.) leaves flat, elliptical-oblong, and are as well as the erect stem tomentose; peduncles axillary, trichotomous, many-flowered; sepals acuminated, tomentose, longer than the corolla. ♃. H. Native among stones at Bheempedi in Nipaul. Flowers white.

Stone Stitchwort. Fl. April, May. Pl. 1 foot.

28 S. grami'nea (Lin. spec. 604.) leaves linear, with smooth margins; stems diffuse; flowers panicled, spreading; petals length of or longer than the calyx. ♃. H. Native nearly throughout Europe in heathy pastures, in bushy places, on a gravelly or sandy soil, and the margins of woods; also in Unalaschka, (Cham.) Smith, engl. bot. 803. Fl. dan. 414. S. arvénsis, Hoffm. germ. for 1791. p. 152. Plant green, not glaucous. Petals white. Anthers reddish.

Grassy or Lesser Stitchwort. Fl. May. Britain. Pl. 1 foot.

29 S. Friesia'na (Ser. mss. D. C. prod. 1. p. 397.) leaves linear, channelled with the margins and keels rough, and base ciliated; stem flaccid; peduncles solitary; calyx nerveless, equal in length to the petals. ♃. H. Native of Smoland at Fremsjo. S. longifòlia, Fries. in Billb. svensk. bot. ex Spreng. neue. entd. 3. p. 217. but not of Muhl. in Willd. enum.

Fries's Stitchwort. Fl. May, June. Pl. ½ foot.

30 S. glau'ca (With. bot. arrang. 1. p. 420.) plant glaucous; leaves linear-lanceolate, with smooth margins, floral ones scarious; petals twice as long as the calyx; peduncles partly scattered; stem erectish, weak. ♃. H. Native almost throughout Europe in moist meadows, bogs, and the margins of ditches and ponds, where the soil is gravelly. Plentiful in Britain. Smith, engl. bot. t. 825. S. palústris, Retz. prod. 106. S. mèdia, Sibth. 141. S. gramínea β, Lin. spec. 604. Petals white. Anther pale-red.

Glaucous Stitchwort. Fl. June, July. Britain. Pl. ¾ foot.

31 S. falca'ta (Ser. mss. in D. C. prod. 1. p. 398.) plant downy; stem firm, branched at the base; leaves linear, falcate, stiff, numerous; flowers somewhat corymbose; peduncles long, thickish; sepals lanceolate, somewhat keeled, shorter than the petals. ♃. H. Native on the eastern shore of Lake Baical, and in Dahuria. Petals white.

Sickle-leaved Stitchwort. Fl. June, July. Pl. 1 foot.

32 S. Edwa'rdsii (Rr. Br. in app. to Parry's voy. p. 13.) leaves ovate-lanceolate, quite entire, nerveless, shining; peduncles terminal, 1-flowered or trifid: petals longer than the 3-nerved calyx; anthers purple. ♃. H. Native of Melville Island, Chester Inlet. Hook. fl. bor. amer. p. 96. t. 31. There are two varieties of this plant with 1 or 3-flowered peduncles, hairy, and smooth stems.

Edwards's Stitchwort. Fl. June, July. Pl. ½ foot.

33 S. ni'tida (Hook. in Scorsby, greenl. p. 411.) leaves lanceolate, rather 3-nerved; flowers somewhat panicled; anthers yellow. ♃. H. Native of Greenland and Eschscholtz Bay.

Shining Stitchwort. Pl. ¼ to ½ foot.

34 S. stri'cta (Richard in Frankl. 2nd journ. ed. 2. append. p. 15. Hook. fl. bor. amer. p. 90.) plant erect, shining, or rather glaucous; leaves linear, awl-shaped, erect, stiff; panicle terminal; petals linear, longer than the crenate, 2-nerved sepals; anthers purple. ♃. H. Native of North America from Lake Winepeg to the Bear Lake, and from Hudson's Bay to the Rocky Mountains. S. pubéscens, Rich. in Frankl. 1st journ. ed. 1. app. no. 164. Stem pubescent, pilose.

Var. β; stem smooth. S. pubéscens β, Richard. l. c.

Var. γ; upper leaves glaucous.

Straight Stitchwort. Pl. ½ foot.

35 S. crassifòlia (Ehrh. beitr. 3. p. 60.) leaves ovate-lanceolate, thickish, entire, smooth; peduncles solitary from the forks of the stem. ♃. H. Native of Germany and Siberia in moist meadows. Plant glaucous.

Thick-leaved Stitchwort. Fl. May, June. Clt.? Pl. ½ to 1 foot.

36 S. brevifòlia (Schum. pl. zeel. p. 142.) leaves lanceolate; peduncles solitary, axillary, longer than the leaves; petals cleft beyond the middle, about the length of the sepals. ♃. H. Native of Zealand by the sea-side. Œder. fl. dan. t. 415. Flowers white.

Short-leaved Stitchwort. Fl. May, June. Pl. ½ to 1 foot.

37 S. aqua'tica (Poll. pal. no. 422. but not of Scop.) leaves elliptic-lanceolate, entire, with a callous tip; petals profoundly 2-parted, shorter than the calyx; capsules ovate-oblong, a little longer than the calyx; stems weak. ⊙. H. Native throughout Europe, and in the island of Unalaschka, also in Britain, in rivulets, springs, and watery spots. S. uliginòsa, Murr. comm. gött. 55. Smith, engl. bot. 1074. Curt. lond. fasc. 6. t. 28. S. gramínea γ, Lin. fl. suec. ed. 2. p. 150. S. hypericifòlia, Wiggers Holsat. 34. S. Dilleniàna, Leers, 107. S. lateriflòra, Krok. siles. 2. p. 52. t. 4. S. fontàna, Jacq. coll. 1. p. 327. S. Alsìne, Hoffm. fl. germ. for 1791. p. 153. t. 5. Larbrèa aquática, St. Hil. Herb smooth, somewhat glaucous. Stems square. Flowers small, white, in irregular lateral and terminal panicles. This is probably the *Larbrèa aquática* of St. Hil. but whether the stamens are perigynous in the British plant we have not materials at present to decide.

Water or Bog Stitchwort. Fl. June. Britain. Pl. ¼ foot.

38 S. undula'ta (Thunb. fl. jap. p. 185.) leaves oblong, acute, undulate, length of the spaces of stem between the leaves; flowers axillary and terminal; peduncles capillary, longer than

the leaves; calyx glabrous; stem decumbent, herbaceous. ♃ ? H. Native of Japan. Petals white. Peduncles 2-3 together.

Undulate-leaved Stitchwort. Pl. decumbent.

39 S. TETRA'GONA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 647.) leaves lanceolate, acuminated, undulated, sessile; peduncles 1-flowered, axillary, umbellately aggregate; sepals lanceolate, acuminated, twice the length of the petals; stem herbaceous, tetragonal. ♃. S. Native of Java. Flowers white. Allied to *S. undulàta*.

Square-stemmed Stitchwort. Pl. 1 foot.

40 S. CERASTIOI'DES (Lin. spec. 604.) leaves oblong, bluntish, glabrous; stems with a hairy lateral line; peduncles downy, in pairs, 1-flowered, fruit-bearing ones deflexed; petals larger than the calyx; capsules oblong, almost twice as long as the obtuse sepals, which have a single hairy line; stems tufted, procumbent, rooting. ♃. H. Native of humid grassy places, on the Alps of Europe and the Pyrenees. In the Highlands of Scotland; on Ben Nevis, on the mountains to the north of Invercauld, and on the mountains about Killin. Smith, engl. bot. t. 911. Fl. dan. 96. Cerástium trígynum, Vill. delph. 3. p. 645. t. 96. Cerástium refráctum, All. ped. no. 1728. Cerástium stellarioìdes, Hartm. Flowers small, white. Stamens 8 or 10, when the styles are more than their proper number.

Var. β, triflòra (D. C. prod. 1. p. 398.) leaves broader, numerous, glabrous. ♃. H. Native of Carinthia on the Alps. S. cerastioìdes, Wulf. in Jacq. coll. 1. p. 254. t. 19. S. multicaúlis, Jacq. Stem erect. Peduncles 2-3 together.

Chickweed-like Stitchwort. Fl. June. Scotland. Pl. creeping.

41 S. LÆ'TA (Richards. in Frankl. 1st jour. ed. 2. app. p. 16.) stem erect, and is as well as the leaves quite smooth, glaucous; leaves linear-lanceolate, keeled, acute; peduncles subgeminate, terminal; petals a little longer than the obscurely 3-nerved, smooth, or pubescent calyx. ♃. H. Native of Arctic America from the great Bear Lake to the shores of the Arctic sea and on the Rocky Mountains. Leaves erect. Anthers white, or when dry, yellowish-brown.

Fruitful Stitchwort. Pl. decumbent.

42 S. GRA'CILIS (Richards. ex Spreng. syst. app. 1. p. 180.) stem slender, quadrangular, and are, as well as the lanceolate leaves, nerveless and very smooth; sterile branches terminated by a leafy bud; flowers solitary, nearly terminal; sepals 3-nerved, rather shorter than the calyx. ♃. H. Native of Hudson's Bay.

Slender Stitchwort. Pl. ½ foot.

43 S. HUMIFU'SA (Swartz, nov. act. holm. 1787. p. 111. t. 4. f. 1.) leaves ovate, rather leaning to one side, sessile; stems procumbent, square; peduncles solitary, short; sepals ovate, obtuse, with membranaceous margins, scarcely equalling in length the corolla; petals profoundly 2-parted. ♃. H. Native of Sweden and Norway. Vahl. fl. dan. t. 978. Petals white.

Trailing Stitchwort. Fl. My. Ju. Clt. 1816. Pl. procumbent.

44 S.? GRŒNLA'NDICA (Retz, prod. fl. scand. ed. 2. no. 552.) leaves linear, a little ciliated at the base, rather fleshy; petals emarginate; sepals very blunt; fruit globose; stems decumbent, 2-flowered. ♃. H. Native of Greenland. This plant is perhaps referable to the genus *Arenària*.

Greenland Stitchwort. Fl. June. Pl. decumbent.

45 S. MARGINA'TA (Cham. in Schlecht. Linnæa. 1. p. 50.) tufted, densely leafy, smooth; leaves ovate-lanceolate, connate at the base, with cartilaginous margins, hooked at the apex; flowers solitary, axillary; petals and capsule equal in length with the calyx. ♃. H. Native of North-west America in St. Schischmareff Bay. Petals white, equalling the calyx in length. An elegant procumbent smooth species.

Marginated-leaved Stitchwort. Pl. procumbent.

46 S. CRI'SPA (Cham. in Schlecht. Linnæa. 1. p. 51.) smooth; stem diffuse; leaves on very short petioles, ovate, acuminated with repandly waved margins; flowers solitary, axillary; petals much shorter than the calyx; capsule equalling the calyx. ♃ ? H. Native of Unalaschka. Stem tetragonal, decumbent. Flowers the size of *Arenària trinérvia*.

Curled Stitchwort. Pl. decumbent.

47 S.? ARENA'RIA (Lin. spec. 604.) leaves spatulate; stem erect, bifid, clammy, with alternate branches; petals emarginate. ⊙. H. Native of Spain. This plant is also perhaps referable to the genus *Arenària*. Petals white.

Sand Stitchwort. Fl. June, July. Clt. 1799. Pl. ½ foot.

48 S. SOAPI'GERA (Willd. spec. 2. p. 716.) stems angular, erect; leaves linear-lanceolate, much crowded, with rough margins, and ciliated at their base; peduncles elongated, filiform, 1-flowered, and disposed in something like umbels; petals deeply divided, about the length of the calyx; sepals lanceolate, 3-nerved, ciliated. ♃. H. Native of Scotland by sides of rivulets on the mountains; in Perthshire, and about Loch Nevis, Inverness-shire. Smith, engl. bot. t. 1269. Don, herb. brit. 10. Petals white.

Scape-bearing Stitchwort. Fl. June, July. Scotland. Pl. ¼ ft.

49 S. FISCHERIA'NA (Ser. mss. in D. C. prod. 1. p. 398.) leaves lanceolate, acute, distant, smoothish; peduncles in pairs, very long, capillary; petals hardly equalling the calyx in length; sepals lanceolate, 1-nerved. ♃. H. Native of Siberia. Very like *S. scapígera*, according to Fischer. Flowers white.

Fischer's Stitchwort. Fl. June. Pl. ¼ foot.

50 S. FLO'RIDA (Fisch. in litt. D. C. prod. 1. p. 399.) leaves lanceolate, acute, firm, ciliated; peduncles terminal and lateral, very long, and generally solitary, stiff; petals exceeding the calyx; sepals lanceolate, somewhat 3-nerved; capsules exceeding the calyx, with rather revolute valves. ♃ ? H. Native of Kamtschatka. Flowers white.

Florid Stitchwort. Pl. ¼ foot ?

51 S. PALLASIA'NA (Ser. mss. in D. C. prod. 1. p. 399.) leaves ovate, sessile, and are as well as the forked stems pubescent; fruit-bearing peduncles reflexed, almost double the length of the leaves. ♃ ? H. Native of Siberia. S. dichótoma, Willd. herb. ex Schlecht. berl. mag. 1816. p. 194. but not of Lin. Flowers white.

Pallas's Stitchwort. Pl. ¼ foot.

52 S. STEPHANIA'NA (Willd. herb. ex Schlecht. berl. mag. 1816. p. 194.) leaves ovate-lanceolate, acuminated, sessile, and are as well as the forked stems villous; flowers axillary, solitary, and terminal; fruit-bearing peduncles erectish, length of leaves. ♃ ? H. Native of Siberia. Very like *S. dichótoma*, but every part is much smaller. Flowers white.

Stephan's Stitchwort. Pl. ¼ foot.

53 S. SCHLECHTENDALIA'NA (Ser. mss. in D. C. prod. 1. p. 399.) leaves ovate, cordate, clasping the stem, and are as well as the forked stems villous; flowers solitary, axillary, and terminal, on short stalks; fruit-bearing peduncles reflexed. ♃ ? H. Native of Siberia. S. villòsa, Willd. herb. ex Schlecht. berl. mag. 1816. p. 194. but not of Poir.

Schlechtendahl's Stitchwort. Pl. ½ foot.

54 S. RUSCIFÒLIA (Pall. Willd. herb. ex Schlecht. berl. mag. 1816. p. 194.) leaves ovate-cordate, glabrous, acute, clasping the stem, marginated; flowers axillary, solitary, and terminal, or somewhat aggregate, on long peduncles. ♃ ? H. Native of Siberia. Flowers white.

Butcher's Broom-leaved Stitchwort. Pl. ½ foot.

55 S. DIFFU'SA (Willd. herb. ex Schlecht. berl. mag. 1816. p. 195.) leaves linear, acutish, glabrous; stems creeping, diffusely branched; panicle dichotomous, axillary, naked. ♃ ? H. Native of Siberia. Flowers white.

Diffuse-branched Stitchwort. Pl. creeping.

56 S. subula'ta (Bœber. herb. ex Schlecht. berl. mag. 1816. p. 195.) leaves linear, bluntish; flowers corymbose; petals one-half shorter than the awl-shaped sepals. ♃ ? H. Native of Siberia. Petals white.

Awl-shaped-sepalled Stitchwort. Pl. diffuse.

57 S. Dahu'rica (Willd. herb. ex Schlecht. berl. mag. 1816. p. 195.) leaves lanceolate, very entire, sessile, acute, pubescent at the base as well as the stems; flowers axillary, solitary; peduncles twice the length of the leaves. ♃ ? H. Native of Dahuria. Very like *S. diffùsa*, but the leaves are broader and the flowers solitary and larger. Petals white.

Dahurian Stitchwort. Fl. June, July. Clt. 1818. Pl. ½ ft.

58 S. Mosque'nsis (Bieb. in Willd. herb. ex Schlecht. berl. mag. 1816. p. 195.) leaves linear-awl-shaped, shorter than the spaces of the stems between the leaves; flowers in panicles. ♃ ? H. Native of Russia near Moscow. Petals white.

Moscow Stitchwort. Pl. ½ foot?

59 S. serpyllifòlia (Willd. herb. ex Schlecht. berl. mag. 1816. p. 26.) stems much branched, procumbent; leaves on short footstalks, ovate, acute, and somewhat mucronate, rounded at the base, thickish, with the margin as well as the middle nerve on the under surface ciliated; calyx pubescent; ovary containing about 25 seeds. ♃. H. Native of South America in the frigid plains of mount Antisana at the height of 6300 feet. Flowers white, generally terminal. H. B. et Kunth, nov. gen. et spec. amer. 6. p. 25.

Wild-Thyme-leaved Stitchwort. Pl. procumbent.

60 S. recurva'ta (Willd. herb. ex Schlecht. berl. mag. 1816. p. 196.) stems diffuse; leaves stalked, ovate-oblong, acute, mucronated, 1-nerved, thickish, keeled, recurved; nerve on the under surface, hairy; calyx glabrous; ovary containing about 40 seeds. ♃. H. Native of New Granada in cold places at the height of 3480 feet. H. B. et Kunth, nov. gen. et spec. amer. 6. p. 26. Flowers white.

Recurved-leaved Stitchwort. Pl. ½ foot.

61 S. ova'ta (Willd. herb. ex Schlecht. berl. mag. 1816. p. 196.) stems diffuse, rather pilose; leaves stalked, somewhat rhomboidal, ovate, acute and somewhat mucronate, membranaceous, ciliated; fruit-bearing peduncles diverging, reflexed; hairy at the base; capsules containing about 20 seeds. ♃. H. Native of South America in shady places near Caripe. H. B. et Kunth, nov. gen. et spec. amer. 6. p. 26. S. ciliàta, Willd. herb. ex Kunth, l. c. Petals white.

Ovate-leaved Stitchwort. Pl. procumbent.

62 S. elonga'ta (Nutt. gen. amer. 1. p. 289.) stem diffuse, procumbent, pubescent; leaves oblong-lanceolate, mucronulate; peduncles lateral, solitary, very long; flowers apetalous. ♃ ? H. Native of Carolina and Georgia.

Elongated-peduncled Stitchwort. Pl. procumbent.

63 S. longifo'lia (Muhlenb. in Willd. enum. p. 479. but not of Fries.) leaves linear, acute; panicle terminal; petals acute, 2-parted, shorter than the calyx. ♃ ? H. Native of Pennsylvania. Petals white.

Long-leaved Stitchwort. Fl. June, July. Clt.? Pl.?

64 S. mura'lis (Link. enum. 1. p. 459.) plant covered with glandular pubescence; leaves ovate, fleshy, tapering into the footstalk at the base; petals cut, scarcely longer than the calyx. ☉. H. Native of Crete. Arenària muràlis, Sieb. cret. exsic. Sepals acute, nervous. This is an intermediate plant between *Stellària* and *Arenària*. Petals white.

Wall Stitchwort. Fl. June, July. Clt. 1824. Pl. procumbent.

65 S. radi'cans (Lapeyr. fl. pyr. t. 93. ex abr. p. 250.) stems terete, prostrate, rooting, many-flowered; leaves elliptical, obtuse, shining, cauline ones leaning to one side; peduncles divaricating; sepals linear, obtuse, twice as long as the petals; capsules pear-shaped. ♃. H. Native of the Pyrenees. Petals white.

Rooting-stemmed Stitchwort. Pl. prostrate.

66 S. rupe'stris (Scop. fl. carn. 1. p. 317. t. 18. f. 1.) leaves flat, 3-nerved on the under surface; stems villous, few-flowered; petals ovate, acuminated, shorter than the calyx. ♃ ? H. Native of the alps of Carniola. Petals white.

Rock Stitchwort. Pl. trailing.

67 S. e'legans (Ser. mss. in D. C. prod. 1. p. 400.) stems prostrate at the base; leaves elliptical, small, glabrous; flowers dichotomously panicled; peduncles twice as long as the calyx, rather downy; sepals lanceolate, acute, smoothish, with somewhat membranaceous margins; petals twice the length of the calyx. ♃. H. Native of Siberia and the Altaian mountains. Cerástium élegans, Fisch. in litt. Petals white.

Elegant Stitchwort. Fl. May, Jul. Clt. 1820. Pl. prostrate.

68 S. lo'ngipes (Goldie. plant. canad. in edinb. phil. journ. apr. 1822.) plant very smooth; leaves linear-lanceolate; peduncles terminal, dichotomously branched, furnished with bracteas; pedicels very long; petals broad, obovate, 2-parted, hardly longer than the sepals, which are 3-nerved. ♂ ? H. Native of North America in woods near Lake Ontaria, and about Mackenzie River and Bear Lake. Petals white.

Long-pedicelled Stitchwort. Fl. June, July. Clt. 1820. Pl. ½ foot.

Cult. None of the species of *Stellària* are worth cultivating for ornament except the *S. Holóstea*, which makes a very pretty border-flower. Most of the species require to be grown in moist shady situations, several of the smaller kinds require to be grown in pots in a mixture of loam and sand, particularly *S. scapígera* and *S. cerastioìdes*, &c. The perennial herbaceous species are easily increased by dividing the plants at the root; and the annual ones only require to be sown in the open border. None of the species require any particular care. The South American kinds require shelter during winter.

XXXII. ARENA'RIA (from *arena*, sand, in which most of the species are found). Lin. gen. no. 774. Gært. fruct. 2. p. 130. f. 9. D. C. prod. 1. p. 400.

Lin. syst. *Penta-Decándria, Trigýnia.* Calyx of 5 sepals. Petals 5, entire. Stamens 10, or from abortion fewer. Styles 3. Capsules 1-celled, opening by 3 or 6 teeth at the apex, many-seeded. Small grassy or chickweed-looking alpine plants without stipulas.

§ 1. *Leaves grassy.*

1 A. graminifo'lia (Schrad. hort. gœt. t. 5. neu. journ. 1810. 2. p. 139.) stems erect, simple; leaves long, awl-shaped, filiform, scabrous on the margins from serratures; panicle trichotomous, pubescent, lax; sepals very blunt, 6 times shorter than the obovate petals. ♃. H. Native of Caucasus in fields. Bieb. fl. taur. suppl. no. 852. A. filifòlia, Bieb. fl. taur. no. 852. p. 344. but not of Vahl. Flowers white.

Var. β, glabérrima (D. C. prod. 1. p. 402.) panicle glabrous, many-flowered; flowers larger. A. graminifòlia, Willd. enum. p. 481. ex Bieb. l. c. Flowers white.

Grass-leaved Sandwort. Fl. June, July. Clt. 1817. Pl. ½ to ¾ foot.

2 A. longifo'lia (Bieb. fl. taur. 1. p. 345. suppl. 308.) leaves awl-shaped, filiform, serrulated; stems erect, simple; panicle trichotomous, glabrous, crowded; sepals ovate, obtuse, not half the length of the obovate petals. ♃. H. Native of Siberia on the Lower Volga.—Gmel. sib. 4. p. 157. no. 65. t. 63. f. 2. Very like *A. graminifòlia*, but the flowers are smaller, and more numerous, and the sepals are narrower and keeled. Flowers white.

Long-leaved Sandwort. Fl. Ju. Jul. Clt. 1823. Pl. ½ to ¾ ft.

3 A. Dahu'rica (Fisch. in litt. D. C. prod. 1. p. 402.) leaves awl-shaped, filiform, serrulated; stems erect, simple; panicle dichotomous, few-flowered; peduncles and calyxes covered with clammy down; sepals lanceolate-linear, nerved, hardly equal in length with the petals. ♃. H. Native of Dahuria. Flowers white.

Dahurian Sandwort. Fl. Ju. Jul. Clt. 1824. Pl. ½ foot.

4 A. cucubaloi'des (Smith, icon. ined. 1. p. 17. t. 17.) leaves awl-shaped, filiform, serrulated; stems erect, simple; panicle dichotomous, rather lax; sepals lanceolate, acute; petals obovate, twice the length of the calyx. ♃. H. Native of Armenia. Calyx clammy. Flowers white.

Cucubalus-like Sandwort. Fl. June, July. Pl. 1 foot

5 A. otitoi'des (Adams, ex Fisch. in litt. D. C. prod. 1. p. 402.) leaves awl-shaped, filiform, serrated; stems erect, simple; panicle dichotomous, crowded, many-flowered; sepals lanceolate, keeled, scarcely longer than the obovate petals; styles protruding a great length. ♃. H. Native of Siberia. Very like *A. graminifòlia* in the stems and leaves, but the flowers are very small, more numerous, and more densely crowded. Flowers white.

Otites-like Sandwort. Fl. June, July. Clt. 1820. Pl. ½ to ¾ foot.

6 A. Holo'stea (Bieb. fl. taur. 1. p. 345.) leaves awl-shaped, filiform, roughish on the margins; stems erect, simple; panicle few-flowered; sepals acuminated, nerveless, shorter than the obtuse petals. ♃. H. Native of Caucasus and Iberia. Flowers like those of *Stellària Holóstea*. Sepals green on the back, but with the margins white. Petals white.

Stitch-wort-like Sandwort. Fl. June, July. Pl. ½ foot.

7 A. ri'gida (Bieb. fl. taur. 1. p. 346. suppl. p. 309.) leaves linear-setaceous, ciliary-scabrous; stems erect, rigid, simple; panicle trichotomous, pressed together, glabrous; sepals acute, somewhat keeled, hardly exceeding the corolla. ♃. H. Native in the Ukraine in sandy places. Bracteas larger than in *A. graminifòlia* and *longifòlia*. Flowers white. A. Holóstea, Beaupre. in litt.

Rigid-stemmed Sandwort. Fl. Ju. Jul. Clt. 1823. Pl. ½ ft.

8 A. formòsa (Fisch. in litt. D. C. prod. 1. p. 402.) leaves linear-setaceous, ciliary-scabrous; stems erect, simple, and are as well as peduncles clothed with viscid hairs; panicle trichotomous, few-flowered; sepals thick, obtuse, inner ones very broad, and covered with glandular hairs on their back, one-half shorter than the obovate petals. ♃. H. Native of Dahuria. Plant habit and size of *Scheuchzèria palústris*. Flowers large, white.

Handsome Sandwort. Fl. June, July. Clt. 1824. Pl. ½ to 1 foot.

9 A. lychni'dea (Bieb. fl. taur. 1. p. 346. suppl. p. 309.) plant tufted; leaves awl-shaped, radical ones in bundles, linear-setaceous, ciliary-scabrous; stem erect, rather hispid; panicle di-trichotomous, few-flowered, divaricating after flowering; sepals ovate, rather acute, one-half shorter than the obovate petals. ♃. H. Native of Caucasus and Iberia. A. airæfòlia and setàcea; Fisch. in litt. Flowers in threes, white, about the size of those of *A. Austrìaca*. Pedicels villous.

Var. β, glàbra (D. C. prod. 1. p. 402.) plant glabrous. A. Laxmánni, Fisch. in litt.

Lychnis-like Sandwort. Fl. June, July. Pl. ½ foot.

10 A. Gmeli'ni (Fisch. in litt. D. C. prod. 1. p. 402.) leaves linear, obtuse; stems jointed; panicle trichotomous, somewhat corymbose; sepals lanceolate, green, with scarious margins; petals obovate, twice the length of the calyx. ♃. H. Native of the Ural mountains, especially on a mountain called Tagannai. —Gmel. sib. 4. p. 144. t. 61. f. 1. Flowers white, very like those of *Gypsóphila rèpens*.

Gmelin's Sandwort. Fl. June, July. Pl. ½ foot.

11 A. cephalòtes (Bieb. fl. taur. 1. p. 346. suppl. p. 309.) leaves awl-shaped, filiform, ciliary-scabrous; stems thick, erect, simple; head of flowers terminal, fascicled, hemispherical; sepals acuminated, almost equal in length with the corolla. ♃. H. Native of Tauria in fields. Bracteas striated. Flowers white. This is the most elegant species of the whole genus.

Headed Sandwort. Fl. June, July. Pl. ½ to ¾ foot.

12 A. dianthoi'des (Smith, icon. ined. p. 16. t. 16.) leaves awl-shaped, filiform, ciliary-scabrous; stems erect, simple; flowers in heads; bracteas ventricose, exceeding the peduncles; sepals ovate, obtuse; petals obovate, 3-times longer than the calyx. ♃. H. Native of Armenia. Flowers white.

Pink-like Sandwort. Pl. ½ to ¾ foot.

13 A. gypsophiloi'des (Schreb. act. nov. acad. N. C. no. 6. 4. p. 139. ex Willd. spec. 2. p. 723.) leaves linear, radical ones setaceous; panicle rather pubescent; sepals ovate, mucronate, hardish; petals lanceolate, thrice as long as the calyx. ♃. H. Native of the Levant. Flowers white.

Gypsophila-like Sandwort. Pl. ½ foot.

14 A. capilla'ris (Poir. dict. 6. p. 380.) lower leaves in tufts, very long, capillary; stem rather naked, terminated by a 3-flowered umbel; peduncles elongated, 1-flowered, capillary; bracteas membranaceous, glabrous; petals ovate, rather crenulated, twice as long as the calyx. ♃. H. Native of Siberia. A. Sibírica, Pers. ench. 1. p. 504. Flowers white.

Capillary-leaved Sandwort. Fl. June, July. Clt. 1820. Pl. ¼ to ½ foot.

15 A. pinifo'lia (Bieb. fl. taur. 1. p. 348.) stems distorted, ascending, few-flowered, pubescent; leaves setaceous, stiff, stem ones straight; sepals obtuse, striated, villous, shorter than the corolla. ♃. H. Native of the alps of Caucasus. Calyx green, with the stripes obliterated from short, rather clammy down. Petals white. Peduncles terminal, twin, much longer than the corolla.

Pine-leaved Sandwort. Fl. June, July. Clt. 1823. Pl. ½ to ¾ foot.

16 A. subula'ta (Ser. mss. in D. C. prod. 1. p. 403.) leaves setaceous, stiff, mucronated, striated, lower ones in bundles; stems panicled, few-flowered; sepals lanceolate, much shorter than the petals; capsules ovate, hardly longer than the calyx. ♃. H. Flowers white.

Var. α, glandulífera (D. C. prod. 1. p. 403.) stems, peduncles, and sepals clothed with glandular hairs; panicles 3-5-flowered. ♃. H. Native of Siberia in the regions about the Baical. A. púngens, Steph. ex Stev. in litt. A. viscòsa, Fisch. in litt. A. setàcea, Adams. ex Fisch.

Var. β. glabràta (D. C. l. c.) plant very smooth; flowers 1-3. ♃. H. Native of Eastern Siberia.

Awl-shaped-leaved Sandwort. Fl. June, July. Clt. 1822. Pl. ¼ to ½ foot.

17 A. pu'ngens (Clem. in Lag. gen. et spec. 15. but not of Steph.) leaves awl-shaped, and are as well as sepals mucronately pungent; petals longer than the calyx; styles 3-4. ♃. H. Native of Spain on the summits of the mountains in the province of Granada. Flowers white.

Pungent-leaved Sandwort. Fl. June, July. Pl. ½ foot.

18 A. Nardifo'lia (Led. Hook. fl. bor. amer. t. 32.) tufted; leaves awl-shaped, pungent; stem erect, 3-flowered; petals oblong, obtuse, twice the length of the obtuse sepals; capsule 3-valved. ♃. H. Native of North America on the Rocky Mountains, and on the north-west coast; also of Siberia. Flowers white.

Nardus-leaved Sandwort. Fl. June, July. Clt. 1827. Pl. ¼ to ½ foot.

§ 2. *Leaves awl-shaped or linear.*

19 A. SQUARRO'SA (Mich. fl. bor. amer. 1. p. 273.) plant tufted; lower leaves squarrosely-imbricated, channelled, glabrous; stems simple, few-leaved; flowers dichotomously panicled, erect; sepals ovate, roundish; petals obovate, thrice as long as the calyx; capsules oval, exceeding the calyx, 3-valved; valves obtuse. ♃. H. Native of New Jersey and Carolina in sandy pine-barrens. A. Caroliniàna, Walt. fl. carol. 141. Flowers white.

Squarrose-leaved Sandwort. Fl. July, Aug. Pl. ¼ foot.

20 A. IMBRICA'TA (Bieb. fl. taur. 1. p. 344. but not of Rafinisque) leaves linear-awl-shaped, ciliated, crowded; stems creeping, hairy; peduncles 1-flowered, terminal; petals longer than the calyx, which is bluntish, striated, and hairy; capsules 3-valved. ♃. H. Native of the alps of Caucasus near Kobi. Stev. in mem. soc. mosq. 3. p. 263. Leaves short, stiff, spreading, ciliated, in bundles in the axillæ of the older leaves. Flowers white, about the size of those of *A. laricifòlia*.

Imbricate-leaved Sandwort. Fl. Jul. Aug. Clt. 1820. Pl. ¼ ft.

21 A. JUNIPE'RINA (Lin. mant. 72.) leaves awl-shaped, stiff, spinose, lower ones in bundles, upper ones distant; stems erect, firm; sepals ovate, generally 1-nerved; petals obovate, almost twice as long as the calyx; capsules ovate-roundish, 3-valved, hardly exceeding the calyx. ♃. H. Native of the Levant as well as in Eastern Siberia. Smith, icon. ined. p. 35. t. 35. Poir. dict. 6. p. 378. A. aciculàris, Fisch. in litt. Flowers white.

Juniper-like Sandwort. Fl. June, July. Clt. 1800. Pl. ½ ft.

22 A. STRI'CTA (Mich, fl. bor. amer. 1. p. 274.)] plant erect, glabrous, many-stemmed; leaves awl-shaped-linear, erect, and in axillary fascicles; panicle few-flowered; sepals oval-lanceolate; petals conspicuously-striped, much longer than the calyx. ♃. H. Native of North America on rocks in New England and Canada, and on the high mountains of Carolina. Hook. fl. bor. amer. t. 33. Very like *A. striàta*, but much larger and more erect. Flowers white.

Straight Sandwort. Fl. May, June. Clt. 1812. Pl. ½ foot.

23 A. OBTU'SA (Torrey. in ann. lyc. new york, vol. 2. 1827.) tufted, many-stemmed; leaves linear-awl-shaped, bluntish, keeled, rather secund; stem simple, commonly 1-flowered; peduncles clothed with glandular hairs; sepals oblong, obtuse, 3-nerved; petals oblong, twice the length of the calyx; capsule ovate, shorter than the calyx; seeds orbicularly-kidney-shaped. ♃. H. Native of North America on the Rocky Mountains.

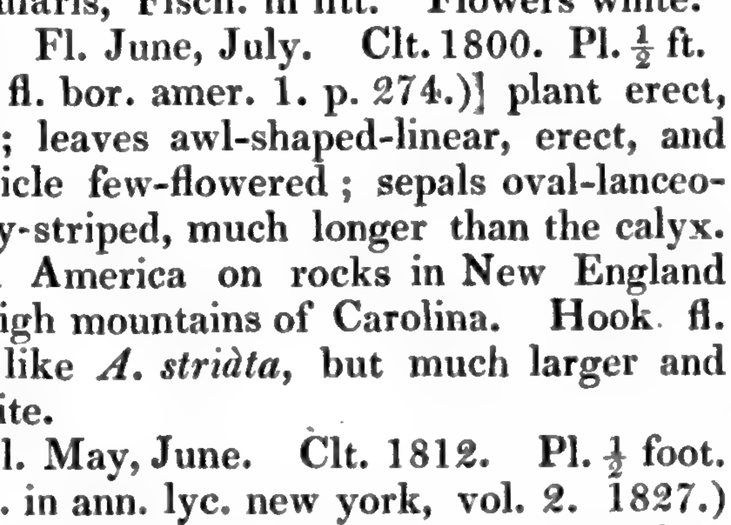
Obtuse-leaved Sandwort. Pl. ¼ foot.

24 A. PRO'CERA (Spreng. ex Horn. hort. hafn. p. 424.) stem erect, simple, few-flowered; calyxes obtuse; petals emarginate, thrice as long as sepals. ♃. H. Native? Flowers white.

Tall Sandwort. Fl. June, July. Clt. 1820. Pl. ¾ foot.

25 A. LARICIFO'LIA (Lin. spec. 607.) leaves awl-shaped, denticulately-ciliated; stems ascending, 1-3 or 6-flowered, somewhat scabrous; calyx cylindrical; sepals bluntish, triple-nerved, hairy; petals twice as long as the sepals; capsules 3-valved, exceeding the calyx. ♃. H. Native on the alps of Switzerland and France, &c. Flowers white.

FIG. 70.



Var. α, *multiflòra* (Ser. mss. in D. C. prod. 1. p. 404.) stems weak, many-flowered; younger leaves in bundles, arcuate, axillary; calyx and peduncles hairy. A. laricifòlia, Vill. dauph. 4. p. 629. t. 47. f. 5. Jacq. aust. 3. p. 39. t. 272.

Var. β, *striàta* (Ser. mss. in D. C. prod. 1. p. 404.) stems stiff, few-flowered; leaves straight, long; peduncles and calyxes clothed with clammy hairs. A. striàta, Vill. dauph. 4. p. 630. t. 47. f. 6. A. liniflòra, Jacq. coll. 2. t. 3. f. 3.

Var. γ, *Chamisòni*; leaves smooth; cauline ones ciliated at the base. Native of Eschscholtz Bay..

Larch-leaved Sandwort. Fl. Ju. Aug. Clt. 1816. Pl. ½ ft.

26 A. ROSTRA'TA (Waldst. et Kit. hung. ex Willd. enum. 481.) leaves linear-awl-shaped, recurved; flowers twin, terminal; sepals acute, 3-nerved, shorter than the corolla, pubescent; stems diffuse, pubescent. ♃. H. Native of Hungary in alpine places. A. macrocárpa, Kit. et Hort. Gœtt. Flowers white.

Beaked Sandwort. Fl. June, July. Clt. 1816. Pl. ½ foot.

27 A. LYCOPODIOI'DES (Willd. herb. ex Schlecht. berl. mag. 1816. p. 212.) plant much branched, creeping, glabrous; leaves rather imbricated, mucronate, stiff, 1-nerved; petals shorter than the calyx; capsules many-seeded. ♃. H. Native of Mexico near Moran, at the height of 3990 feet. Flowers white.

Lycopodium-like Sandwort. Pl. creeping.

28 A. A'RCTICA (Stev. in litt. in D. C. prod. 1. p. 404.) plant small, tufted; leaves linear-lanceolate, obtuse; stems 1-flowered; peduncles covered with glandular hairs; sepals oblong, obtuse, hardly nerved; petals obovate, double the length of the calyx. ♃. H. Native of Siberia, on the icy shores, also in the Bay of St. Lawrence. Hook, fl. bor. amer. t. 32. A. bryoìdes, Fisch. in litt. A. Altàica, Fisch. in litt. A. sérpens, Fisch. in litt. Plant with the habit of *Silène acaúlis* or *Cherlèria sedoìdes*. Flowers whitish.

Arctic Sandwort. Pl. ⅛ foot.

29 A. AUSTRI'ACA (Jacq. austr. 3. p. 39. t. 270.) leaves linear-awl-shaped, 3-nerved; stem tufted, rather panicled; peduncles terminal, very long, twin, puberulous; petals obtuse, emarginate; sepals 3-nerved, very acute, spreading. ♃. H. Native of Austria and Italy, on the alps. All. ped. no. 1700. t. 64. f. 2. A. elongàta, Schlecht. berl. mag. 1816. p. 200. Stellària biflòra, Jacq. coll. 1. p. 251. t. 18. A. stellarioìdes, Pers. ench. 1. p. 503. Flowers white. Capsule longer than the calyx.

Var. β, *glàbra* (D. C. fl. fr. 4. p. 787.). A. Villársii, Balb. misc. 21. exclusive of the variety *hirsùta*. A. triflòra, Vill. dauph. 4. p. 623. t. 47. A. míxta, Lapeyr. abr. 255. Plant glabrous.

Austrian Sandwort. Fl. June, Sept. Clt. 1793. Pl. ½ foot.

30 A. GLOBULÒSA (Labill. pl. syr. dec. 4. p. 6. t. 3. f. 1.) plant very much branched; leaves awl-shaped, nerved, pilose; flowers numerous, disposed in racemes; sepals unequal, longer than the petals; capsules profoundly 3-valved; seed kidney-shaped, rough around. ♃. H. Native of Syria.

Globulose Sandwort. Fl. June, Sept. Pl. ¼ to ½ foot.

31 A. CAPILLA'CEA (All. ped. no. 1705. t. 89. f. 2.) leaves setaceous, rigid, scabrous; flowers erect; petals larger than the calyx. ⊙. H. Native of Piedmont on the tops of the mountains called Tenda. Petals white. Stem hairy.

Capillary-leaved Sandwort. Fl. June, July. Clt. 1819. Pl. ¼ to ½ foot.

32 A. GRANDIFLÒRA (Lin. spec. 608.) leaves awl-shaped, broadish, flat, 3-nerved, ciliated, radical ones crowded; stems generally 1-flowered; peduncles very long, pubescent; sepals ovate, awned, 3-nerved, one-half smaller than the petals; capsules ovate, 6-valved, hardly exceeding the calyx in length. ♃. H. Native of France on the alps and mountains. All. ped. no. 1711. t. 10. f. 1. A. triflòra, Cav. icon. 3. t. 249. f. 2. A. míxta, Lapeyr. abr. p. 255. Flowers white.

Var. β, *multiflòra* (D. C. prod. 1. p. 404.) stems 3-4-flowered; peduncles very long; leaves hardly ciliated. A. junipérina, Vill. dauph. 4. p. 624.—All. ped. no. 1715. t. 26. f. 5.

Var. γ, *triflòra* (D. C. prod. 1. p. 404.) stems 2-4-flowered; leaves narrower and recurved. A. triflòra, Lin. mant. 240. D. C. fl. fr. 4. p. 788. ♃. H. Native on sandy hills near Fontainebleau.

Var. δ, *stolonífera* (D. C. prod. 1. p. 404.) stems much branched; lower leaves broadish, short, dense; upper ones very narrow, very long, and distant; sepals very narrow. ♃. H. Native of Dauphiny, and Siberia on rocks at Tschussowaja. A. stolonífera, Vill. ex herb. D. C. A. láxa, Fisch. in litt.

Great-flowered Sandwort. Fl. June, Sept. Clt. 1783. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

33 A. He'lmii (Fisch. in litt. D. C. prod. 1. p. 404.) plant clothed with glandular hairs; leaves linear, bluntish, 3-nerved, radical ones crowded; stems 1-3-flowered; peduncles very long; sepals ovate, somewhat mucronate, obsoletely 3-nerved; petals obovate, twice the length of the sepals; capsules ovate, in length exceeding the calyx. ♃. H. Native of the Ural mountains in Siberia. Flowers white.

Helme's Sandwort. Fl. June, July. Clt. 1822. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

34 A. Scandina'vica (Spreng. syst. 2. p. 399.) leaves awl-shaped; branches 2-flowered; petals entire; ovary oblong; sepals oblong, obtuse, striated. ♃. H. Native of Lapland on the alps. A. biflòra, Cham. et Schlecht. Linnæa. 1. p. 52. but not of Lin. Stellària biflòra, Lin. spec. 604. Oed. fl. dan. t. 12. Alsinélla biflòra, Swartz, et Wickstroem. A small plant, with the appearance of a species of *Sagìna*. Petals white.

Scandinavian Sandwort. Pl. $\frac{1}{8}$ foot.

35 A. liniflòra (Lin. spec. 608.) stem suffruticose, distorted; leaves filiform, strictly appressed; peduncles twin, terminal, short; sepals lanceolate, striated, shorter than the corolla. ♃. H. Native of Austria, Hungary, and Caucasus. Perhaps *A. pinifòlia*, Bieb. Flowers white.

Flax-flowered Sandwort. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

36 A. macroca'rpa (Pursh, fl. amer. sept. 1. p. 316. but not of Horn.) plant tufted; leaves crowded, awl-shaped-linear, flat, with ciliated margins; peduncles terminal, 1-flowered, leafy; sepals linear; petals ovate, twice the length of the sepals; capsules oblong, thrice the length of the calyx. ♃. H. Native of the north-west coast of America and of Chamisso's Island. Flowers white. This plant approaches near to *A. grandiflòra*, but differs in the long capsule and shape of the sepals materially. Habit of a species of *Cerástium*.

Var. β; habit of *Cherlèria sedoìdes*. Native of the island of St. Lawrence.

Long-fruited Sandwort. Fl. June, July. Clt. 1810. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

37 A. hi'rta (Wormsk. in fl. dan. t. 1646.) leaves linear-awl-shaped, obtuse, with 2 furrows, hairy; stems hairy, 1-2-3-flowered; sepals 3-nerved, acute, shorter than the capsule; petals oblong, rather shorter than the calyx. ♃. H. Native of the south of Greenland, Lapland, island of St. Paul, and Kamtschatka. A. sulcàta, Schlechtend in berl. mag. 1816. p. 212. A. villòsa, Ledeb. A small plant with reddish flowers.

Var. β, *glabràta* (Cham. in Schlecht. Linnæa. 1. p. 56.) plant smooth. Native of the island of St. Lawrence.

Hairy Alpine Sandwort. Fl. June, July. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ foot.

38 A. rube'lla (Smith, engl. fl. 4. p. 267.) plant tufted; leaves awl-shaped, obtuse, quite smooth, 3-nerved; peduncles 1-flowered, elongated, pubescent; sepals very acute, 3-nerved, longer than the elliptical petals; capsule 4-valved, sometimes 3-valved, longer than the sepals. ♃. H. Native of Melville Island; in Scotland on the summit of the Breadalbane mountains; on Craig Challeach, and on Ben Lawers. A small plant, forming a dense tuft. Calyx brownish-purple. Corolla white. Anthers red. Alsìne rubélla, Wahl. lapp. 128. t. 6. Alsinélla rubélla, Swartz. sum. veg. scand. p. 17. A. quadriválvis, R. Br. in append. to Parry's voy. p. 13.—D. Don, in eng. bot. suppl. t. 2638.

Red Alpine Sandwort. Scotland. Pl. 1 to 2 inches.

39 A. Ro'ssii (R. Br. l. c.) quite smooth; leaves triquetrous; awl-shaped, bluntish, awnless, nerveless, scarcely equalling the flower in length; peduncles 1-flowered, elongated; petals oblong, a little longer than the obsoletely 3-nerved sepals. ♃. H. Native of Melville Island. A small tufted herb. Calyx purplish. Corolla white. Ovary 1-celled. The *A. Róssii* of Richardson in Franklin's journey, p. 738. differs from this in its larger stature, and in the capsule being 3-valved. *Alsìne stricta* differs from it in its larger size and in the leaves being acute.

Ross's Sandwort. Pl. 1 to 2 inches.

40 A. ve'rna (Lin. mant. 72.) plant tufted, many-stemmed; leaves awl-shaped, bluntish; stems panicled, elongated; sepals ovate-lanceolate, acuminated, with 3 remote equal ribs, longer than the obovate petals; capsules cylindrical, of 3 valves, longer than the calyx. ♃. H. Native of the mountainous parts of Europe. In Britain about the lead-mines in Derbyshire, as well as in Yorkshire, Westmoreland, and Wales. In Scotland on Arthur's Seat, and many other hills near Edinburgh. Smith, engl. bot. t. 512. Jacq. austr. t. 404. A. saxátilis, Huds. ed. 1. p. 168. Penn. tour. in Wales, t. 2. f. 1. A. junipérina, With. p. 424. A. laricifòlia, With. p. 404. A. divaricàta, Adams, ex Fisch. in litt. A. fláccida, Schleich. Flowers small, white.

Var. β, *cæspitòsa* (D. C. prod. 1. p. 405.) stems very leafy; calyxes and peduncles smoothish. A. cæspitòsa, Ehrh. herb. 55. D. C. fl. fr. 5. p. 613.

Var. γ, *mìnor* (D. C. prod. 1. p. 405.) stem dwarf, 1-flowered. ♃. H.

Spring Sandwort. Fl. May, Aug. Brit. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ foot.

41 A. Gera'rdi (Willd. spec. 2. p. 729.) plant erect, branched; leaves linear-awl-shaped, 3-nerved; peduncles twin, terminal, 1-flowered; sepals acuminated, 3-nerved, with membranaceous margins. ♃. H. Native of the alps of Austria and France. A. liniflòra, Jacq. aust. t. 445.—Gerard. gallo-prov. 405. no. 7. t. 15. f. 1.? Flowers white. Perhaps only a variety of *A. vérna*.

Gerard's Sandwort. Fl. May, Aug. Clt. 1822. Pl. $\frac{1}{4}$ foot.

42 A. ramosi'ssima (Willd. enum. suppl. p. 24.) stems very much branched, elongated, panicled; leaves awl-shaped, bluntish, nerved, recurved; petals ovate, hardly equalling the sepals in length; sepals acuminated, striated, and are hispid as well as peduncles; capsules of 3 valves. ♂. H. Native of Hungary. Horn. hort. hafn. p. 964. Link. enum. 1. p. 431. This is very like *A. vérna*, but it is of a more loose habit.

Most-Branched Sandwort. Fl. May, Aug. Clt. 1816. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

43 A. e'legans (Cham. in Schlecht. Linnæa. 1. p. 57.) tufted, many-stemmed, smooth; leaves linear, obtuse, thickish; peduncles terminal, solitary; sepals lanceolate, awl-shaped, acuminated, rather keeled; petals exceeding the calyx; capsule 3-valved. ♃. H. Native of the Bay of St. Lawrence. Plant smooth. Like *A. vérna*.

Elegant Sandwort. Pl. $\frac{1}{4}$ foot.

44 A. hi'spida (Lin. spec. 608.) plant tufted, erect, many-stemmed, pilose, hispid; panicle dichotomous; leaves awl-shaped, and are hispid as well on the under surface of the sepals, hardly striated; corolla exceeding the calyx; capsules somewhat globose, of 3 valves, hardly longer than the calyx. ♃. H. Native about Montpelier in chalky places. Habit of *Spérgula*. Stems simple, with a few scattered hairs. Flowers white. D. C. fl. fr. 4. p. 789.

Hispid Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

45 A. subulæfo'lia (Presl. ex Spreng. syst. 1. p. 182.) stem

tufted, simple; leaves awl-shaped, bluntish, quite smooth; panicle dichotomous; sepals acute, clothed with glandular pubescence, twice the length of the petals; capsules 3-valved, equal in length to the calyx. ♃. H. Native of Sicily. *A. Arvática*, Presl. ex Spreng.

Awl-leaved Sandwort. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ foot.

46 *A.* ECHINA'TA (Poir. dict. 6. p. 377.) plant dwarf; stems rather branched, short; leaves filiform, awl-shaped, hardly pubescent; flowers somewhat panicled; peduncles and calyxes glandular, hispid; corolla equal in length to the calyx; capsules length of calyx. ♃. H. Native of the Alps of Europe. Flowers white.

Echinated-calyxed Sandwort. Fl. June, July. Pl. $\frac{1}{8}$ foot.

47 *A.* PA'TULA (Mich. fl. bor. amer. 1. p. 273.) plant pubescent; stems filiform, panicled, many-flowered; leaves setaceous, spreading; petals somewhat emarginate, a little longer than the very acute, striped sepals. ♃. H. Native of North America on rocks near Knoxville, Kentucky. Flowers white. This plant resembles *A. tenuifòlia*.

Spreading-leaved Sandwort. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

48 *A.* SAXA'TILIS (Lin. spec. 607.) leaves awl-shaped; stems panicled; sepals ovate. ♃. H. Native of Germany, Switzerland, France, and Siberia.—Barrel. icon. t. 580. ?—Gmel. sib. 4. t. 63. f. 2.—Vaill. par. 7. t. 2. f. 3. Flowers white.

Stone Sandwort. Fl. July, Aug. Clt. 1732. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

49 *A.* PE'NDULA (Waldst. et Kit. hung. 1. p. 90. t. 87.) stems filiform, rooting, very long, diffuse; flower-bearing branches erect; leaves linear, flat, acute, somewhat fasciculate; sepals lanceolate, acute, shorter than the petals; capsules depressed, globose (6-valved?). ♃. H. Native of Hungary on chalky rocks. Flowers white. Filaments of stamens hairy at their base.

Pendulous Sandwort. Fl. Ju. Jul. Clt. 1816. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

50 *A.* TENUIFÒLIA (Lin. spec. 667.) leaves awl-shaped, setaceous; stems panicled, forked; sepals awl-shaped, striated, much longer than the petals; capsules of 3 valves, hardly exceeding the calyx in length. ⊙. H. Native of dry barren sandy fields, and on walls in many parts of Europe. In Britain in several parts of Cambridgeshire; at Oxburgh, Norfolk, Worcestershire, and Oxfordshire. Smith, engl. bot. t. 219. Fl. dan. t. 389. Alsìne tenuifòlia, Bauh. hist. 3. p. 2. 364. f. *A. viscòsa*, Schreb. Lips. 30. Petals white.

Var. α, *Vaillantiàna* (D. C. prod. 1. p. 406.) stems tufted, erect, glabrous, branching at the top.—Vaill. par. t. 3. f. 1.

Var. β, *Barrelièri* (D. C. l. c.) stems much branched, glabrous, rather procumbent. *A. Barrelièri*, Vill. dauph. 4. p. 634.—Barrel. icon. t. 580. Native of Dauphiny.

Var. γ, *simpliciúscula* (Ser. mss.) stem glabrous, erect, upper part branched; calyx glabrous; stamens 3 or 4.

Var. δ, *hýbrida* (D. C. l. c.) stem straight, glabrous; calyxes clothed with glandular viscid hairs. *A. hýbrida*, Vill. dauph. 4. p. 634. t. 47. *A. pentándra*, Duf. ann. gen. 7. p. 292. Native of Dauphiny.

Var. ε, *viscídula* (D. C. l. c.) stems erect, upper part branched, and are as well as calyxes covered with viscid hairs. *A. viscídula*, Thuil. fl. par. ed. 2. p. 219. *A. dùbia*, Sut. fl. helv. 1. p. 266. *A. viscòsa*, Pers. ench. 1. p. 504. Native of Switzerland.

Fine-leaved Sandwort. Fl. Ju. July. Brit. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

51 *A.* VILLÒSA (Ledeb. ex Steud. nom. 67. descr. ex Fisch. in litt. D. C. prod. 1. p. 406.) leaves linear, awl-shaped, 3-nerved, ciliated; stems pubescent, villous; sepals ovate-lanceolate, acuminated, striated, 3-nerved, with membranaceous margins, longer than the corolla. ♃. H. Native of Siberia. Flowers white.

Villous-stemmed Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

52 *A.* CALYCI'NA (Poir. voy. 2. p. 167. dict. 6. p. 370.) plant very smooth; leaves grassy, short; peduncles very long, generally 1-flowered; sepals lanceolate, very acute, with membranaceous margins; petals oblong, narrow, much shorter than the calyx; capsules oval, of 5 valves, almost equal in length to the calyx. ⊙. H. Native of Barbary. Petals white.

Large-*calyxed* Sandwort. Fl. June, July. Clt. 1816. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

53 *A.*? SPINULIFLÒRA (Ser. mss. D. C. prod. 1. p. 406.) plant very smooth; leaves filiform, obtuse; flowers dichotomously-panicled, numerous, small; sepals lanceolate, membranaceous, pellucid, with long points; petals very short; stamens 5? Native of the Levant. Petals white.

Spiny-flowered Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

54 *A.* TRIA'NDRA (Schrank. hort. monac. t. 30.) stem dichotomous, diffuse; leaves flat, linear, very narrow; corolla smaller than the calyx; flowers triandrous; capsules of 3 valves. ⊙. H. Native? Minuártia tenuifòlia, Mart. hort. erlang, p. 44. ex Schrank. l. c. Petals white. Perhaps only a variety of *A. tenuifòlia*.

Triandrous Sandwort. Fl. June, July. Clt. 1817. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

55 *A.* EMARGINA'TA (Brot. fl. lus. 2. p. 202.) stems erect; leaves linear, bluntish; sepals lanceolate; petals emarginate. shorter than the calyx. ⊙. H. Native of Portugal on dry hills beyond the Tagus, and of Algiers. Stems racemose, clammy. Leaves sessile. Petals reddish, emarginate. Schlecht. in berl. mag. 1816. p. 212.?

Emarginate-petalled Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

56 *A.* MEDITERRA'NEA (Ledeb. ex Link. enum. 1. p. 431.) stem very much branched; leaves linear, recurved; sepals striated, with long points and membranaceous margins, much longer than the corolla; capsules longer than the calyx. ⊙. H. Native? This was sent under the name of *A. calycìna*, see Horn. hafn. and *A. calycìna*, Pers. Peduncles very long. Petals white.

Mediterranean Sandwort. Fl. Ju. Jul. Clt. 1823. Pl. ¼ to ½ ft.

57 *A.* RECU'RVA (All. ped. no. 1713. t. 89. f. 8.) leaves radical, crowded, recurved, awl-shaped, leaning rather to one side; stems tufted, simple, generally 3-flowered; sepals ovate-lanceolate, striated, covered with glandular hairs as well as the peduncles; petals ovate, a little longer than the sepals; capsules ovate, of 3 valves, shorter than the calyx; seeds somewhat kidney-shaped, hardly dotted. ♃. H. Native of the higher Alps of Europe in stony meadows, particularly in Switzerland, Italy, Austria, and Moravia. Jacq. coll. 1. p. 244. t. 16. f. 1. There is a variety of this plant with from 1-8 flowers on each stem. Flowers white.

Var. β, *hispídula* (Ser. mss. in D. C. prod. 1. p. 406.) stems, leaves, and peduncles covered with glandular hairs. ♃. H. Native of Vallais. Flowers white.

Recurved-leaved Sandwort. Fl. Ju. Jul. Clt. 1822. Pl. ¼ ft.

58 *A.* HIRSU'TA (Bieb. fl. taur. 1. p. 349.) plant hairy; leaves awl-shaped, 3-nerved, bluntish; lower leaves imbricate, recurved; stems declinate; panicle many-flowered, dichotomous; sepals acute, somewhat 5-nerved, hairy, almost equal in length to the corolla; capsule 3-valved; seeds rather disciform, with echinated margins. ♃. H. Native of Tauria on high mountains. Flowers white. Perhaps only a variety of *A. recúrva*.

Hairy Sandwort. Fl. June, July. Clt. 1820. Pl. ¼ foot.

59 *A.* CALYCULA'TA (Poir. suppl. 5. p. 7.) plant somewhat pubescent; leaves thickish, somewhat fasciculate, semicylindrical, awl-shaped, curved; sepals lanceolate, elongated, acutish, 5-nerved, with membranaceous margins; petals entire; capsules ovate, longer than the calyx. ♃. H. Native of Hungary. Flowers white.

Calyculated Sandwort. Fl. June, July. Clt. 1817. Pl. ¼ ft.

60 A. GLA'BRA (Mich. fl. bor. amer. 1. p. 274.) plant very smooth, erectish, many-stemmed; leaves linear-awl-shaped, flat, spreading; pedicels 1-flowered, elongated, divaricating; sepals oval, bluntish, smooth, shorter than the corolla. 4. H. Native of North Carolina on rocks. Stellària uniflòra, Walt. fl. carol. p. 141. Flowers white.

Glabrous Sand-wort. Fl. June, July. Pl. $\frac{1}{4}$ foot.

61 A. RUPE'STRIS (Labill. pl. syr. dec. 4. p. 8. t. 4. f. 1.) stems ascending; leaves setaceous, obtuse, somewhat curved, crowded, a little ciliated beneath; flowers panicled, from 2-4; sepals ovate, oblong, rather hairy, 3-nerved; petals oval-oblong, twice as long as the sepals; disk glandular under the ovary; capsules of 3 valves, hardly exceeding the calyx in length. 4. H. Native of Mount Lebanon. Flowers white.

Rock Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ foot.

62 A. SETA'CEA (Thuil. fl. par. ed. 2. p. 220.) stem very much branched; flowers panicled, fastigiate; leaves setaceous, in bundles, ciliated at their base, all leaning to one side; sepals awl-shaped, acute, with white, membranaceous margins, almost equal in length with the petals; capsules of 3 valves, rising above the calyx. 4. H. Native among stones on dry hills about Paris and Fontainebleau. Flowers white.

Var. α, pilòsa (Ser. mss. in D. C. prod. 1. p. 407.) stems hairy at the bottom. 4. H. A. heteromálla, Pers. ench. 1. p. 504. A. saxátilis, Loisel. fl. gall. p. 261. exclusive of the synonymes of Lin. and Vahl.

Var. β, rugòsa (Ser. mss. in D. C. l. c.) stem pubescent at the bottom. 4. H. A. heteromálla, Bieb. fl. taur. 1. p. 350. Flowers white. Plant greenish-glaucous.

Setaceous-leaved Sandwort. Fl. June, July. Clt.? Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

63 A. FASCICULA'TA (Gouan. ill. 30.) leaves awl-shaped, setaceous, in bundles; stems erect, straight, almost simple; flowers fascicled; pedicels shorter than the leaves; sepals unequal, acuminated, somewhat membranaceous, with two narrow lines, almost twice the length of the obtuse petals; capsules of 3 valves, shorter than the calyx; seeds kidney-shaped, rough, with rather serrated margins. ♂. H. Native in sandy or gravelly sunny places, in many parts of Europe, particularly about Montpelier, Austria, and Carniola. In Scotland on rocks in Fifeshire and the mountains of Angus-shire. Jacq. austr. 2. t. 182. A. fastigiàta, Smith. engl. bot. t. 1744. Alsìne mucronàta, Lam. dict. 4. p. 310. Stellària rùbra, Scop. carn. 1. p. 316. t. 17. Stems often purplish. Petals white.

Fascicled-leaved Sandwort. Fl. June. Scotland. Pl. $\frac{1}{2}$ ft.

64 A. FASTIGIA'TA (Lin. syst. nat. ed. 12. vol. 3. p. 733. Smith, fl. græc. 442.) stem fastigiate, leafy, pubescent, viscid, villous; panicle leafy; sepals linear-lanceolate, very long, ciliated; petals very short; leaves linear-awl-shaped, ciliated, connate. ⊙. H. Native of Asia Minor. Flowers in racemose panicles.

Fastigiate Sandwort. Pl. $\frac{1}{8}$ foot.

65 A. FRANKLI'NI (Hook. fl. bor. amer. t. 35.) root fusiform; stems numerous; panicle fastigiate, crowded; sepals lanceolate, acuminated; petals oblong-lanceolate, obtuse, shorter than the sepals; leaves linear-awl-shaped, finely ciliated at the base and connate; capsule 6-valved at the apex. 4. H. Native of North America in the arctic regions. Flowers white.

Franklin's Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ foot.

66 A. FILIFÒLIA (Forsk. descr. p. 211. Vahl. symb. 1. p. 33. t. 12.) leaves setaceous, crowded, 2-ribbed; stems suffruticose, forked; peduncles terminal, 1-2-flowered; sepals very narrow. equal in length with the corolla. 4. H. Native of Arabia on Mount Boka. Petals white.

Thread-leaved Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

67 A. MUCRONA'TA (D. C. fl. fr. 4. p. 791.) leaves setaceous, not ciliated at the base; stems tufted, prostrate at the base; panicle rather forked; peduncles longer than the leaves; sepals acuminated, somewhat membranaceous, with 2 lateral ribs, awned, longer than either the petals or capsule; capsules of 3 valves. ⊙. H. Native about Montpelier on rocks. A. fasciculàta β, rostràta, Pers. ench. 1. p. 504. Alsìne mucronàta, Gouan. ill. 22. A. mutábilis, Lapeyr. abr. 256. Petals white. Perhaps only a variety of *A. fasciculàta*.

Mucronate-sepalled Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ ft.

68 A. GLOMERA'TA (Bieb. fl. taur. 1. p. 350. suppl. p. 311.) plant pubescent, hoary; leaves awl-shaped, straight; flowers on very short pedicels, disposed in glomerate heads; sepals scariose, with 2-stripes, acuminated, much longer than the petals; capsule 3-valved. ⊙. H. Native of Tauria on calcareous rocks. Petals white. Allied to *A. fasciculàta*, but differs in the stem being branched from the base.

Var. β, elàtior (Ser. mss. in D. C. prod. 1. p. 407.) panicle rather looser; pedicels longer. ⊙. H. Native among rocks about Odessa.

Glomerate-flowered Sandwort. Fl. June, July. Clt. 1818. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

69 A. LARI'CINA (Cham. in Schlecht. Linnæa. 1. p. 57.) decumbent; leaves stiff, awl-shaped, ciliated, with bundles of small leaves in the axillæ; flowers few, terminal; petals twice the length of the calyx; seeds disk-formed, ciliated. 4. H. Native of Siberia. Spérgula larícina, Lin. spec. 631. Smith, icon. ined. 1. p. 18. t. 18. Lam. ill. t. 392. f. 3. Spérgula arenarioìdes, Herb. Willd.

Larch-like Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

70 A. ULIGINÒSA (Schleich. cent. exs. 1. no. 47. D. C. fl. fr. 4. p. 786. icon. pl. gall. p. 14. t. 46.) stem erect, branched from the base; leaves linear, bluntish; branches naked; peduncles twin, 1-flowered, generally terminal, furnished with two bracteas at the base of each; sepals lanceolate, nerveless, hardly longer than the ovate petals; capsules ovate, of 3-valves, equal in length to the calyx; seeds somewhat kidney-shaped, orange-coloured. 4. H. Native of Jura, Siberia, and Lapland, in turfy bogs. Spérgula strícta, Swartz, act. holm, and in Schrad. journ. 1800. vol. 2. p. 256. Petals white.

Var. β, purpuràta (Ser. mss. in D. C. prod. 1. p. 407.) stems and calyxes purple. A. muscòrum, Adams ex Fisch. in litt.

Bog Sandwort. Fl. June, July. Clt. 1819. Pl. $\frac{1}{4}$ foot.

71 A. POLYGONOI'DES (Wulf. in Jacq. coll. 1. p. 241. t. 15.) plant procumbent; leaves linear, obtuse, ciliated; peduncles either in twos or threes, 1-flowered, furnished with two bracteas at the middle of each; sepals oblong-linear, obtuse, without nerves, hardly shorter than the corolla; capsules ovate, of 3 valves, hardly exceeding the calyx; seeds somewhat disciform, black. 4. H. Native of Switzerland in stony places. A. obtùsa, All. ped. t. 64. f. 4. Stellària ciliàta, Scop. fl. carn. ed. 2. vol. 1. p. 315. no. 536. t. 17. Stellària biflòra, Gun. fl. norv. 1. p. 45. no. 91. Petals white.

Var. β, occúlta (D. C. prod. 1. p. 408.) peduncles very long, 1-flowered. 4. H. Native of Siberia on the Altaian mountains. A. occúlta, Fisch. in litt. Petals white.

Polygonum-like Sandwort. Fl. Ju. July. Clt. 1822. Pl. $\frac{1}{4}$ ft.

72 A. BAVA'RICA (Lin. amœn. 4. p. 315.) leaves linear, semicylindrical, fleshy, obtuse, longer than the spaces of the stem between the leaves; stems branched, somewhat dichotomous, hard, jointed; peduncles terminal, generally in pairs. 4. H. Native of Bavaria and Siberia. Saxífraga Bavárica, Ray, hist. 1033. A. Pònæ, Rchb. icon. t. 138. Petals white. Seeds few.

Bavarian Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ foot.

73 A. SAJANE'NSIS (Willd. herb. ex Schlecht. berl. mag. 1816. p. 200.) leaves linear, bluntish; stems procumbent; peduncles

terminal, very short, 1-flowered; sepals 1-nerved. 4 ? H. Native of the Altaian mountains at Sajan. Petals white.

Sajan Sandwort. Fl. June, July. Pl. ¼ foot.

74 A. JU'NCEA (Bieb. fl. taur. suppl. p. 309.) stems erect, simple; leaves linear, setaceous, rough, ciliated; panicle dichotomous, pubescent; sepals acute, villous, obscurely 3-nerved, almost equal in length to the corolla. ⊙ ? H. Native of Tauria. Petals white.

Rush-like Sandwort. Fl. June, July. Pl. ¼ to ½ foot.

75 A. VERTICILLA'TA (Willd. spec. 2. p. 725.) leaves awl-shaped, stiff, spinose, and are as well as the flowers disposed in whorls; peduncles 4-flowered, somewhat capitate; sepals linear, awl-shaped, pungent; petals lanceolate. ħ. H. Native of Armenia between Erzerum and Tocat. Petals white.

Whorled-leaved Sandwort. Fl. June, July. Clt. 1823. Shrub ½ foot.

76 A. FILIFO'RMIS (Labill. pl. syr. dec. 4. p. 8. t. 3. f. 2.) stem simple, filiform, naked at the top; leaves setaceous, acuminated; panicle somewhat dichotomous, few-flowered; sepals elliptical, glabrous; petals oval-oblong, tapering to the base, twice as long as the sepals; capsules of 3-valves (longer than the calyx?) seeds kidney-shaped. ⊙. H. Native of the island of Cyprus. Petals white.

Filiform-stemmed Sandwort. Fl. June, July. Pl. ¼ to ½ ft.

77 A. PHARNACEOÌDES (Ser. mss. in D. C. prod. 1. p. 408.) leaves filiform, mucronate, somewhat fasciculate; stem branched; flowers somewhat umbellate; sepals ovate, obtuse; petals twice as long as sepals. ⊙ ? H. Native of the Levant. Stems and peduncles partly clothed with glandular hairs. Flowers white.

Pharnaceum-like Sandwort. Fl. June, July. Pl. ¼ to ½ foot.

78 A. PI'CTA (Sibth. and Smith, fl. græc. t. 439.) stems leafless, dichotomous, hairy towards the top; leaves tufted, awl-shaped; petals emarginate, veiny on the under surface. ⊙. H. Native of the island of Cyprus in fields. Petals white, but veined on the under surface with red.

Painted-petalled Sandwort. Fl. June, July. Pl. ¼ foot.

79 A. MARGINA'TA (Bieb. in herb. Willd. ex Schlecht. berl. mag. 1816. p. 212. but not of D. C.) stems ciliated; leaves linear awl-shaped, smoothish; sepals acute, edged. 4. H. Native of Eastern Siberia. Plant small, almost woody, much branched. Petals white.

Edged-sepalled Sandwort. Fl. June, July. Pl. ¼ foot.

80 A. CANE'SCENS (Vahl. herb. ex Horn. hort. hafn. 1. p. 964. in add.) leaves awl-shaped, fleshy; sepals nerved, one-half shorter than the petals. 4. H. Native? A. macrocárpa, Horn. hort. hafn. 1. p. 964. but not of Pursh. Flowers white.

Canescent Sandwort. Fl. June, July. Clt. 1817. Pl. ¼ ft.

81 A. ? JURE'SSI (Willd. herb. ex Schlecht. berl. mag. 1816. p. 212.) leaves linear, awl-shaped, leaning rather to one side; sepals lanceolate. 4 ? H. Native of Portugal on mount Gerez. Petals white. Plant dwarf, tufted.

Juress's Sandwort. Fl. June, July. Pl. ¼ foot.

82 A. PU'LCHRA (Willd. herb. ex Schlecht. berl. mag. 1816. p. 212.) plant erect, glabrous; leaves linear, awl-shaped; flowers panicled; sepals membranaceous, edged, shorter than the petals. 4 ? H. Native on mount Ararat. Flowers large, white.

Fair Sandwort. Fl. June, July. Pl. ¼ foot.

83 A. ? ARMERI'NA (Bory, ann. gen. sc. ph. 3. 1820. p. 5.) stems diffuse, woody; leaves connate, linear, acute, stiff, when old recurved; flowers capitate. ħ. F. Native of Spain in hedges near Sierra Nevada. Petals white.

Sweet-William Sandwort. Fl. June, July. Shrub ½ foot.

84 A. EXTE'NSA (Duf. ann. gen. 7. p. 291.) plant regularly pubescent, diffuse, branched; stems elongated; leaves linear; flowers loosely panicled; petals length of calyx; capsules obversely conical, inclosed within the calyx. 4 ? H. Native of Spain on arid hills in the province of Valentia. Flowers rose-coloured.

Extended Sandwort. Fl. June, July. Pl. ½ foot.

85 A. ? RAFINESQUIA'NA (Ser. mss. in D. C. prod. 1. p. 409.) leaves imbricated, awl-shaped, acute; stems sparingly branched, rather erect; peduncles solitary, terminal, almost naked, 1 or 3-flowered; stamens 8 or 10. 4 ? H. Native of North America in New Jersey. A. imbricàta, Rafinesque journ. bot. 1. p. 229. suppl. 5. p. 8. but not of Bieb. Petals white.

Rafinesque's Sandwort. Fl. June, July. Pl. ¼ foot.

86 A. ? CHERLE'RIÆ (Fisch. in litt. in D. C. prod. 1. p. 409.) plant small, tufted; leaves linear, awl-shaped, curved at the points? rather imbricate; flowers terminal or somewhat corymbose; sepals oblong, bluntish, rather membranaceous, twice as long as the narrow petals. ⊙. H. Native of Siberia. A. Dahùrica, Spreng. syst. 2. p. 398. Petals white.

Var. α, uniflòra (D. C. l. c.) flowers solitary, terminal; stem almost wanting; leaves curved at the points. ⊙. H. Native of Dahuria on rocks near Grædina. Habit of *Cherlèria sedoìdes*, Petals white.

Var. β, fasciculàta (D. C. l. c.) flowers somewhat umbellate; stem elongated; leaves not curved at the points. ⊙. H. Native of Dahuria, very common in places exposed to the sun. Petals white.

Cherleria-like Sandwort. Fl. March, May. Pl. ⅛ to ¼ foot.

§ 3. *Leaves lanceolate, linear-lanceolate, oval, spatulate or roundish. The plants of this division are easily known from the rest in the leaves neither being grassy nor setaceous.*

87 A. TETRA'QUETRA (Lin. spec. 605.) leaves ovate, keeled, recurved, edged, imbricated in four rows; stems straight, pubescent; flowers somewhat capitate; sepals stiff, acute, keeled, ciliated, almost equal in length to the corolla; capsules ovate, truncate, of 6-valves, with the valves callose at the apex; seeds kidney-shaped, very rough. 4. H. Native of France and the shores of the Mediterranean on sterile mountains. Flowers white.

Var. α, laxifòlia (D. C. prod. 1. p. 409.) leaves distant; heads many-flowered; stems elongated. 4. H. Native of Piedmont, Pyrenees, and about Montpelier. All. ped. no. 1718. t. 89. f. 1.—Magn. p. 53. icon.

Var. β, densifòlia (D. C. l. c.) leaves densely imbricated; heads few-flowered; stems short. A. imbricàta, Lag. in litt. Gypsóphila aggregàta, Lin. spec. 581. 4. H. Native of the shores of the Mediterranean.

Square-stemmed Sandwort. Fl. Aug. Clt. 1731. Pl. ¼ to ½ ft.

88 A. AMA'BILIS (Bory. ann. gen. sc. phys. 3. 1820. p. 5.) leaves triangular, concave, acute, revolute; stems branched, level topped, tufted, naked at the bottom; peduncles almost wanting, leafy; sepals rigid. 4. H. Native of Spain at Sierra Nevada. Petals white. Perhaps A. imbricàta, Lag. ann. 5. p. 278?

Lovely Sandwort. Fl. Aug. Pl. ¼ foot.

89 A. GIESE'KII (Horn. fl. dan. t. 1518.) plant glandular, hispid; leaves linear-lanceolate, stiff, 3-nerved; peduncles very long, almost naked, 1-flowered; sepals lanceolate, acute, 3-nerved, longer than the corolla; capsules of 3, rarely of 6-valves, almost twice as long as the calyx; seeds kidney-shaped, roughish. 4. H. Native of Greenland. Petals white.

Gieseke's Sandwort. Pl. ¼ foot.

90 A. RUBICU'NDA (Spreng. syst. 2. p. 399.) stem erect, branched, pubescent; leaves lanceolate-linear, pubescent; peduncles solitary, 1-flowered, elongated; sepals acuminated, hairy, shorter than the corolla. 4. H. Native of Siberia. A. purpùrea, Willd. herb. Flowers purplish.

Reddish-flowered Sandwort. Pl. ¼ foot.

91 A. MUSCÒRUM (Fisch. in litt. but not of Adams, D. C.

prod. 1. p. 409.) plant tufted; leaves oblong, obtuse, striated, ciliated; stems short, puberulous, 1-flowered; sepals ovate, obtuse, somewhat striated, much smaller than the corolla. ♃. H. Native of Kamtschatka. Petals white.

Moss-like Sandwort. Pl. $\frac{1}{8}$ foot.

92 A. mode'sta (Duf. ann. gen. 7. p. 291.) plant viscid, pubescent, erect, slender, somewhat dichotomous; leaves oblong-linear, lower ones elliptical-ovate; peduncles filiform, at length divaricating; sepals lanceolate, acute, nerveless; petals ovate-oblong, hardly the length of the sepals; capsules ovate, of 6 valves, about the length of the calyx. ⊙. H. Native of Spain about Valentia. Flowers white.

Modest Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

93 A. nemoròsa (H. B. et Kunth, gen. et spec. amer. 6. p. 35.) plant branched, procumbent, puberulous; leaves stalked, oblong, acute, mucronate, veiny, membranaceous; petals shorter than the sepals; capsules containing few seeds; seeds even, shining. ♃. F. Native of South America. A. alsinoìdes, Willd. herb. ex Schlecht. berl. mag. 1816. p. 201. Stellària pubéscens, Willd. herb. ex Kunth, l. c. Petals white. Seeds lenticular, kidney-shaped.

Var. α, Quiténsis (D. C. prod. 1. p. 409.) spaces of stem between the leaves longer than in var. β. Stems and branches terete. ♃. F. Native of Quito in groves. Petals white.

Var. β, Novogranaténsis (D. C. prod. 1. p. 409.) leaves oblong, half an inch long, or lanceolate, an inch long; stems and branches terete. ♃. F. Native of the Andes in New Granada in temperate places, at the height of 3000 feet. Petals white.

Grove Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ foot.

94 A. galioi'des (Ser. mss. in D. C. prod. 1. p. 410.) stems slender, pilosely-hispid; leaves lanceolate-linear, acute, thin, ciliated, disposed somewhat in whorled bundles; flowers in dichotomous panicles; peduncles capillary, elongated; sepals lanceolate, acute, nerveless, pilosely hispid, with the edges somewhat membranaceous, hardly longer than the corolla. ♃ ? H. Native of? Habit of *Gálium Anglicum*, but more slender. Flowers white.

Lady's-Bed-Straw-like Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

95 A. lanceola'ta (All. ped. no. 1715. t. 26. f. 5.) plant tufted, rather villous; branches ascending; leaves lanceolate, narrow, acute, stiff, nerved; pedicels twice as long as the leaves; sepals lanceolate, acute, nerved, hardly longer than the corolla; capsules of 3-valves, length of calyx, with the valves callose at the apex. ♃. H. Native of the Alps of Piedmont in stony pastures. Flowers white.

Var. β, cherlerioìdes (D. C. fl. fr. 4. p. 785.) plant small; stems creeping and tufted; leaves imbricated.—A. cherlerioìdes, Vill. dauph. 4. p. 626. t. 47. f. 1. ♃. H. Native of Dauphiny. Flowers white.

Lanceolate-leaved Sandwort. Fl. July, Aug. Clt. 1820. Pl. $\frac{1}{4}$ foot.

96 A. de'nsa (Kit. ex Schlecht. berl. mag. 1816. p. 200.) leaves oblong-lanceolate, scabrous; stems tufted, branched, ascending; sterile branches short, floral ones generally bearing 3 flowers; sepals ovate, rather scarious; petals twice as long as the calyx. ♃. H. Native of Croatia. Petals white.

Dense Sandwort. Fl. June, July. Clt. 1824. Pl. $\frac{1}{4}$ foot.

97 A. purpura'scens (Ram. pyr. ined. D. C. fl. fr. 4. p. 785. and 5. p. 611. icon. pl. rar. gall. p. 14. t. 45.) plant tufted, decumbent; branches erect, 2 or 3-flowered; leaves ovate-lanceolate, acuminated, glabrous; pedicels tomentose, scarcely exceeding the leaves; sepals lanceolate, smooth, with scarious margins, longer than the corolla; capsules ovately-cylindrical, semi-6-valved, hardly protruding beyond the calyx; valves acute; seeds kidney-shaped. ♃. H. Native on the higher Pyrenees. A. cerastioìdes, Pers. ench. 1. p. 502. Lapey. pyr. abr. p. 252. but not of Poir. Flowers purplish.

Purplish-flowered Sandwort. Pl. $\frac{1}{8}$ foot.

98 A. viola'cea (Ledeb. ex Fisch. in litt. D. C. prod. 1. p. 410.) leaves lanceolate, smoothish; flowers somewhat panicled, erect, terminal; peduncles covered with clammy hairs, equal in length to the calyx; sepals oblong, beset with clammy hairs; petals narrow, obovate, twice as long as the sepals. ♃ ? H. Native of Siberia towards Ochotsk. A. purpùrea, Willd. Flowers violaceous or purple.

Violaceous-flowered Sandwort. Fl. June, July. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ ft.

99 A. abieti'na (Presl. ex Spreng. syst. app. 181.) stem tufted, ascending, few-flowered, rather villous; leaves linear-lanceolate, awned, stiff, smooth, ciliated at the base; petals obovate, emarginate, longer than the acuminated sepals. ♃. H. Native of Sicily. This is certainly a species of *Stellària*. Perhaps *A. grandiflòra*, Lin.

Fir-like Sandwort. Pl. $\frac{1}{4}$ foot.

100 A. monta'na (Lin. amœn. 4. p. 272.) plant pubescent; leaves lanceolate-linear; sterile stems very long, procumbent; peduncles terminal, very long, 1-flowered, fruit-bearing ones nodding; sepals lanceolate, acuminated, much shorter than the corolla; capsules ovate-globose, of 6-valves, equal in length to the calyx; valves bluntish; seeds kidney-shaped, rough. ♃. H. Native of the west of France and Spain, on sterile mountains. D. C. fl. fr. 4. p. 784. Vent. cels. t. 34. Sims, bot. mag. 1118. A. linearifòlia, Poir. dict. 6. p. 366. Habit of *Cerástium*. Root creeping? Flowers large, white. Fruit nodding.

Var. β, intricàta (D. C. prod. 1. p. 410.) leaves almost linear. A. intricàta, Duf. in litt. ♃. H. Native of Spain about Valentia.

Mountain Sandwort. Fl. April, July. Clt. 1800. Pl. $\frac{1}{2}$ foot.

101 A. ruscifòlia (Poir. dict. 6. p. 365.) leaves coriaceous, ovate, spinose, edged, approximate; flowers in dichotomous panicles; sepals ovate, pungent, striped, almost one-half shorter than the petals; capsules ovate, of 6 valves exceeding the calyx in length; valves narrow, acute. ♃ ? H. Native? Flowers white.

Butcher's-Broom-leaved Sandwort. Pl. $\frac{1}{2}$ foot.

102 A. re'pens (Ser. mss. in D. C. prod. 1. p. 410.) plant hairy; leaves ovate, almost sessile; stems creeping; flowers solitary, axillary; peduncles shorter than the leaves; sepals lanceolate, acutish, hardly longer than the corolla, with membranaceous margins; capsules ovate, of 6 valves, equal in length to the calyx; seeds kidney-shaped, shining, black. ♃. H. Native? Alsìne rèpens, herb. Deless. Flowers white.

Creeping-stemmed Sandwort. Fl. May, July. Pl. creeping.

103 A. Wallichia'na (Ser. mss. in D. C. prod. 1. p. 411.) plant very smooth; leaves ovate-lanceolate; stems much branched, very numerous; sepals lanceolate, acute, rather pellucid, 1-nerved, longer than the corolla; capsules ovate, profoundly 6-valved, equal in length to the calyx; seeds somewhat pear-shaped, rough. ⊙. H. Native of Nipaul at Narainhetty. A. serpyllifòlia, D. Don, prod. fl. nep. p. 215. Very like *A. serpyllifòlia*, but distinct. Petals white.

Wallich's Sandwort. Fl. June, Aug. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

104 A. Urale'nsis (Spreng. syst. 2. p. 396.) stem much branched, scabrous; leaves ovate, acute, sessile, nerved, rather pilose; peduncles aggregate, beset with glandular pili; sepals acuminated, exceeding the corolla. ⊙ ? H. Native of Siberia on the Ural mountains.

Ural Sandwort. Pl. $\frac{1}{4}$ foot.

105 A. buxifòlia (Poir. dict. 6. p. 362.) plant pubescent; leaves ovate-oblong, sessile; stems creeping; peduncles dichotomous, generally 2-flowered; sepals linear, short, obtuse, with

membranaceous margins; petals hardly longer than the calyx; capsules ovate, obtuse (of 5 valves?) equal in length to the calyx. ⊙. H. Native of Canada. Petals white.

Box-leaved Sandwort. Pl. creeping.

106 A. SERPYLLIFÒLIA (Lin. spec. 606.) leaves ovate, acute, sessile, rough, ciliated, and smooth; stems panicled; sepals hairy, lanceolate, acute, 3-nerved, 3 outermost 5-nerved, green, opaque, almost double the size of the corolla; capsules ovate, 6-valved at apex, equal in length to the calyx; seeds exactly kidney-shaped, wrinkled. ⊙. H. Native throughout the whole of Europe, on walls and dry sandy ground, common, as well as in North America in cultivated ground, and on road sides from New York to Carolina. Smith, engl. bot. t. 923. Curt. lond. fasc. 4. t. 32. Fl. dan. 977. Stellària serpyllifòlia, Scop. carn. no. 544. Flowers white, solitary.

Var. β, víscida (Ser. mss. D. C. prod. 1. p. 411.) stems dwarf; leaves and calyxes full of nerves and clammy.

Wild-Thyme-leaved Sandwort. Fl. July. Britain. Pl. ¼ ft.

107 A. PURSHIA'NA (Ser. mss. in D. C. prod. 1. p. 414.) stem dichotomous, diffuse; leaves oval, acutish; peduncles alternate, axillary, solitary, elongated; sepals acute, length of petals. ⊙. H. Native of Labrador on the sea-shore. A. thymifòlia, Pursh. fl. amer. sept. 1. p. 317. but not of Sibth and Smith. Petals white.

Pursh's Sandwort. Fl. June, July. Pl. ⅛ to ¼ foot.

108 A. THYMIFÒLIA (Smith, fl. græc. t. 441.) stems numerous, slender, panicled; leaves narrow-spatulate, smooth, 3-nerved; petals unguiculate, ovate, longer than the 3-nerved sepals. ⊙. H. Native of Candia. Flowers small, white; anthers brownish. Like *A. serpyllifòlia*.

Thyme-leaved Sandwort. Pl. ⅛ to ¼ foot.

109 A. COIMBRICE'NSIS (Brot. fl. lus. 2. p. 200. phyt. lus. p. 179. t. 73.) leaves fleshy, lanceolate, nerveless, glabrous on the under surface, but pubescent on the upper surface; stem panicled, dichotomous, erect; petals twice as long as the sepals; capsules 6-valved at the apex; sepals bluntish, nerveless, shorter than the corolla. ⊙. H. Native of Portugal in sandy ground near Coimbra and elsewhere. Petals white.

Coimbra Sandwort. Fl. June, July. Clt. 1819. Pl. ¼ foot.

110 A. PUBE'SCENS (D'Urv. enum. pl. arch. p. 50.) plant pubescent; leaves ovate, acute, on short footstalks; stems spreading, branched, elongated; sepals acute, shorter than the corolla. ♃. H. Native of the island of Cos on the summits of the mountains at the height of 1200 feet above the level of the sea. Flowers white. Very like *A. ciliàta*, but differing in all parts of the plant being densely clothed with down; the leaves are narrower, and the sepals are not striped.

Pubescent Sandwort. Fl. May, July. Clt. 1820. Pl. ¼ foot.

111 A. CINE'REA (D. C. fl. fr. 5. p. 811.) plant grey, hairy; leaves ovate-lanceolate, acute, ciliated, upper ones distant, lanceolate, acute; flowers in dichotomous panicles, on long peduncles; sepals lanceolate, acute, somewhat keeled, almost one-half smaller than the corolla; capsules ovate, equal in length with the calyx, of 6 valves; valves callose at the apex. ♃. H. Native of the south of France. Flowers white.

Cinereous Sandwort. Fl. April, Aug. Pl. ¼ foot.

112 A. BREVICAU'LIS (Sternb. in Spreng. pl. min. cog. 1. p. 31.) leaves oblong, acutish, 3-nerved, ciliated, somewhat imbricate; stems prostrate; sepals lanceolate, acuminated, striped, exceeding the petals in length, with membranaceous margins. ♄? H. Native of the Alps of Rhætia. Petals white. Very like *A. ciliàta*, but differing in the stems being erect, leaves blunt, 1-nerved; sepals smaller, and petals 1-nerved.

Short-stemmed Sandwort. Fl. May, July. Clt. 1823. Pl. ¼ ft.

113 A. SCA'BRA (Poir. dict. 6. p. 377.) leaves lanceolate, acute, spreading, scabrous; stem simple, very short; peduncles panicled, dichotomous; sepals ovate, acuminated, striped, rough, with membranaceous margins, shorter than the corolla. ♃? H. Native of the Alps of Europe. Flowers white.

Scabrous-leaved Sandwort. Fl. May, Jul. Clt. 1822. Pl. ⅛ ft.

114 A. REDO'WSKII (Cham. in Schlecht. Linnæa, 1. p. 58.) leaves elliptical, acute at both ends, mucronate, membranous, ciliated at the base; stems procumbent, tufted; sepals ovate, acuminated, shorter than the corolla; petals longer than the calyx. ♃. H. Native of Siberia. Like *A. ciliàta*.

Redowski's Sandwort. Pl. procumbent.

115 A. CRE'TICA (Spreng. syst. 2. p. 396.) stem tufted; leaves crowded, oblong, acute, stiffish, smooth; peduncles terminal, usually 1-flowered, clammy-pubescent; sepals keeled, acutish, shorter than the corolla. ♃. H. Native of Candia. A. hìrta, Sieb.

Cretan Sandwort. Pl. ¼ foot.

116 A. CILIA'TA (Lin. spec. 608.) leaves ovate or obovate, roughish, with a few hairs, 1-nerved, and ciliated; stems procumbent; flowers usually solitary; sepals ovate, acute, 5-7-ribbed; petals obovate, twice as long as the sepals; capsules ovate, of 6-valves, equal in length to the calyx. ♃. H. Native of Europe on high mountains. In Ireland upon the limestone cliffs of a high mountain adjoining to Ben Bulben, in the county of Sligo. Smith, engl. bot. t. 1745. Fl. dan. t. 346. Wulf. in Jacq. coll. 1. p. 245. t. 16. f. 1. Fl. dan. t. 346. A thick, tufted, spreading, procumbent plant. Flowers white.

Var. β, multicaúlis (D. C. fl. fr. 4. p. 783.) leaves pulpy and somewhat leathery, and with the sepals scarcely nerved. A. multicaúlis, Wulf. in Jacq. coll. 1. p. 248. t. 17. f. 1. Flowers white.

Ciliated-leaved Sandwort. Fl. July, Sep. Ireland. Pl. procumbent.

117 A. SCOPULÒRUM (H. B. et Kunth, gen. et spec. amer. 6. p. 31.) stems elongated, much branched, procumbent; leaves lanceolate-linear, acute, 1-nerved, membranaceous, with the margins and the back ciliated; calyx glabrous, shorter than the petals; capsules containing only 2 or 3 seeds; seeds smooth, shining. ♃. F. Native of the Andes of Peru at the height of 5100 feet. A. dígyna, Willd. herb. ex Schlecht. berl. mag. 1816. p. 201. Flowers white.

Rocky Sandwort. Pl. procumbent.

118 A. DECUSSA'TA (Willd. herb. ex Schlecht. in berl. mag. 1816. p. 35.) plant very much branched, creeping; branches hairy; leaves lanceolate-linear, acute, mucronate, with thickened margins, 1-nerved, stiff, ciliated; petals longer than the sepals; ovary containing 4 or 5 seeds. ♃. F. Native of Mexico near Moran at the height of 3990 feet above the level of the sea. H. B. and Kunth, gen. et spec. 6. p. 34. Petals white.

Decussate-leaved Sandwort. Fl. June, July. Pl. ¼ to ½ foot.

119 A. SE'RPENS (H. B. et Kunth, gen. et spec. amer. 6. p. 32.) plant much branched, creeping, glabrous; leaves oblong, somewhat spatulate, obtuse, rather fleshy, veinless, ciliated at the base; petals hardly longer than the sepals; capsules containing generally about 15 seeds; seeds smooth, shining. ♃. F. Native of Peru at the bottom of mount Chimborazo, at the height of 4920 feet. Flowers white.

Serpent Sandwort. Pl. creeping.

120 A. RADDIA'NA (Ser. mss. in D. C. prod. 1. p. 412.) leaves ovate-lanceolate, tapering to the base, ciliated; stems very long, branched, prostrate, glabrous, quadrangular; peduncles axillary, 1 to 3-flowered; flowers apetalous. ⊙? F. Native of Madeira. Sepals lanceolate, pellucid, with three green nerves. Bracteas two, somewhat similar to the sepals. A. alsinoìdes, Raddi brev. osserv. p. 13. but not of Willd.

Raddi's Sandwort. Pl. prostrate.

121 A. NORVE'GICA (Gunn. fl. norv. 2. no. 1100. t. 9. f. 7-9.

ex Horn. fl. dan. t. 1269.) plant glabrous; stems terete, procumbent, 1-2-flowered; leaves spatulate, glabrous; flowers terminal, rather globose; sepals ovate, obtuse, hardly nerved, with the margins rather membranaceous, equal in length with the corolla; capsule ovate-globose, of 6 valves at the apex, hardly exceeding the calyx. ♃. H. Native of Norway. Petals white.

Norwegian Sandwort. Fl. June, July. Pl. $\frac{1}{4}$ foot.

122 A. TRINE'RVIA (Lin. spec. 605.) stem slender, branched; leaves ovate, acute, 3-nerved, stalked, ciliated; peduncles long, becoming deflexed after flowering; sepals lanceolate, acute, obscurely 3-nerved, with a rough keel and membranaceous margins, much longer than the corolla; capsules ovate, of 6 valves, equal in length to the calyx; seeds kidney-shaped, black, and smooth. ⊙. H. Native of most parts of Europe in shady bushy places, where the soil is rather moist. Smith, engl. bot. t. 1483. Curt. lond. fasc. 4. t. 31. Fl. dan. t. 429. Petals white. Habit of *Alsìne mèdia*.

Three-nerved-leaved Sandwort. Fl. May, June. Britain. Pl. $\frac{1}{2}$ to 1 foot.

123 A. MURA'LIS (Sieb. ex Spreng. syst. 2. p. 397.) plant clothed with glandular pubescence; leaves spatulate, acutish, rather fleshy; stem much branched; flowers racemose; petals emarginate, equal with the acute sepals. ⊙? H. Native of Candia. Petals white.

Wall Sandwort. Pl. $\frac{1}{8}$ foot.

124 A. OXYPE'TALA (Smith, fl. græc. t. 437.) hairy; stem slender, erect, branched; leaves ovate, acute, stalked, 1-nerved; peduncles terminal, panicled, dichotomous; calyx hairy, obsoletely 5-nerved; petals acuminated. ⊙. H. Native of Greece. Plant very like common *Chickweed*, but erect. Flowers white.

Sharp-petalled Sandwort. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

125 A. UMBELLA'TA (Sol. in Russ. allepo, ed. 2. p. 252.) stems ascending, leafy, jointed, smooth; leaves obovate, ciliated; flowers umbellate; petals rather torn. ⊙. H. Native of Asia Minor. Smith, fl. græc. t. 439. Plant glaucous. Habit of *Holósteum umbellàtum*. Flowers white.

Umbellate-flowered Sandwort. Pl. 2 to 3 inches.

126 A. LATERIFLÒRA (Lin. spec. 605.) stem slender, branched; leaves broad-ovate, obtuse, ciliated, nerved; peduncles lateral, long, 1-2-flowered; sepals ovate, obtuse; petals twice as long as the sepals; capsules ovate, obtuse, twice as long as the calyx (of 3-6 valves?) valves obtuse. ♃? H. Native of the islands of Kamtschatka and St. Lawrence. Hook, fl. bor. amer. t. 34. Similar to *A. trinérvia*, but very distinct. Petals white.

Lateral-flowered Sandwort. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

127 A. CERASTIIFÒLIA (Ram. in D. C. fl. fr. 4. p. 783.) plant tufted, rather woody, branched; leaves ovate-lanceolate, 3-nerved, pubescent; peduncles terminal, 1-flowered, clothed with glandular hairs; sepals lanceolate, bluntish, nerved, shorter than the corolla; capsules ovate, of 3-valves, hardly exceeding the calyx in length; valves callose at the apex. ♃. H. Native of the Pyrenees in the chinks of rocks. A. Ramóndi, Poir. suppl. 5. p. 3. Flowers white.

Chickweed-like Sandwort. Pl. ¼ foot.

128 A. MACROPHY'LLA (Hook, fl. bor. amer. t. 37.) smooth; leaves lanceolate, or ovate-lanceolate, tapering to both ends; peduncles lateral, 2-3-flowered; sepals ovate-lanceolate, acuminated; petals oblong, obtuse, much shorter than the sepals; capsule 6-valved at the apex; valves obtuse; stem erect, terete. ♃. H. Native of North America on the western coast. Flowers white.

Long-leaved Sandwort. Pl. $\frac{1}{2}$ foot.

129 A. CALYCA'NTHA (Ledeb. ex Fisch. in litt. and D. C. prod. 1. p. 412.) leaves oblong, acute, sessile, hardly ciliated at the base; flowers nodding; sepals oblong, acute, with membranaceous margins; petals perhaps always wanting; stamens longer than the calyx. ⊙. H. Native of Eastern Siberia.

Calyx-flowered Sandwort. Pl. $\frac{1}{4}$ foot.

130 A. ROTUNDIFÒLIA (Bieb. fl. taur. 1. p. 343.) leaves orbicular, hardly ciliated at the base; stems filiform, procumbent; peduncles lateral, 2-leaved, somewhat dichotomous; sepals lanceolate, acute, with membranaceous margins; petals obovate, length of calyx. ♃. H. Native on the Alps of Caucasus.

Round-leaved Sandwort. Fl. March, Aug. Pl. $\frac{1}{4}$ foot.

131 A. BALEA'RICA (Lin. syst. nat. ed. 12. app. 230.) plant tufted, creeping; leaves ovate, shining, rather fleshy, ciliated; peduncles elongated, 1-flowered; flowers drooping; sepals ovate, bluntish, nerveless, much shorter than the corolla; capsules ovate, of 6 valves, hardly exceeding the calyx in length. ♃. H. Native of Corsica and the Balearic islands. Lher. stirp. 1. t. 15. A. muscòsa, Medic. act. pal. 3. p. 202. t. 12. A pretty little tufted plant, with white flowers.

Balearic Sandwort. Fl. March, Aug. Clt. 1787. Pl. $\frac{1}{8}$ to $\frac{1}{4}$ ft.

132 A. BIFLÒRA (Lin. mant. 71.) leaves ovate-roundish, glabrous, rather imbricated; stems procumbent, very much branched; peduncles lateral, 2-flowered; flower-buds roundish; sepals ovate, obtuse, shorter than the corolla; capsules ovate, of 3 valves, length of calyx; valves callose at the apex. ♃. H. Native of the south of Europe on the highest Alps, near the limits of perpetual snow. All. ped. no. 1699. t. 44. f. 1. et t. 64. f. 3. good. Jacq icon. rar. t. 83. Flowers white.

Var. β, apétala (D. C. fl. fr. 4. p. 782.) leaves imbricate, ciliated; flowers apetalous. A. apétala, Vill. dauph. p. 622. t. 48.

Two-flowered Sandwort. Pl. $\frac{1}{4}$ foot.

133 A.? MUSCOI'DES (H. B. et Kunth, gen. et spec. amer. 6. p. 32.) plant creeping, glabrous; leaves small, rather imbricate, linear-lanceolate, nerveless, acutish, rather fleshy; petals hardly the length of the sepals; capsules containing few-seeds; seeds smoothish. ♃. F. Native of South America on the summit of mount Antisana, at the height of 6900 feet. A. nàna, Willd. herb. ex Schlecht. berl. mag. 1816. p. 201. Seeds very minute, rather lenticular. Petals white.

Moss-like Sandwort. Pl. creeping.

134 A. TETRA'GYNA (Willd. herb. ex Schlecht. berl. mag. 1816. p. 201.) plant much branched, creeping, glabrous; leaves approximate, oblong-lanceolate, acutish, obsoletely 1-nerved, rather fleshy, and ciliated towards the base; corolla exceeding the calyx in length; styles for the most part 4; capsules of 4 valves, containing 8 or 10 seeds; seed tubercled. ⊙. H. Native of South America on Mount Antisana, at the height of 6300 to 6600 feet. H. B. et Kunth, gen. et spec. amer. 6. p. 30. Flowers white.

Four-styled Sandwort. Pl. creeping.

135 A. BRYOI'DES (Willd. herb. ex Schlecht. berl. mag. 1816. p. 201.) plant tufted, glabrous; leaves small, imbricate, in 4 rows, ovate, obtuse, concave, nerveless, thick, ciliated; petals shorter than the sepals; capsules containing only 1 or 2 seeds. ♃. F. Native of America in very cold places on Mount Tolucca in Mexico, at the height of 5700 feet. H. B. et Kunth, gen. et spec. amer. 6. p. 33. Petals white.

Bryum-like Sandwort. Pl. $\frac{1}{8}$ foot.

136 A. DICRANOI'DES (H. B. et Kunth, nov. gen. et spec. amer. 6. p. 34.) plant tufted, glabrous; leaves imbricated in 4 rows, ovate-lanceolate, acute, concave, 1-nerved, ciliated; flowers terminal, solitary, sessile, with 2 styles. ♃. F. Native of South America on Mount Antisana, at the height of 6300 feet. Lobèlia bryoìdes, Willd. herb. mss. ex Schlecht. in Rœm. et Schult. syst. 5. p. 41. Fruit unknown. Flowers white.

Dicranum-like Sandwort. Pl. $\frac{1}{8}$ foot.

137 A. Salzma'nni (Presl. ex Spreng. syst. app. 181.) stem much branched, flaccid, villous; leaves oblong-lanceolate, acute, hispidly-ciliated; panicle dichotomous; sepals 3-nerved, with scarious margins, shorter than the corolla, but longer than the sub-globose capsule. ♃. H. Native of Sicily.

Salzmann's Sandwort. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

138 A. spatula'ta (Desf. atl. 1. p. 358.) plant pubescent; leaves spatulate, ciliated at the base; stem erect, filiform, branched; flowers panicled, dichotomous; sepals oblong, pubescent, with membranaceous margins, much shorter than the corolla; capsules ovate, equal in length to the calyx (of 5 valves?) valves callose at the apex. ⊙. H. Native of Barbary in sand near Algiers. A. cerastioides, Poir. dict. 6. p. 363. but not of D. C. nor Lapeyr. Anthers blue. Petals white, slightly emarginate, obovate.

Spatulate-leaved Sandwort. Pl. $\frac{1}{4}$ foot.

139 A. procu'mbens (Vahl. symb. 1. p. 50. t. 33.) plant pubescent; leaves linear-lanceolate and elliptic; stems prostrate; peduncles elongated, panicled; sepals lanceolate, bluntish, with membranaceous margins, a little longer than the corolla; capsule (of 5 valves?) equal in length with the calyx; seeds very small. ♃. H. Native of Tunis, Egypt, and Naples among rubbish. A. herniariæfolia, Desf. atl. 1. p. 358. A. geniculàta, Poir. dict. 6. p. 365. A. ròsea, Presl. ex Spreng. Petals red and white.

Procumbent Sandwort. Fl. July, Aug. Clt. 1801. Pl. $\frac{1}{8}$ ft.

140 A. Jussie'æ (St. Hil. fl. bras. 2. p. 174.) leaves lanceolate, acute, scabrous; flowers solitary, on long peduncles; sepals keeled, acute with membranous margins, scabrous; petals a little shorter than the capsule, but a little longer than the calyx. ♃. F. Native of Brazil. Plant decumbent, 2 feet long. Capsule 3-valved.

Jussieu's Sand-wort. Fl. March. Pl. decumbent.

† *Species not sufficiently known, but evidently all belonging to the last division of the genus.*

141 A. Rosa'ni (Ten. prod. p. 26. and cat. 1819. p. 43.) leaves linear-lanceolate, mucronate, hairy, striated; stem erect, hairy, generally 3-flowered; petals obovate, twice the length of the striped calyx. ♃. H. Native of Lucania. Petals white.

Rosani's Sandwort. Pl. $1\frac{1}{2}$ inch.

142 A. Bartolo'tti (Tineo. pl. rar. sic. pug. 1. p. 10.) leaves lanceolate, almost glabrous; stem decumbent, panicled, dichotomous, 2-edged; panicle pubescent; petals ovate, almost equal in length with the calyx; sepals ovate-lanceolate, with membranaceous margins. ♃? H. Native of Sicily by the sea-side near Gela. Petals white?

Bartolotti's Sandwort. Pl. $\frac{1}{4}$ foot.

143 A. molluginifo'lia (Pour. ex Schlecht. berl. mag. 1816. p. 201.) leaves obovate, acute; peduncles bifid, drooping. ♃? H. Native of Spain.

Mollugo-leaved Sandwort. Pl. $\frac{1}{4}$ foot.

144 A. seri'cea (Ser. mss. in D. C. prod. 1. p. 414.) leaves silky, lanceolate, ciliated; stem erect; branches 1-flowered; corolla shorter than the calyx. ♃? H. Native of Siberia. A. purpùrea, Willd. herb. ex Schlecht. berl. mag. 1816. p. 211. Petals purple?

Silky-leaved Sandwort. Pl. $\frac{1}{4}$?

145 A. clandesti'na (Portenschlag. pl. dalm. t. 1. ined.) leaves linear-lanceolate, acute; stem simple, 1-flowered; flower large, nodding; peduncles short; sepals oblong, obtuse, 5-times shorter than the corolla; petals very long and very narrow, linear, acute; stamens or 5 small egg-shaped little bodies seated between the ovary and the petals; ovary oblong; styles 3; stigmas forked. ♃? ⊙. H. Native of Dalmatia. Perhaps a proper genus. Perhaps the same as *A. calycìna*.

Clandestine Sandwort. Pl. $\frac{1}{4}$ foot.

146 A.? stellarioi'des (Willd. herb. ex Schlecht. berl. mag. 1816. p. 209.) leaves ciliary-serrulated; stems pubescent, somewhat panicled; sepals lanceolate, longer than the corolla. Native of Caucasus.

Stitchwort-like Sandwort. Pl. $\frac{1}{4}$ foot.

147 A. affi'nis (Willd. herb. ex Schlecht. berl. mag. 1816. p. 198.) leaves oblong, acute, stalked; upper ones sessile; corolla shorter than the calyx. Native of Siberia.

Allied Sandwort. Pl. $\frac{1}{4}$ foot.

Cult. *Arenària* is a genus of dwarf herbaceous plants, for the most part perennial, the most of which are well adapted for ornamenting rock-work, but some of the rarer species should be grown in small pots well drained with potsherds, in a mixture of sand, loam, and peat, and placed among other alpine plants. Those species marked frame only require to be sheltered during frost. The perennial species may be either increased by dividing the plants at the root, by seeds, or cuttings planted under a hand-glass will root freely. The annual kinds are not so shewy as the perennials, therefore they are not worth cultivating, except in botanical gardens; they may be either sown on the rock-work or in the annual arrangement.

XXXIII. ME'RCKIA (in honour of Dr. Merk, who travelled in Eastern Asia). Cham. in Schlecht. Linnæa. vol. 2.

Lin. syst. *Pentándria, Trigýnia.* Calyx 5-parted. Petals 5, unguiculate, entire. Stamens 5, alternating with the sepals; filaments filiform; anthers fixed by the middle, somewhat globose. Styles 3. Capsule sessile, inflated, depressedly-globose, furrowed, imperfectly 3-celled, 3-valved, with the dissepiments 2-parted, bearing the seeds. Seeds numerous, or few, pear-shaped. Embryo hooked with the radical towards the hilum. Herbs with creeping roots, and fleshy, opposite leaves on short footstalks. Flowers stalked, terminal, and lateral, solitary.

1 M. physo'des (Fisch. in litt. ex Cham. l. c.) tufted; leaves ovate, acute, ciliated, distant, thin; peduncles long; sepals lanceolate, acutish, equal in length to the corolla; seeds small, pear-shaped. ♃. H. Native of Kamtschatka and in Eschscholtz Bay in the sea-sand. Arenària physòdes, D. C. prod. 1. p. 413. Flowers white. Seeds numerous.

Bladdery-capsuled Merkia. Pl. creeping.

2 M. peploi'des; leaves ovate, acute, fleshy, approximate, ciliated at the base; peduncles short; sepals oblong, acutish, equal in length to the corolla; seeds few, large, pear-shaped. ♃. H. Native throughout northern Europe in the sea-sand; plentiful in Britain. Arenària peploides, Lin. spec. 605. Smith, engl. bot. t. 189. Fl. dan. 189. Honkénya peploìdes, Erhr. beit. 2. p. 181. Flowers red. Capsule roundish, equalling the calyx. The plant is fermented and used by the Icelanders for food.

Peplis-like Merckia. Fl. June, Aug. Brit. Pl. creeping.

Cult. These plants will grow in any common garden-soil, and are easily increased by dividing the plants at the root.

XXXIV. CERA'STIUM (from κερας κερατος, *keras keratos*, a horn; because many of the species have capsules exactly of the form of an ox's horn). Lin. gen. no. 797. Gært. fruct. 2. p. 231. t. 130. f. 6. D. C. prod. 1. p. 414.

Lin. syst. *Decándria, Pentagýnia.* Calyx 5-parted. Petals 5, bifid. Stamens 10. Styles 5. Capsules 1-celled, cylindrical or globose, opening at the apex by 10 circinnate or ascending teeth. Flowers of all white.

Sect. 1. Stre'phodon (στρεφω, *strepho*, to turn, and οδους οδοντος, *odous odontos*, a tooth; in allusion to the revolute teeth

of the capsule). Ser. mss. in D. C. prod. 1. p. 414. Capsules cylindrical, with circinnate or revolute teeth.

1 C. pauciflo'rum (Stev. in litt. D. C. prod. 1. p. 414.) plant pilose; leaves lanceolate, acute; flowers few, on long dichotomous peduncles, nodding, with a solitary flower rising from the fork; petals and capsules much longer than the calyx. ⊙. H. Native of Siberia.

Few-flowered Mouse-ear Chickweed. Fl. June, July. Clt. 1816. Pl. ½ foot.

2 C. nemora'le (Bieb. fl. taur. suppl. p. 317.) plant hairy, clammy; stem erect, upper part forked; cauline leaves lanceolate, acute; flowers axillary, solitary, spreading, on long peduncles; petals length of calyx; capsules hardly longer than the calyx. ⊙. H. Native of Caucasus in groves.

Grove Mouse-ear Chickweed. Fl. May, June. Clt. 1818. Pl. 1 foot.

3 C. perfolia'tum (Lin. spec. 627.) plant glabrous and glaucous; stem erect, branched, or simple; leaves lanceolate, connate, bluntish; flowers in umbels; petals much shorter than the calyx. ⊙. H. Native of Greece, Barbary, and Siberia in sandy places.—Dill. elth. 295. t. 217. f. 284. good.

Perfoliate-leaved Mouse-ear Chickweed. Fl. June, July. Clt. 1725. Pl. 2 feet.

4 C. Cauca'sicum (Fisch. in litt. D. C. prod. 1. p. 414.) stem erect, dichotomous; branches elongated; cauline leaves lanceolate, glabrous, but with scabrous margins; petals length of the glabrous sepals; capsules shorter than the pubescent pedicels. ⊙. H. Native of Caucasus. C. elongàtum, Bieb. fl. taur. suppl. p. 316. but not of Pursh. Flowers about the size of those of *Stellària Holóstea*. Capsules somewhat cylindrical, broad, a little longer than the calyx.

Caucasian Mouse-ear Chickweed. Fl. Ju. Jul. Pl. 1 foot.

5 C. fri'gidum (Bieb. fl. taur. p. 362. suppl. p. 320.) plant villous; stems branched at the base, ascending, dichotomously umbellate; leaves lanceolate, acute, hairy; sepals lanceolate, acute; petals much longer than the calyx; capsules oblong. ♃. H. Native of the alps of Caucasus. C. purpuráscens, Adams, ap. Web. et Mohr. cat. 1. p. 60. Flowers blue.

Frigid Mouse-ear Chickweed. Fl. May. Pl. ⅛ to ¼ foot.

6 C. Dahu'ricum (Fisch. in Spreng. pl. min. cog. 2. p. 65. Schrank. hort. monac. t. 75. good.) plant smoothish, glaucous; stem dichotomous; leaves cordate-ovate, clasping the stem; fruit-bearing peduncles very long and deflexed; sepals lanceolate, with scarious margins; petals semibifid, longer than the calyx. ♃. H. Native of all parts of Siberia amongst rubbish. C. connàtum? Willd. ex Steud. nom. C. amplexicaúle, Sims, bot. mag. t. 1789. good.—Gmel. sib. 4. p. 148. no. 49. t. 62. f. 1.

Var. β, Holósteum (D. C. prod. 1. p. 415.) leaves linear-lanceolate, clasping the stem and rather ciliated; stems and peduncles rather hairy. Fisch. in litt. C. nìtens, Stev. in litt.

Dahurian Mouse-ear Chickweed. Fl. May, Sept. Clt. 1815. Pl. 1 to 3 feet.

7 C. ma'ximum (Lin. spec. 629.) plant puberulous; stems diffuse; leaves linear-lanceolate, acuminated, tapering to both ends; flowers large, in dichotomous umbels; petals crenated and 2-lobed; capsules ovate, about the length of the calyx. ♃. H. Native of Siberia.—Gmel. sib. 4. p. 150. no. 51. t. 62. f. 2. Stems more or less hairy. Roots creeping.

Largest-flowered Mouse-ear Chickweed. Fl. May, Sept. Clt. 1792. Pl. ½ to 1 foot.

8 C. stellarioi'des (Moc. pl. nutk. icon. ined. D. C. prod. 1. p. 415.) stem erect, dichotomous, branched, generally 3-flowered, and are as well as leaves glabrous; leaves oblong, acuminated; pedicels 1-flowered, terminal; sepals lanceolate; petals semibifid, twice the length of the calyx. ⊙. H. Native of North America, about Nutka.

Stitchwort-like Mouse-ear Chickweed. Fl. June. July. Clt. 1810. Pl. ½ foot.

9 C. molli'ssimum (Poir. suppl. 2. p. 164.) leaves clasping the stem, lanceolate, acute, covered with soft down; panicle diffuse, somewhat umbellate, ⊙? H. Native of Peru. Very like *C. perfoliàtum*.

Softest Mouse-ear Chickweed. Pl. 1 foot.

Sect. II. O'rthodon (from *ορθος, orthos*, straight, and *οδους οδοντος, odous odontos*, a tooth; in allusion to the teeth of the calyx being straight). Ser. mss. in D. C. prod. 1. p. 415. Capsules cylindrical or ovate, with the margins of the teeth revolute.

§ 1. *Petals equal in length to the calyx or smaller.*

* *Capsules cylindrical, longer than the calyx.*

10 C. dicho'tomum (Lin. spec. 628.) plant pilose, clammy; stem branched at the top, dichotomous, with a solitary flower in each fork; peduncles and petals almost equal in length to the calyx; segments of calyx lanceolate, acute; capsules very long, erect; leaves lanceolate. ⊙. H. Native of Spain and Algiers among corn. C. inflàtum and C. glandulòsum, Hort. berl. appear to be only varieties. Myosòtis dichótomum, Mœnch. meth. 225. Alsìne corniculàta, Cluss. hist. 2. p. 184.

Forked-stemmed Mouse-ear Chickweed. Fl. June, Jul. Clt. 1725. Pl. ½ foot.

11 C. rudera'le (Bieb. fl. taur. 1. p. 357. suppl. p. 318.) plant hairy; stem erect, dichotomous; leaves oblong-lanceolate, bluntish; flowers somewhat umbellate; peduncles much longer than the calyx; segments of calyx lanceolate, acute, equal in length to the petals; capsules pendulous, twice the length of calyx. ⊙. H. Native of Caucasus near Kisljar.

Rubbish Mouse-ear Chickweed. Fl. June, July. Clt. 1817. Pl. ½ foot.

12 C. Tau'ricum (Spreng. ex herb. Balb. D. C. prod. 1. p. 415.) plant hairy; stem erect, much branched; leaves ovate, lower ones tapering to the base, upper ones sessile; flowers dichotomously-panicled, equal in length with the peduncles; petals length of calyx; capsules oblong, rather tapering, twice the length of calyx. ⊙. H. Native of Tauria. Very like *C. vulgàtum*, but the stems are more branched, leaves more numerous, and the flowers much smaller.

Taurian Mouse-ear Chickweed. Fl. May, July. Clt. 1820. Pl. ½ foot.

13 C. Illy'ricum (Arduin. spec. D. C. prod. 1. p. 420.) flowers generally pentandrous; petals emarginate; stems very spreading and very hairy; calyx externally hairy. ⊙. H. Native of the Morea and the Island of Cyprus on mountains. C. pilòsum, Sibth. and Smith, fl. græc. t. 454. but not of Horn. Flowers pentandrous, but according to Arduin decandrous. A spreading plant like *C. vulgàtum*.

Illyrian Mouse-ear Chickweed. Fl. June, July. Pl. ¼ foot.

14 C. vulga'tum (Lin. spec. 627.) plant hairy, rather clammy, pale-green; stems erect; leaves elliptic, very blunt; flowers dichotomous, somewhat umbellate, longer than the peduncles; petals equalling the calyx in length; capsules oblong, tapering, twice as long as the calyx. ⊙. H. Native throughout the whole of Europe in fields, waste ground, as well as on walls and dry banks, common. Plentiful in Britain. Smith, engl. bot. t. 789. C. viscòsum, Huds. ang. 200. Curt. lond. fasc. 2. t. 35. Bieb. fl. taur. and suppl. no. 884.—Vaill. par. 1. t. 30. f. 3. C. barbulàtum, Wahl. fl. carp. no. 446. C. rotundifòlium, Sternb. et Hopp. in mem. soc. ratisb. 1818. p. 113. ex Bieb. l. c.

Var. β, glomeràtum (D. C. fl. fr. 4. p. 776.) leaves very

blunt; flowers umbellately glomerate. C. ovàle, Pers. ench. 1. p. 521.

Var. γ, *Americànum* (Ser. mss. in D. C. prod. 1. p. 416.) stem very short, few-flowered; leaves imbricate. C. pùmilum, Rafin. in litt. but not of Curt. lond. C. semidecándrum of American authors. ⊙. H. Native of North America on dry, barren, and sunny hills; frequent in Pennsylvania and Virginia.

Var. δ, *tenéllum* (Ser. mss. in D. C. prod. 1. p. 416.) plant very minute, filiform; stems 1-2-flowered. ⊙. H. Native about Geneva in sandy places. C. tenéllum, Gaud. fl. helv. mss.

Common Mouse-ear Chickweed. Fl. April, July. Britain. Pl. $\frac{1}{8}$ to $\frac{1}{2}$ foot.

15 C. VISCÒSUM (Lin. spec. 627.) plant hairy and clammy, dark-green; stems recumbent; leaves lanceolate-oblong; flowers dichotomously-umbellate; peduncles and petals equal in length with the calyx; capsules rather pendulous, terete, twice the length of the calyx. 4. H. Native of most parts of Europe in meadows, pastures, waste ground and on walls; very common also in North America from Canada to Carolina (Pursh). Plentiful in Britain. Smith, engl. bot. t. 790. C. vulgàtum, Huds. 200. Bieb. fl. taur. and suppl. no. 883. Curt. lond. fasc. 2. t. 34. C. sylváticum, Schleich. exsic. C. obscùrum, Chaub. in St. Amans. fl. agen. p. 180. bouq. t. 4. f. 1.

Clammy Mouse-ear Chickweed. Fl. May, Sept. Britain. Pl. recumbent.

16 C. HOLOSTEOI'DES (Fries, nov. fl. succ. III.) stem pubescent on one side; peduncles pilose; leaves oblong, glabrous; petals shorter than the calyx; margins of calyx scariose. 4. H. Native of Sweden. Horn. hort. hafn. suppl. p. 138.

Holosteum-like House-ear Chickweed. Fl. May, July. Clt. 1818. Pl. $\frac{1}{2}$ foot.

17 C. STRIGO'SUM (Fries, nov. fl. succ. III.) stem erect; leaves oblong, obtuse, strigose; flowers somewhat capitate; sepals lanceolate, hispid, greatly exceeding the petals in length. 4? H. Native of Sweden.

Strigose Mouse-ear Chickweed. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

18 C. PELLU'CIDUM (Chaubard, in St. Amans. fl. agen. p. 181.) bouq. t. 4. f. 2.) plant villous and clammy; stems erect; leaves ovate-roundish; peduncles 3 or 4 times longer than the calyx; bracteas of the universal forks rather membranaceous, pellucid; petals longer than the calyx. ⊙. H. Native of sandy places towards Agen. Perhaps only a variety of *C. semidecándrum*. Flowers pentandrous.

Pellucid-leaved Mouse-ear Chickweed. Fl. April, May. Pl. $\frac{1}{4}$ foot.

19 C. SEMIDECA'NDRUM (Lin. spec. 627.) plant hairy, viscid; stems erect; leaves ovate-lanceolate; flowers pentandrous, dichotomously-umbellate; peduncles longer than the calyx; petals slightly cloven; capsules terete, deflexed after flowering, twice the length of the calyx. ⊙. H. Native of most parts of Europe in waste and sandy ground; also on walls in the outskirts of towns or villages, very frequent. Plentiful in Britain. Smith, engl. bot. t. 1630. Curt. lond. fasc. 2. t. 33.—Vaill. bot. par. t. 30. f. 2.

Var. β, *pùmilum* (Curt. lond. fasc. 6. t. 30.) petals cloven a third of their length. ⊙. H. On dry banks near Croydon, Surrey.

Var. γ, *alsinoìdes* (D. C. fl. fr. 4. p. 776.) calycine lobes scariose on the margins and apices. C. alsinoìdes, Pers. ench. 1. p. 521. ⊙. H. Native about Montpelier.

Semidecandrous Mouse-ear Chickweed. Fl. March, April. Britain. Pl. $\frac{1}{4}$ foot.

20 C. PENTA'NDRUM (Lin. spec. 627.) plant procumbent, and rather clammy; radical leaves spatulate; cauline ones oval-orbicular; segments of calyx acuminated, longer than the slightly cloven petals; capsules shorter than the pedicels. ⊙. H. Native of Spain and Tauria among rubbish. Bieb. fl. taur. 1. p. 359. suppl. p. 319. Perhaps a mere variety of the last.

Pentandrous Mouse-ear Chickweed. Fl. April, May. Clt. 1821. Pl. $\frac{1}{4}$ foot.

21 C. ANDRO'SACEUM (Ser. mss. in D. C. prod. 1. p. 416.) plant very small, and very hairy; leaves ovate; stem dichotomous; flowers rather capitate in threes on stalks, involucrate at the base; segments of calyx narrow, very acute. ⊙. H. Native about Constantinople. C. pilòsum, Castagne in litt. but not of Horn. nor Ledeb. Habit of *Andrósace villòsa*.

Androsace-like Mouse-ear Chickweed. Fl. April, May. Pl. $\frac{1}{8}$ foot.

22 C. GRA'CILE (Duf. in ann. gen. sc. ph. 7. p. 304.) plant erect, slender, dichotomous, clothed with clammy pubescence; lower leaves ovate, stalked, upper ones ovate-lanceolate, sessile; flowers solitary, distant; peduncles hardly longer than the flowers, fruit-bearing ones deflexed; corolla length of calyx; capsules protruding, oblong; stamens either 5 or 10. ⊙. H. Native of Spain on rocks at a place called La Sierra de Vernisa, near St. Philip. Very like *C. pentándrum* or *C. semidecándrum*.

Slender Mouse-ear Chickweed. Fl. May, July. Clt. 1818. Pl. $\frac{1}{4}$ foot.

23 C. BRACHYPE'TALUM (Desp. in Pers. ench. 1. p. 520.) stem erect, tomentose, dichotomous; leaves ovate; flowers panicled; peduncles longer than the flowers; calyx villous, longer than the petals; capsules hardly exceeding the length of the calyx. ⊙. H. Native of Europe among rubbish. D. C. fl. fr. 4. p. 777. icon. pl. gall. t. 44. C. canéscens, Horn. ex Spreng. in herb. Balb. Stems and leaves very hairy.

Short-petalled Mouse-ear Chickweed. Fl. April, May. Clt. 1816. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

24 C. SPATULA'TUM (Pers. ench. 1. p. 520.) stem simple, rather villous; leaves hairy, lower ones obovately-spatulate, stalked, cauline ones somewhat ovate, sessile; flowers glomerate. ⊙. H. Native of Jamaica. Capsules a little longer than the calyx.

Spatulate-leaved Mouse-ear Chickweed. Fl. June, July. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

25 C. FU'LVUM (Rafin. prec. p. 36. journ. bot. 1814. p. 269.) plant clothed with fulvous hairs; stem erect, angular; leaves obtuse; flowers dichotomous; sepals lanceolate, acute; petals equal in length to the calyx; capsules nodding, arched. ⊙. H. Native of Pennsylvania and Virginia.

Fulvous-haired Mouse-ear Chickweed. Fl. May, June. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

26 C. MURA'LE (Desp. in D. C. fl. fr. 5. p. 609.) plant hairy, erectish, stiff; leaves ovate-oblong, acute, numerous; flowers length of pedicels, disposed in bundles; petals emarginate, equal in length to the calyx; capsules oblong, scarcely exceeding the calyx in length. 4? H. Native of France.

Wall Mouse-ear Chickweed. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

27 C. DIFFU'SUM (Pers. ench. 1. p. 520.) stem much branched, villous, opaque, diffuse; leaves ovate-lanceolate, rather hispid; flowers dichotomously panicled, numerous; pedicels length of flowers; petals emarginate, shorter than the calyx; capsules obovate, about equal in length to the calyx. 4. H. Native? Habit of *Stellària arenària*.

Diffuse Mouse-ear Chickweed. Fl. April, Sept. Clt. 1820. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

** *Capsules egg-shaped, equalling the calyx in length, or shorter.*

28 C. SERPYLLIFÒLIUM (Willd. enum. suppl. p. 26? Link. enum. 1. p. 433.) stem decumbent at the base, hairy, rather clammy; leaves lanceolate, tapering to the base, distant; flowers dichotomous, on short pedicels, with a solitary flower in each

fork, on a long pedicel; capsules ovate, shorter than the calyx. 4. H. Native of Siberia. C. serpillifòlium, Bieb. ex Stev. in litt. 1817.

Wild-thyme-leaved Mouse-ear Chickweed. Fl. June, July. Clt. 1817. Pl. decumbent.

29 C. longifo'lium (Willd. spec. 2. p. 814. but not of Poir.) stem erect, dichotomous, hairy, clammy; leaves linear-lanceolate; sepals with membranaceous margins; petals shorter than the calyx; fruit-bearing peduncles horizontal; capsules length of calyx. ⊙. H. Native of Armenia.

Long-leaved Mouse-ear Chickweed. Pl. ¼ to ½ foot.

30 C. Commersonia'num (Ser. mss. in D. C. prod. 1. p. 417.) stem dichotomous, viscid, angular; leaves linear, very long, sessile, rather viscid; flowers dichotomously-umbellate; sepals lanceolate, acute, hardly membranaceous at the margins; corolla and capsule length of calyx. ⊙. 4? H. Native of Monte Video. C. longifòlium, Juss. ex Poir. suppl. 2. p. 164. but not of Willd.

Commerson's Mouse-ear Chickweed. Pl. ½ foot.

31 C. aqua'ticum (Lin. spec. 629.) plant rather hairy; root creeping; stem weak, straggling, round, forked; leaves heart-shaped, sessile; peduncles lateral, solitary, 1-flowered, viscid; sepals ovate, slightly marginate; capsule ovate, length of calyx or longer, opening by 5 cloven teeth. 4. H. B. Native of many parts of Europe in watery places and on the margins of rivers and ditches; plentiful in Britain. Smith, eng. bot. t. 538. Curt. fl. lond. fasc. 1. t. 34. The general appearance of this plant much resembles *Stellària némorum*. Petals white, equal with the calyx. This plant is said by M. Sering to be the *Larbrèa aquática* of St. Hilaire, but that is a truly distinct plant with perigynous stamens belonging to *Paronychièæ*.

Water Mouse-ear Chickweed. Fl. July. Britain. Pl. decumbent.

32 S. te'nue (Viv. app. fl. cors. in Schlecht. Linnæa. 1. p. 501.) smooth, erect; leaves linear-lanceolate; peduncles elongated; sepals 3-nerved, with membranous margins, nearly twice the length of the corolla; capsule oblong. ⊙. H. Native of Corsica.

Low Mouse-ear Chickweed. Fl. June, July. Pl. ½ foot.

33 S. heterophy'llum (Viv. app. fl. cors. in Schlecht. Linnæa. 1. p. 501.) leaves smoothish, lower ones ovate, upper ones linear; calyx hairy, equalling the corolla in length; capsule round. ⊙. H. Native of Corsica.

Variable-leaved Mouse-ear Chickweed. Fl. Ju. Jul. Pl. ¼ ft.

§ 2. *Petals exceeding the calyx in length.*

* *Capsules equal in length with the calyx, or shorter.*

34 C. Ma'nticum (Lin. spec. 629.) plant very smooth; leaves lanceolate-linear; stem straight, dichotomous; peduncles very long; sepals and bracteas lanceolate, acute, with membranaceous margins, shorter than the corolla; capsules ovate, almost equal in length to the calyx. ⊙. H. Native of Italy and Hungary on the mountains. Walds. and Kit. hung. 1. p. 96. t. 96. Stellària Mántica, D. C. fl. fr. 4. p. 794.

Mantic Mouse-ear Chickweed. Fl. June, July. Clt. 1801. Pl. ½ to 1 foot.

35 C. rupe'stre (Fisch. in litt. D. C. prod. 1. p. 417.) plant rather pilose; stems prostrate, branched; leaves ovate-linear; flowers dichotomous, with a solitary flower in each fork on a long peduncle; sepals ovate, obtuse, with membranaceous margins; petals cloven, much longer than the calyx; capsules egg-shaped, almost equal in length to the calyx. 4. H. Native of the alps of Siberia in bogs overflowed by the melting of the snow above a place called Tschala.

Rock Mouse-ear Chickweed. Fl. May, July. Clt. 1820. Pl. prostrate.

36 C. fonta'num (Baumg. fl. trans. ex Spreng. syst. 2. p. 416.) stem creeping, somewhat tetragonal, hairy; leaves pilose, radical ones spatulate, cauline ones ovate; flowers panicled; petals shorter than the calyx; capsule ovate-globose. 4. H. Native of Transylvania.

Fountain Mouse-ear Chickweed. Pl. creeping.

37 C. cilia'tum (Kit. ex Spreng. syst. 2. p. 417.) stem straight; leaves linear, in fascicles, scabrous above, but revolute and smooth beneath; peduncles terminal, elongated, corymbose; petals bifid, much longer than the obtuse sepals. 4. H. Native of Croatia on the Matra mountains. C. Matrénse, Kit. in Spreng. pl. min. cogn. 1. p. 33. Panicle terminal, leafy.

Ciliated Mouse-ear Chickweed. Fl. Ju. Jul. Clt. 1817. Pl. ½ ft.

38 C. elonga'tum (Pursh, fl. amer. sept. 1. p. 321. but not of Bieb.) plant hairy; leaves linear, longer than the internodes, divaricating; peduncles terminal, elongated, di-trichotomous; bracteas ovate; petals emarginate, twice the length of the acute sepals; capsules somewhat globose. 4. H. Native of North America on the plains of the Columbia river.

Elongated-peduncled Mouse-ear Chickweed. Fl. Apr. May.

39 C. defle'xum (Ser. mss. in D. C. prod. 1. p. 417.) plant downy; stem tall, dichotomous, panicled; leaves ovate-lanceolate, waved; flowers erect, small; petals exceeding the calyx; capsule-bearing peduncles deflexed; capsules hardly equalling the calyx in length. 4? H. Native of the north of Persia.

Deflexed-peduncled Mouse-ear Chickweed. Fl. May, July. Pl. 1 foot.

40 C. tenuifòlium (Pursh, fl. amer. sept. 1. p. 321.) plant tufted, clothed with very fine pubescence; leaves narrow, linear, longer than the internodes; flowers on long peduncles; petals obovate, emarginate, almost three times the length of the acute sepals. 4. H. Native of North America on the banks of the Schuylkill and Delaware, Pennsylvania. Very like *C. arvénse*.

Fine-leaved Mouse-ear Chickweed. Fl. May, Ju. Pl. ¼ foot.

41 C. furca'tum (Cham. in Schlecht. Linnæa. 1. p. 61.) pubescent, glandular above; stem nearly simple; leaves broad, lanceolate, acute, hairy; flowers dichotomously-panicled; sepals obtuse; petals twice the length of the sepals; capsule shorter than the calyx. ⊙. H. Native of Siberia.

Forked-stemmed Mouse-ear Chickweed. Fl. June, July. Pl. ½ to 1 foot.

42 C. campanula'tum (Viv. annal. bot. 1. p. 2. p. 171. t. 1.) plant ascending, diffuse, villous; radical leaves spatulate; cauline ones oblong; panicle dichotomous; corollas campanulate; petals semibifid, twice as long as the calyx; capsules ovoid, equal in length with the calyx. ⊙. H. Native about Rome. Sebas. rom. pl. fasc. 2. p. 12. t. 3. f. 1. C. Ligústicum, Viv. cat. hort. Dinegro. C. præ'cox, Ten. fl. neap. 1. p. 27.

Campanulate-flowered Mouse-ear Chickweed. Fl. April, May. Clt. 1824. Pl. ½ foot.

43 C. inca'num (Ledeb. mem. acad. scienc. potz. 5. p. 514.) plant erect, hoary, pubescent; leaves oblong-linear, acute, clothed with very short, appressed hairs; peduncles trichotomous; sepals with membranaceous margins; petals spatulate, semibifid at the apex, twice the length of the calyx; capsules globose, inclosed in the calyx. 4. H. Native of the south of Siberia.

Hoary Mouse-ear Chickweed. Fl. June, July. Pl. ¼ to ½ ft.

44 C. grandiflo'rum (Waldst. et Kit. pl. hung. 2. t. 168.) stems creeping; leaves linear, acute, with somewhat revolute margins, hoary, tomentose; flowers dichotomous; sepals oblong, scarcely hoary, with scarious margins; petals twice the length of calyx; capsules oblong. 4. H. Native of Hungary and Iberia on dry hills. West. in flora, 1820. p. 357. C. argén-

teum, Bieb. fl. taur. 1. p. 361. suppl. 320. C. incànum, Hoffm. hort. mosc. ann. 1808. ex Bieb. l. c. Very like *C. tomentòsum*, but differs in being less hoary, and the leaves narrower and more acute, hardly revolute at the margins.

Great-flowered Mouse-ear Chickweed. Fl. June, July. Clt. 1818. Pl. ½ foot.

** *Capsules exceeding the calyx in length.*

45 C. TOMENTO'SUM (Lin. spec. 629. var. β.) root creeping; stem diffuse, hoary-tomentose as well as the leaves, which are oblong-spatulate, upper ones lanceolate; panicle erect, dichotomous; sepals elliptic, lanceolate, hoary-tomentose, with scarious margins; capsules sub-cylindrical, longer than or equal with the calyx. ♃. H. Native of the south of Europe on mountains in Provence, Greece, &c. In the gardens of France it is called *Oreille de souris*. Smith, fl. græc. 455. Col. phytob. ed. 1744. p. 115. t. 31. C. Colúmnæ, Tenor. prod. p. 27. cat. app. p. 44. C. tomentòsum, Lam. dict. 1. p. 680. Flowers large.

Tomentose Mouse-ear Chickweed. Fl. June, July. Clt. 1648. Pl. ½ foot.

46 C. WILLDENO'WII (H. B. et Kunth, nov. gen. et spec. amer. 6. p. 29.) stems erect, forked at the apex, and are woolly as well as the leaves, which are ovate-lanceolate and acute; calyx pubescent; capsules oblong-cylindrical, many-seeded, rather arched, hardly exceeding the calyx in length; seeds brown, small. ♃. H. Native of Quito in South America. Stellària móllis, Willd. herb. ex Schlecht. berl. mag. 1816. p. 196. Flowers about the size of those of *C. arvénse*.

Willdenow's Mouse-ear Chickweed. Fl. June, Jul. Pl. ½ ft.

47 C. NIPAULE'NSE; hairy; lower leaves spatulate, upper ones lanceolate, acute; flowers terminal, glomerate; sepals acute, and are as well as the pistils shorter than the corolla; stem decumbent, branched. ♃. H. Native of Nipaul at Narainhetty. C. grandiflòrum, D. Don, prod. fl. nep. 216. Stems decumbent, much branched. Flowers large, white.

Nipaul Mouse-ear Chickweed. Pl. ½ foot.

48 C. BIEBERSTEI'NII (D. C. in mem. soc. phys. gen. vol. 1.) root creeping; stem diffuse, woolly-tomentose as well as the leaves, which are ovate-lanceolate; peduncles erect, dichotomous; sepals oblong, tomentose, with scarious margins; capsules ovate, subcylindrical, longer than the calyx. ♃. H. Native of Tauria on the higher mountains. Hook, bot. mag. t. 2702. C. tomentòsum, var. α, Lin. spec. 629.? C. rèpens, Bieb. fl. taur. 1. p. 360. suppl. 320. but not of Lin.—Moris, oxon. 2. sect. 5. t. 22. f. 44.? Differing from *C. tomentòsum* in the leaves being much broader and the flowers and fruit larger.

Bieberstein's Mouse-ear Chickweed. Fl. June, July. Clt. 1820. Pl. ½ foot.

49 S. BEERINGIA'NUM (Cham. in Schlecht. Linnæa. 1. p. 62.) plant hairy and clammy above; stems tufted, leafy at the base, erect, elongated above and few-leaved; leaves oblong-acutish; flowers at length drooping; sepals elliptical, acute; petals and capsules one-half longer than the calyx. ♃. G. Native of the Cape of Good Hope.

Beering's Mouse-ear Chickweed. Pl. ¼ to ½ foot.

50 C. PUSI'LLUM (Ser. mss. in D. C. prod. 1. p. 418.) stems erect, generally 2-flowered; leaves ovate, finely tomentose, sessile; sepals lanceolate, acute, hairy; capsules cylindrical, 3-times longer than the calyx, with small teeth. ⊙. H. Native of Siberia.

Small Mouse-ear Chickweed. Fl. Ju. Clt. 1824. Pl. ⅛ ft.

51 C. LANA'TUM (Lam. dict. 1. p. 680.) stems prostrate, tufted; leaves densely woolly, lower ones roundish, upper ones ovate; flowers dichotomous; sepals lanceolate, with scariose margins; capsules ovate-cylindrical, almost double the length of the calyx. ♃. H. Native of the Alps of Europe. Myosòtis lanàta, Mœnch. suppl. p. 308. C. villòsum, Baumg.

Var. β, *Thomasiànum* (Ser. mss. in D. C. prod. 1. p. 418.) stems, leaves, and calyxes glabrous. ♃. H. Native of the Pyrenees, in a valley called Eynes.

Woolly Mouse-ear Chickweed. Fl. June, July. Clt. 1819. Pl. prostrate.

52 C. IMBRICA'TUM (H. B. et Kunth, nov. gen. et spec. amer. 6. p. 28.) plant much branched, creeping; leaves rather membranaceous, imbricated in four rows, rather spatulate-oblong, obtuse, clothed with soft hairs on both surfaces; capsules oblong-cylindrical, longer than the hairy calyx; seeds roundish, brown, emarginate at the base. ♃. F. Native of South America on the summits of the mountains of Cotopaxi and Antisana, at the height of 5700 to 6600 feet. Flowers about the size of those of *C. vulgàtum*.

Imbricated-leaved Mouse-ear Chickweed. Pl. ½ foot.

53 C. FISCHERIA'NUM (Ser. mss. in D. C. prod. 1. p. 419.) plant hairy, rather clammy; stems prostrate; leaves ovate, sessile, distant; flowers dichotomously umbellate, on short peduncles, with a solitary flower in each fork on a long peduncle; sepals lanceolate, bluntish, with scariose margins; petals twice as long as the calyx. ♃. H. Native of Kamtschatka, Unalaschka, and Behring's Straits. C. hirsùtum, Fisch. in litt. but not of Tenore. C. pilòsum, Ledeb.? Very like *C. viscòsum*, and *alpìnum*.

Fischer's Mouse-ear Chickweed. Fl. June, July. Pl. prostrate.

54 C. ALPI'NUM (Lin. spec. 628.) root creeping; stems prostrate; leaves elliptical, subglabrous, or clothed with white hairs; panicle dichotomous; flowers few, on long peduncles; sepals oblong, recurved, bluntish, with scarious, membranaceous margins; petals twice as long as the calyx; capsules oblong, recurved, almost double the length of the calyx. ♃. H. Native of the Pyrenees. On the mountains of Scotland and Wales by the sides of alpine rills, plentifully. Smith, engl. bot. t. 472. Fl. dan. t. 6. C. latifòlium, Lighf. scot. p. 242. t. 10. C. glabràtum, Hartm. There is a more hoary variety which has been often taken for *C. latifòlium* of Lin. It is a very polymorphous plant, sometimes green, sometimes hoary. The three following varieties are enumerated by Mr. Brown.

Var. α; leaves oblong or rarely short-oval; peduncles dichotomous, rarely 1-flowered; hairs on the stems tipped with glands; capsule oblong, nearly twice the length of the calyx. In Melville Island.

Var. β; leaves broad, ovate; peduncles dichotomous; hairs for the most part acute; inner leaflets of the calyx smoothish. In Melville Island.

Var. γ; hairy; leaves elliptical or lanceolate; peduncles divided and solitary; hairs for the most part acute; capsule a little longer than the calyx. In Melville Island.

Alpine Mouse-ear Chickweed. Fl. June, July. Britain. Pl. ¼ foot, prostrate.

55 C. LITHOSPERMIFÒLIUM (Fisch. mem. soc. mosc. 3. p. 81.) stem branched, spreading; leaves lanceolate, acute, pubescent; flowers solitary; petals emarginate, twice as long as the calyx; sepals elliptical; ovary globose. ♃. H. Native of Siberia.

Lithospermum-leaved Mouse-ear Chickweed. Fl. June, July. Pl. ¼ to ½ foot.

56 C. OVA'TUM (Hoppe in Willd. enum. p. 493.) root creeping; plant rather hairy; stems prostrate; leaves ovate, acute, glabrous, a little ciliated; flowers terminal, somewhat corymbose; petals thrice as long as the calyx; capsules roundish. ♃. H. Native of the Alps of Carinthia. C. Carinthìacum,

West.? C. alpìnum, Hoppe, herb. Viv. Common peduncles dichotomous.

Var. β, filifórme (Schleich. pl. exsic.) stems 1-flowered; peduncles elongated, deflexed. C. pedunculàtum, Gaud. in litt. 1814. Perhaps a proper species.

Ovate-leaved Mouse-ear Chickweed. Fl. June, July. Clt. 1816. Pl. $\frac{1}{4}$ foot.

57 C. latifòlium (Lin. spec. 629.) plant hairy, rather viscid; stems prostrate, 1, rarely 3-flowered; flowers terminal; peduncles longer than the flowers; leaves ovate; sepals ovate, with scarious margins; petals twice the length of the calyx; capsules ovate, turgid, protruding beyond the calyx. ♃. H. Native of the Alps of Switzerland, France, and Austria. On the Welsh and Scottish mountains. Smith, engl. bot. t. 473. Jacq. coll. 1. p. 256. t. 20. C. tomentòsum, Huds. ed. 1. p. 176. The whole plant is clothed with tawny rigid hairs.

Broad-leaved Mouse-ear Chickweed. Fl. June, July. Britain. Pl. procumbent.

58 C. glacia`le (Gaud. in litt. 1814. D. C. prod. 1. p. 419.) plant clothed with very clammy hairs; stems tufted, dense, 1-flowered; peduncles length of the flowers; leaves elliptical or ovate; sepals ovate, with rather scarious margins; petals twice as long as the calyx. ♃. H. Native of Switzerland on the highest Alps near the limits of perpetual snow. C. uniflòrum, Thom. dried plants. Perhaps only a variety of *C. latifòlium*.

Icy Mouse-ear Chickweed. Fl. Ju. Jul. Clt. 1819. Pl. $\frac{1}{4}$ ft.

59 C. sylva'ticum (Walds. et Kit. pl. hung. 1. p. 100. t. 97.) plant diffuse, creeping; stems dichotomously panicled; lower leaves ovate, the rest oblong-lanceolate; flowers erect on long peduncles; petals semibifid, twice the length of the ovate-lanceolate sepals; capsules much longer than the calyx. ♃. H. Native of Hungary and Naples in woody valleys, and probably in Siberia. C. Sibíricum, Stev. in litt. The Hungarian plant is said to be a perennial while the Neapolitan one is annual.

Wood Mouse-ear Chickweed. Fl. Ju. Jul. Clt. 1820. Pl. $\frac{1}{4}$ ft.

60 C. litigiòsum (Lois. not. ajout. 1 vol. 8vo.) hairy, very clammy, dark-green; stem ascending, much branched; leaves small, ovate, acute; flowers loosely-panicled; peduncles longer than the calyx; petals bifid, exceeding the calyx; stamens 10; styles 5, long; capsule exserted; seed hardly tuberculated. ♃? H. Native of France in the Bois de Bologne in arid dry places. Flowers white.

Litigious Mouse-ear Chickweed. Fl. May, June. Pl. $\frac{1}{4}$ foot.

61 C. arve'nse (Lin. spec. 628.) stem declinate; leaves linear-lanceolate, bluntish, rather pilose at the base; flowers dichotomously-panicled; peduncles clothed with deflexed pubescence; petals twice the length of the obtuse sepals; capsules oblong-cylindrical, shorter than the calyx. ♃. H. Native throughout Europe in fields, and on banks and hillocks on a gravelly or chalky soil, as well as on dry hills and rocks in Pennsylvania, according to Pursh. Smith, engl. bot. t. 93. Curt. lond. fasc. 6. t. 29. Fl. dan. t. 629.—Vaill. bot. par. t. 30. f. 4, 5. C. rèpens, Lin. spec. 628? Roots creeping.

Corn-field Chickweed. Fl. May, Aug. Britain. Pl. $\frac{1}{4}$ to 1 ft.

62 C. stri'ctum (Lin. spec. 629? D. C. fl. fr. 5. p. 610.) stems declinate; leaves almost linear, acuminated, glabrous or rather hairy; peduncles clothed with glandular hairs; petals twice the length of the calyx; capsules oblong. ♃. H. Native of Europe on the Alps. Perhaps only a variety of *C. arvénse*. Root creeping.

Var. α, suffruticòsum (D. C. prod. 1. p. 419.) leaves very narrow, smoothish. C. suffruticòsum, Lin. spec. 629. C. laricifòlium, Vill. delph. 4. p. 644.

Var. β, mólle (D. C. l. c.) leaves very narrow, hairy. C. mólle, Vill. delph. 3. p. 644.

Var. γ, lineàre (D. C. l. c.) leaves linear-lanceolate, elongated, acuminated, glabrous. C. lineàre, All. ped. 2. p. 365. t. 88. f. 4.

Var. δ, commùne (D. C. l. c.) leaves linear, bluntish. C. stríctum, Lin. spec. 629? Centúnculus angustifòlius, Scop. carn. 1. t. 19. C. ambíguum, Fisch. in litt.

Straight Mouse-ear Chickweed. Fl. May, Aug. Clt. 1793. Pl. $\frac{1}{2}$ foot.

63 C. dioi'cum (Ait. hort. kew. ed. 1. vol. 2. p. 120. ed. 2. vol. 3. p. 137.) plant hairy and viscid; leaves lanceolate; flowers dioecious; petals 3 times longer than the calyx. ♃. H. Native of Spain.

Dioecious-flowered Mouse-ear Chickweed. Fl. May, July. Clt. 1766. Pl. $\frac{1}{2}$ to 1 foot.

64 C. Pennsylva'nicum (Horn. hort. hafn. p. 435.) stems prostrate, and are as well as linear-lanceolate leaves pubescent; corolla twice the length of the calyx; panicle dichotomous; flowers on very long peduncles. ♃. H. Native of Pennsylvania on dry hills and rocks. Roots creeping. C. arvénse, Pursh. fl. amer. sept. 1. p. 321? Very like *C. arvénse*, but differing in the petals being narrower and the capsules globose. Perhaps only a variety of *C. stríctum*.

Pennsylvanian Chickweed. Fl. Ju. July. Clt. 1810. Pl. 1$\frac{1}{2}$ ft.

65 C. Colsma'nni (Lehm. ex Spreng. syst. 2. p. 418.) stem straight; leaves in fascicled whorls, reflexed, oblong-linear, smoothish; peduncles terminal, subcorymbose; petals entire, thrice the length of the bluntish sepals. ♃. H. Native of the Straits of Magellan. Perhaps a species of *Spergulària*.

Colsmann's Mouse-ear Chickweed. Fl. June, July. Clt. 1827. Pl. $\frac{1}{2}$ foot.

66 C. nu`tans (Rafin. prec. p. 36.) stem erect, clothed with clammy pubescence; leaves linear-oblong, acute; flowers rather umbellate, on long peduncles; petals exceeding the calyx in length; capsules nodding, twice the length of the calyx. ⊙. H. Native of Pennsylvania. C. longipedunculàtum, Muhl. cat. 1813. C. glutinòsum, Nutt. gen. amer. 1. p. 291. but not of H. B. et Kunth. Radical leaves spatulate, upper ones stem-clasping.

Nodding-capsuled Mouse-ear Chickweed. Fl. June, July. Pl. 1 foot.

67 C. Ledebouria'num (Ser. mss. in D. C. prod. 1. p. 420.) stem erect, pilose; leaves oblong, obtuse, under surface glaucous; flowers 2-3, erect, nodding after flowering; petals 3-times longer than the calyx; sepals obtuse, with membranaceous margins; capsules oblong, longer than the calyx. ♃. H. Native of Siberia. C. pilòsum, Ledeb. acad. scienc. petersb. 5. p. 514. no. 26. but not of Horn.

Ledebour's Mouse-ear Chickweed. Fl. June, July. Pl. $\frac{1}{2}$ ft.

68 C. filifòrme (Vest. in fl. 1820. p. 353.) stems tufted; leaves filiform, trigonal, fleshy; sepals lanceolate; petals twice the length of the calyx; capsules oblong, exceeding the calyx in length. ♃. H. Native of Upper Styria. Panicle dichotomous. Pedicels about equal in length to the calyx.

Filiform-leaved Chickweed. Fl. June, July. Pl. $\frac{1}{2}$ foot.

69 C. ri'gidum (Ledeb. mem. acad. petersb. 5. p. 514. no. 25.) plant hairy; stem erect, very simple at the base, but forked at the apex; leaves oblong, acute; peduncles elongated; sepals lanceolate, acute; petals bifid, longer than the calyx; capsules oblong, shining, twice as long as the calyx. ♃. H. Native of Siberia. The whole plant is clothed with stiff spreading hairs. Stems straight, stiff, tall.

Var. β, Chamissòni (See Cham. in Schlecht. Linnæa 1. p. 61.) leaves narrower and acute. All parts of the plant smaller. ♃. H. Native of the island of Unalaschka.

Stiff-stemmed Mouse-ear Chickweed. Fl. June, July. Pl. 2 feet.

70 C. glutinòsum (H. B. et Kunth, gen. et spec. amer. 6. p. 29.) plant villous, clammy, tawny; stems ascending, dichotomously branched at the apex; leaves lanceolate, narrow, acute; capsules cylindrical, rather arched, twice the length of the calyx; seeds rough, brown. 4. H. Native of New Granada. Petals 2-lobed.

Clammy Mouse-ear Chickweed. Fl. June, July. Pl. ½ foot.

71 C. rivula're (St. Hil. fl. bras. 2. p. 166.) puberulous; stem trailing; leaves obovate-oblong, tapering at the base, mucronulate; flowers loosely cymose, on long pedicels; petals 3-times longer than the calyx. ⊙. H. Native of Brazil in the province of Cis-platine in rivulets. Plant 1 foot long. Capsule sub-cylindrical, twice the length of the calyx.

Rivulet Mouse-ear Chickweed. Pl. trailing.

72 C. humifu'sum (St. Hil. fl. bras. 2. p. 166.) smoothish; stem trailing, creeping; leaves oblong, narrowed at both ends; flowers solitary, on long peduncles; petals twice the length of the sepals. ⊙. H. Native of Brazil in the northern part of the province of Rio Grande, in humid places.

Trailing Mouse-ear Chickweed. Pl. trailing.

† *Species not enough known.*

73 C. bractea'tum (Rafin. prec. p. 36.) plant pubescent; stem weak; leaves oblong, almost mucronate; flowers erect, dichotomous, bracteate; bracteas ovate, acute; petals length of calyx; capsules nerveless, erect. 4 ? H. Native of Pennsylvania.

Bracteate Mouse-ear Chickweed. Fl. June, July. Pl. ½ ft.

74 C. pube'scens (Gold. pl. canad. in edinb. phil. journ. april, 1822.) plant pubescent, hairy; stem deflexed, pilose; leaves linear-lanceolate, longer than the internodes; panicle terminal, generally 4-flowered. 4 ? H. Native of Canada.

Pubescent Mouse-ear Chickweed. Fl. June, July. Clt. 1821. Pl. ¼ foot.

75 C. pilòsum (Horn. hort. hafn. p. 965.) leaves linear-lanceolate, obtuse, woolly, with reflexed margins; petals larger than the calyx. 4. H. Native of? Sent by Schrader under the name of *C. lanàtum* of Pers. Link. enum. 1. p. 434. Like *C. viscòsum*.

Pilose Mouse-ear Chickweed. Fl. June, July. Clt. 1820. Pl. ¼ foot.

76 C. Palla'ssii (Vest. in flora, 1820. p. 356.) leaves lanceolate, pubescent, stiff, acute, lower ones equal in length to the internodes, upper ones longer; stem generally 1-flowered; petals semibifid. 4 ? H. Native of? Flower large.

Pallas's Mouse-ear Chickweed. Fl. June, July. Pl. ¼ foot.

77 C. Sprenge'lii (Ser. mss. in D. C. prod. 1. p. 421.) leaves linear, very long, and are as well as stems pubescent; peduncles terminal, umbellate. ♂. H. Native of? C. tenuifòlium, Spreng. in Horn. hafn. suppl. p. 138. but not of Pursh.

Sprengel's Mouse-ear Chickweed. Fl. May, June. Clt. 1819. Pl. ½ foot.

78 C. fimbria'tum (Ledeb. mem. acad. scienc. petersb. 5. p. 516. no. 27.) plant diffuse; stems angular, pilose; leaves lanceolate, acuminate, glabrous, ciliated; sepals oblong; petals multifid; capsules globose. 4. H. Native of Siberia.

Fringed-petalled Chickweed. Fl. June, July. Pl. ½ foot.

79 C. Tenorea'num (Ser. mss. in D. C. prod. 1. p. 421.) plant diffuse, hairy; leaves elliptical, obtuse; hairy-ciliated, as well as the calyx, which is longer than the corolla; flowers panicled; capsules oblong. ⊙. H. Native of Naples on the mountains. C. pilòsum, Tenore, cat. 1819. p. 44. but not of Horn.

Tenore's Mouse-ear Chickweed. Fl. May, July. Clt. 1822. Pl. ¼ foot.

80 C. Scara'ni (Tenore, prod. p. 27. cat. 1819. p. 44.) plant diffuse; leaves lanceolate-oblong, acute, clothed with green tomentum on both surfaces; petals twice as long as the calyx; capsules ovate; fruiting peduncles horizontal. 4. H. Native of Naples on the mountains.

Scarani's Mouse-ear Chickweed. Fl. June, July. Clt. Pl. ½ ft.

81 C. Samnia'num (Ser. mss. in D. C. prod. 1. p. 421.) plant diffuse; branches divaricating; leaves lanceolate, linear, tomentose, green, woolly; panicle dichotomous; petals twice the length of the calyx; capsules oblong. 4. H. Native of Italy on the mountains of Samnium. C. longifòlium, Tenore, prod. p. 27. Cat. 1819. p. 451. but not of Willd. Juss. not Poir.

Samnium Mouse-ear Chickweed. Fl. June, July. Pl. ¼ to ½ foot.

82 C. hirsu'tum (Tenore, prod. p. 27. cat. 1819. p. 45.) plant diffuse, hairy, viscid; stems creeping; leaves oblong, obtuse, tapering to the base, hairy, canescent; flowers panicled; petals twice the length of the calyx; capsules oblong, rather incurved. 4. H. Native of Italy on the mountains of Samnium.

Hairy Mouse-ear Chickweed. Fl. June, July. Clt. 1822. Pl. ¼ foot.

Cult. *C. tomentòsum*, *grandiflòrum*, and *Dahúricum*, are the only species of this genus worth cultivating as border flowers. *C. latifòlium*, *C. alpìnum*, and *C. glaciàle*, are well adapted for rock-work, or to be grown in small pots, in a mixture of loam, sand, and peat; the rest are only worth preserving in general collections. They only require the treatment of other hardy plants. The perennial species are increased by dividing the plants at the roots. The annual and biennial species by seeds, which should be sown in the open ground in the spring.

XXXV. BRACHYSTE'MMA (from βραχυς, *brachys*, short, and στεμμα, *stemma*, a crown; in allusion to short minute petals.) D. Don, prod. fl. nep. p. 216.

Lin. syst. *Pentándria*, *Digýnia*. Calyx 5-parted. Petals 5, minute, elliptical, acute. Stamens 5, much shorter than the petals. Styles 2, distinct. Capsules spherical, 1-celled, with 4 valves opening even to the base, 1-seeded. A diffuse branched, smoothish herb. Stems pentagonal, rather pilose at the top. Leaves opposite, elliptical, oblong, mucronate, stalked, with cartilaginous rather serrulated margins. Flowers paniculately corymbose, terminal or axillary. Peduncles many-flowered, and are as well as pedicels glandular, furnished with linear bracteas at the base, which are ciliated on the margins with glandular hairs. Calyx large, coloured, shining. Corolla white.

1 B. calyci'num (D. Don, l. c.) 4. H. Native of Nipaul. Arenària Nepaulénsis, Spreng. syst. append. p. 181.

Large-calyxed Brachystemma. Pl. diffuse, 1 foot.

Cult. Not worth cultivating except in a botanic garden. Only requiring to be planted in the open border. It may be either increased by dividing the plant at the root or by seed.

XXXVI. CHERLE'RIA (in honour of John Henry Cherler, who assisted John Bauhin in his general history of plants.) Hall. itin. helv. 1. Lin. gen. no. 775. Lam. ill. t. 379. D. C. prod. 1. p. 421.

Lin. syst. *Decándria*, *Trigýnia*. Calyx 5-sepalled (f. 81. *b*.) Petals 5, small, emarginate. Stamens 10 (f. 81. *b*.). Styles 3 (f. 81. *g*.). Capsules 3-celled, 3-valved. Cells 2-seeded.—Smooth, tufted, small, moss-like herbs, with small awl-shaped densely-crowded leaves, and small solitary white or rose-coloured flowers. Nos. 5 and 6 differ from the rest in the petals being much longer than the sepals. Perhaps they belong to *Arenària*.

1 C. sedoi'des (Lin. spec. 608.) plant small, tufted; leaves triquetrous, bluntish, slightly toothed on the margin, spreading; valves of capsule bluntish, callose at the apex, longer than the calyx. ♃. H. Native of the Alps of Europe in moist spots near the limits of perpetual snow. On the loftiest mountains of Scotland in moist spots near their summits, not unfrequent. Smith, engl. bot. t. 1212. Jacq. austr. t. 284. Ch. cæspitòsa, Lam. fl. fr. 3. p. 46. Flowers yellowish-green.

FIG. 81.

Stone-crop-like Mossy-Cyphel or Dwarf Cherleria. Fl. July. Scotland. Pl. ⅛ foot.

2 C. stella'ta (Clark. ex Spreng. syst. 2. p. 416.) leaves trigonal, obtuse, stellately spreading at the top; flowers terminal, stalked; peduncles hispid. ♃. F. Native of Mount Parnassus.

Starry-leaved Cherleria. Pl. 2 inches.

3 C.? imbrica'ta (Ser. mss. in D. C. prod. 1. p. 421.) plant tufted, small; leaves flattish, concave, and 3-nerved beneath, blunt, imbricated; flowers sessile, octandrous? ♃? H. Native of the Alps of Carinthia and of upper Austria, as well as of Siberia. Cherlerioìdes, Hoppe.? pl. sel. 2. C. octándra, Sieb. Flowers greenish-yellow.

Imbricated-leaved Cherleria. Fl. July. Pl. ⅛ foot.

4 C. dicranoi'des (Cham. in Schlecht. Linnæa 1. p. 63.) densely tufted, small; leaves spatulately-oblong, kèeled, rather imbricated, nerveless. ♃. H. Native of St. Laurence Bay, in North-west America. Plant like *Dícranum glaúcum*.

Dicranum-like Cherleria. Pl. 1 foot.

5 C. grandiflòra (D. Don, prod. fl. nep. p. 214.) leaves lanceolate, stiff, mucronate, pungent, keeled underneath, with scarious margins, which are dilated and ciliated, concave above; segments of calyx cuneated, rounded, very broad; petals obovate, retuse, exceeding the calyx in length. ♃. H. Native of Nipaul at Gosaingsthan. Flowers about the size of those of *Arenària grandiflòra*, rose-coloured, with purple filaments and yellow anthers. Arenària globiflòra, Wall. mss.

Great-flowered Cherleria. Pl. 1 to 2 inches.

6 C. junipe'rina (D. Don, prod. fl. nep. p. 214.) leaves crowded in 6 rows, lanceolate, mucronate, stiff, deflexed, with smooth margins; flowers axillary, solitary, shorter than the leaves; segments of calyx obtuse; petals oval, oblong, twice the length of the calyx. ♃. H. Native of Nipaul at Gosaingsthan. Arenària densíssima, Wall. in litt. Plant forming a large compact tuft. Flowers white.

Juniper-like Cherleria. Pl. 1 to 2 inches.

Cult. *Cherlèria* is a genus of very pretty alpine plants, having the appearance of some species of *Arenària*. They should be grown in small pots, well drained with potsherds, in a mixture of sand, loam, and peat, and placed among other alpine plants. They are increased by dividing the plants at the root, or sometimes by seed.

XXXVII. SPERGULA'STRUM (from *spergula*, spurry, and *astrum*, an affixed signification, like.) Michx. fl. bor. amer. 1. p. 275. D. C. prod. 1. p. 421. Micropétalum, Pers. ench. 1. p. 509.

Lin. syst. *Decándria, Tri-Tetragýnia.* Calyx 5-sepalled. Petals 5, very minute, entire or wanting. Stamens 10, perigynous. Stigmas 4, sessile, ligulately-setaceous. Capsules ovate, longer than the calyx of 4-valves.—North American herbs, with the habit of *Stellària* or *Spérgula*. This genus ought more properly to have been placed in *Paronỳchieæ*, from the perigynous insertion of the stamens.

1 S. lanuginòsum (Michx. fl. bor. amer. 1. p. 275.) plant densely pubescent; leaves lanceolate, tapering into the footstalk; peduncles almost solitary, long, at length reflexed; flowers apetalous. ♃. H. Native of North America on the mountains of Virginia and Carolina. Micropétalum lanuginòsum, Pers. ench. 1. p. 509. Stems densely clothed with very fine wool.

Woolly Spergulastrum. Fl. June, July. Clt. 1821. Pl. ½ ft.

2 S. lanceola'tum (Mich. fl. bor. amer. 1. p. 275.) plant glabrous; leaves lanceolate, tapering at both ends; flowers panicled; petals ovate, very short. ♃. H. Native of North America on moist rocks from Canada to Carolina. Micropétalum lanceolàtum, Pers. ench. 1. p. 509. Spérgula boreàlis, Bigel. fl. bost. 2. p. 433. Hook. fl. bor. amer. p. 86. Sometimes there are only 3 stigmas. Petals white.

Lanceolate-leaved Spergulastrum. Fl. July. Pl. ½ foot.

3 S. gramí'neum (Michx. fl. bor. amer. 1. p. 276.) plant very smooth; leaves linear, erect; panicle loose; petals lanceolate, length of sepals. ♃. H. Native of North America near springs and on shady rocks, from New York to Virginia, Canada, &c. Spérgula longifòlia, Hook. fl. bor. amer. p. 86. Spérgula gramínea, Bigel. l. c. Like *Stellària gramínea*.

Grassy Spergulastrum. Fl. June, July. Pl. ½ foot.

Cult. A genus of weed-looking plants, not worth cultivating except in general collections. They should be grown in pots in a mixture of peat and sand. They may be either increased by dividing the plants at the roots or by seed.

XXXVIII.? HYDROPI'TYON (from *υδωρ, hydor*, water, and *πιτυς, pitys*, a pine-tree or fir; water plants resembling the pine tree in the fine whorled leaves.) Gært. fruct. 3. p. 19. t. 183. f. 2. D. C. prod. 1. p. 422.

Lin. syst. *Decándria, Monogýnia.* Calyx of 5 sepals. Petals 5, ovate-roundish. Stamens 10; filaments thick and pilose; anthers cordate. Ovary oblong. Style 1. Stigma orbicular. Capsule 1-seeded. Seed naked.—East Indian water herbs, with whorled pinnate leaves, and small axillary flowers. This genus most probably ought to be removed from this order.

1 H. Zeyla'nicum (Gært. l. c.) leaves pinnate, in whorls; stems arched; flowers axillary, sessile. ♃? S. W. Native of the East Indies. Flowers red.

Ceylon Water-fir. Pl. floating.

2 H. peduncula'tum (D. C. prod. 1. p. 422.) leaves in whorls, pinnate; stems straight; flowers axillary on long peduncles. ♃? S. W. Native of the East Indies and Malabar. H. calycìnum, Gært. Hottònia I'ndica, Lin. spec. 208.—Burm. zeyl. p. 121. t. 55.—Rheed. hort. mal. 12. p. 71. t. 36. Petals 4, greenish-red. The whole plant has a somewhat grateful odour. The flowers mixed with ginger and cardamon in milk-whey are used in Malabar as an anti-dysenterical medicine.

Stalked-flowered Water-fir. Pl. ½ foot.

Cult. As neither of the species of *Hydropítyon* has ever been introduced into Europe in a living state, it is difficult to say what mode of cultivation they require. We think from the nature of the plant that it will be impossible ever to cultivate it in this country.

XXXIX. ACO'SMIA (*a, priv. κοσμος, kosmos*, beauty; a plant without beauty). Benth. mss. in Lin. soc. herb.

Lin. syst. *Decándria, Dygýnia.* This is the *Gypsóphila cerastoìdes*, p. 383. no. 36. of this work, but what the character

is which separates it from *Gypsóphila*, we are not at present acquainted with, unless that the capsule may be 4-valved.

XL. ODONTOSTE'MMA (from *οδους οδοντος*, *odous odontos*, a tooth, *στεμμα*, *stemma*, a crown; in allusion to the toothed petals). Benth. mss. in Lin. soc. herb.

LIN. SYST. *Decándria*, *Digýnia*. Calyx 5-leaved. Petals 5, cuneiform, toothed at the apex. Stamens 10. Styles 2, recurved. Capsule 1-celled, 4-valved, many-seeded. Herb with the habit of *Cerástium*. Leaves elliptic, oblong, sessile, obtuse, hairy on both sides; in fact the whole plant is clothed with glandular hairs. Panicle trichotomous. Flowers white.

1 O. GLANDULÒSA (Benth. l. c.). ♃. F. Native of Kamoon.

Glandular Odontostemma. Pl. 1 foot.

Cult. This plant will grow in any common garden-soil. It requires to be protected during winter. Not worth cultivating, unless in general collections.

XLI. LEUCOSTE'MMA (from *λευκος*, *leucos*, white, and *στεμμα*, *stemma*, a crown; flowers white). Benth. mss. in Lin. soc. herb.

LIN. SYST. *Decándria*, *Digýnia*. Calyx 5-leaved. Petals 5, bipartite or emarginate, with long claws. Stamens 10. Styles 2. Capsule 1-celled, 4-valved, many-seeded. Plants resembling *Stellària* in habit, with white flowers.

1 L. WEBBIA'NA (Benth. l. c.) plant spreading, smooth; leaves linear-lanceolate, acuminated; peduncles 1-flowered, axillary; sepals acuminated; petals deeply bipartite. ♃. F. Native of Kamoon.

Webb's Leucostemma. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

2 L. LATIFÒLIA (Benth. l. c.) diffuse, smooth; leaves ovate, mucronate, upper ones nearly lanceolate; sepals acuminated; peduncles terminal, solitary, 1-flowered; petals emarginate. ♃. F. Native of Kamoon.

Broad-leaved Leucostemma. Pl. creeping.

Cult. The species of *Leucostémma* will thrive in any common soil, and are easily increased by dividing the plants or by seed.

Post no. 53. p. 492 SILE'NE CISPLATE'NSIS (St. Hil. fl. bras. 2. p. 163. t. 108.) hairy stem, branched; leaves lanceolate, lower ones obtuse, upper ones smaller, acutish; flowers laxly racemose, erect; calyx silky-hairy, cylindrical when in flower, but at length becoming clavate; teeth short, acute; petals obcordate, crowned in the throat. ⊙. H. Native about Monte Video in sandy places, and to the south of the river Plate. Flowers bluish-violet.

Cisplatine Catchfly. Fl. June, July. Pl. 1 foot.

ORDER XXVIII. ELATI'NEÆ (plants agreeing with *Elátine* in important characters.) Cambess. in St. Hil. fl. bras. 2. p. 159.

A small family of plants, nearly allied to the *Caryophýlleæ*, from which they differ essentially in the organization of their stigmas, of their capsules, and of their seeds. The stigmas are capitate. The valves of the capsules are bent inwards at the margins, so much as to form dissepiments. The seeds are without albumen. They differ from *Hypericíneæ*, with which they agree in certain analogies, by the existence of a true central placenta, and by their stamens being definite in number, &c. M. Cambessedes agrees with M. Bartling, who has united the *Chenopòdeæ*, *Amaranthàceæ*, *Paronychièæ*, and the *Caryophýlleæ* in one natural class, in spite of the difference of the insertion of their stamina, as they agree in most other respects. This order contains only three genera, the *Merímea*, Camb., *Elátine*, Lin. and *Bérgia*, Lin. The two last genera with their species will be found in *Caryophýlleæ*, therefore we shall only give amended characters of the genera here, and refer to the preceding Order for the species.

Synopsis of the genera.

1 MERI'MEA. Calyx 5-parted. Petals 5. Stamens 10. Styles 5. Capsule 5-valved, 5-celled, many-seeded; valves separating, bent in at the margins so as to constitute dissepiments.

2 ELA'TINE. Calyx 3-4-parted. Petals 3-4. Stamens 3-8. Styles 3-4, crowned by capitate stigmas. Capsule 3-4-valved, 3-4-celled, many-seeded; valves separating, bent in at the margins, constituting dissepiments.

3 BE'RGIA. Calyx 5-parted. Petals 5. Styles 5, approximate. Capsule 5-valved, 5-celled, from the edges of the valves being bent inwards.

I. MERI'MEA (in memory of Prospero Merimee, an ancient botanist, whose name is now almost forgot.) Cambess. in St. Hil. fl. bras. 2. p. 160.

LIN. SYST. *Decándria*, *Pentagýnia*. Calyx 5-parted. Petals 5. Stamens 10. Styles 5, connate at the base. Capsule 5-valved, 5-celled, separating at the valves; valves bent inwards at the margins, so much as to constitute dissepiments. Seeds fixed to a 5-lobed central placenta, they are elliptical-oblong. Embryo straight. A small plant with oblong-lanceolate, sessile, serrated, pilose leaves, and axillary, solitary, stalked small white flowers.

1 M. ARENARIOI'DES (Camb. l. c.) ♃. G. Native of Brazil in the province of Minas Geraes.

Sand-wort-like Merimea. Pl. creeping.

Cult. An insignificant plant, only worth cultivating in botanical gardens or those of the curious. An equal mixture of sand and loam will suit it well, and it may be propagated by seed or dividing the plant.

II. ELA'TINE (*ελατη*, *elate*, a fir; resemblance in leaves). Lin. gen. no. 685. Gært. fruct. 2. p. 142. t. 102. f. 1.

For the generic character of this genus as well as the specific character of the species, see p. 420. genus 21. of this work, under Order *Caryophýlleæ*, from which it has been removed to the present order by M. Cambessedes.

III. BE'RGIA (in honour of Peter Jonas Bergius, a professor of natural history at Stockholm, who wrote several botanical works between 1757 and 1780, particularly on mosses, and plants of the Cape of Good Hope). Lin. gen. 791. D. C. prod. 1. p. 390.

For the generic and specific characters of this genus see p. 420. genus no. 22. under *Caryophýlleæ*, from which it has been removed to the present order by M. Cambessedes.

ORDER XXIX. LI'NEÆ (plant agreeing with *Línum* in important characters). D. C. theor. ed. 1. p. 217. prod. 1. p. 423.

Calyx of 3-4, but usually of 5 sepals (f. 82. *a*.) hardly connected at the base, continuous with the peduncle, permanent, imbricate in æstivation. Petals equal in number to the sepals, and alternating with them (f. 82. *b*.), hypogynous, unguiculate at the base, connected with the ring of the stamens, as well as sometimes being connected together at the base, twisted in æstivation. Stamens equal in number with the petals,

slightly monadelphous at the base, alternating with the petals, with a tooth or abortive filament between each (f. 82. *e.*); anthers ovate, inserted by the base, 2-celled, birimose. Ovary sub-globose (f. 82. *c.*) with as many cells as there are sepals, rarely fewer. Styles equal in number to the cells of the ovary (f. 82. *d.*), capitate, or simple at the apex. Capsule globose, usually acuminate (f. 82. *c.*), crowned by the permanent bases of the styles (f. 82. *d.*), constantly composed of carpels having induplicate margins, each opening by 2 valves at the apex, with an incomplete dissepiment rising from the centre of each, therefore each carpel is divided into two incomplete cells, containing two seeds, one in each cell. Seeds ovate, compressed, shining, inverted. Albumen sparing, but usually wanting, but instead there is always a fleshy tumid endopleura. Embryo straight, flat, with the radical turned towards the hilum, and with elliptical cotyledons. This order differs from *Caryophýlleæ* by the capsule being formed by the cohesion of several, half 2-celled, 2-seeded carpels. It is composed of herbs or subshrubs bearing yellow, blue, or white fugacious petals, and with entire exstipulate leaves. Flowers always disposed in racemose corymbs or panicles. The plants are of immense importance to the world, on account of the tenacity of their fibres, when made into flax. The seeds are oily. The leaves of *Lìnum cathárticum* and *L. selaginoìdes* are purgative.

Synopsis of the genera.

1 LI'NUM. Sepals 5, entire (f. 82. *a.*). Petals 5 (f. 82. *b.*) Stamens 5 (f. 82. *e.*). Styles 5 (f. 82. *d.*), rarely 1 or 3.

2 RADI'OLA. Sepals 4, joined almost to the middle, trifid at the apex. Petals 4. Stamens 4. Styles 4.

I. LI'NUM (from *Llin*, a thread, in Celtic, whence λινον in Greek, and *linum* in Latin). Bauh. Vaill. Lin. Rœm. et Schult. syst. 6. p. 736. D. C. prod. 1. p. 423.

LIN. SYST. *Pentándria, Pentagýnia.* Flowers with a quinary proportion of parts. Sepals entire. Styles very rarely 3, but generally 5 (f. 82. *d.*) as well as sepals (f. 82. *a.*), petals (f. 82. *b.*), and stamens (f. 82. *e.*).

§ 1. *Flowers yellow.*

1 L. GA'LLICUM (Lin. spec. 401.) plant glabrous, usually of many stems; leaves alternate, linear-lanceolate; flowers in loose forked panicles; pedicels length of calyx; sepals ciliated at the base, awl-shaped at the top; petals blunt, twice as long as the calyx. ⊙. H. Native on hills from France to Iberia. Smith, fl. græc. t. 303.—Ger. gallo-prov. t. 16. f. 1.

Var. β, mèdium (D. C. prod. 1. p. 423.) branches rather angular; leaves serrulately-scabrous on the margins. ⊙. H. Native of Portugal on calcareous hills and heathy mountains about Coimbra and elsewhere.

French Flax. Fl. July, Aug. Clt. 1777. Pl. ½ to 1 foot.

2 L. AU'REUM (Walds. et Kit. pl. hung. 2. t. 177.) plant glabrous, erect; leaves alternate, linear-lanceolate; flowers in lax, panicled corymbs; pedicels 2 or 3-times longer than the calyx; sepals rather ciliated at the base, awl-shaped at the apex; petals emarginate, twice as long as the calyx; styles distinct. ⊙. H. Native of Hungary and Croatia in grassy places. L. Libúrnicum, Scop. carn. ed. 2. no. 385. Styles 3.

Golden Flax. Fl. July. Clt. 1820. Pl. ½ foot.

3 L. SETA'CEUM (Brot. phyt. no. 22. t. 6.) plant puberulous, erect; leaves alternate, crowded, linear-awl-shaped, somewhat serrately scabrous; flowers in panicled corymbs; pedicels length of the calyx; sepals awl-shaped, ciliated at the base; petals twice as long as sepals; styles distinct. ⊙. H. Native of Portugal on calcareous hills near Coimbra, also of Mauritania. L. Brotèri, Willd. mss. in Schult. syst. 6. p. 758. L. tenuifòlium, Schousb.

Var. β, bicolor; flowers yellow, with a blue base and striped with purple. Native of the north of Africa near Tangiers. L. bícolor, Schousb. maroc. 135. L. tenuifòlium δ, Willd. spec. 1. p. 1536. L. tenuifòlium β, bícolor, Pers. ench. 1. p. 335.

Awl-shaped-leaved Flax. Fl. June, July. Pl. ½ to 1 foot.

4 L. ERIGEROI'DES (St. Hil. fl. bras. 1. p. 132.) smooth, simple, erect; leaves alternate, crowded, linear, very acute, with 2 glands at the base; panicle somewhat corymbose; sepals hardly crenulated; petals twice the length of the calyx; style free; stigmas small. ♄. G. Native of Brazil in the province of Cisplatine.

Erigeron-like Flax. Shrub 1 foot.

5 L. LITTORA'LE (St. Hil. fl. bras. 1. p. 133.) smooth; stems numerous, erect; leaves linear, erect, smooth, upper ones alternate; flowers panicled; sepals acute, hardly crenate, much shorter than the sepals. ♃. S. Native of Brazil. Styles free; stigmas small. Petals 3 times longer than the sepals.

Shore Flax. Shrub 1 foot.

6 L. JU'NCEUM (St. Hil. fl. bras. 1. p. 134. t. 24.) smooth; stems erect, twiggy; leaves remote, short, appressed, linear, acute; flowers panicled; sepals acute. ♄. S. Native of Brazil. Flowers subglomerate; petals twice the length of the calyx.

Rushy Flax. Shrub 2 inches.

7 L. TE'NUE (Desf. atl. 1. p. 280. t. 81.) plant glabrous, erectish; leaves alternate, linear, acute; flowers in lax, panicled racemes; pedicels hardly the length of the calyx; sepals mucronate; petals rather retuse, 4-times longer than the calyx. ⊙. H. Native of Algiers on uncultivated hills. L. virgàtum, Schousb. mar. 1. p. 136. L. meliánthum, Brot. fl. lus. 1. p. 484. ex Link. Flowers about the size of those of common flax. Branches of panicle dichotomous.

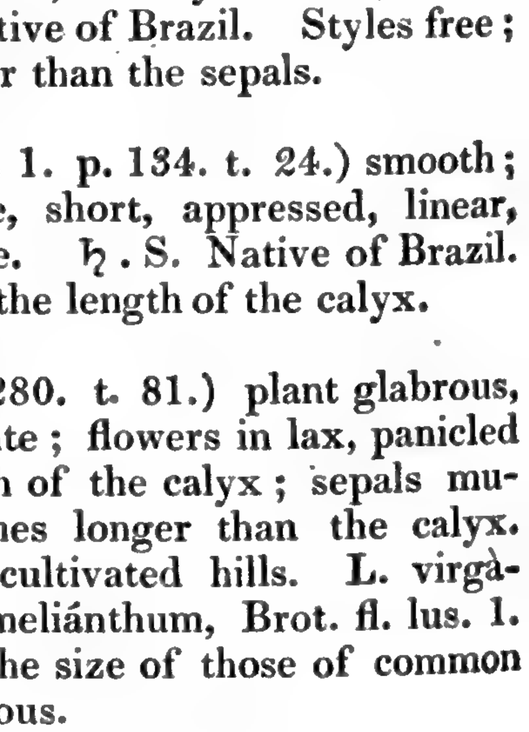
Slender Flax. Fl. June, July. Pl. ½ to ¾ foot.

8 L. LUTE'OLUM (Bieb. fl. taur. 1. p. 256.) plant glabrous, erect; stem angular; leaves alternate and opposite the flowers, linear, acute, and are as well as the sepals serrulated; branches of panicle dichotomous; pedicels very short; petals twice as long as the calyx; styles distinct; stigmas not capitate. ⊙. H. Native of Tauria and Iberia in sunny fields.—Buxb. cent. 5. t. 59. Leaves with 2-glands at the base.

Yellowish-flowered Flax. Fl. June, July. Clt. 1820. Pl. ½ ft.

9 L. NODIFLO'RUM (Lin. spec. 401.) plant glabrous; leaves lanceolate, smooth, furnished with 2 glands at the base of each, lower ones alternate, floral ones opposite; branches of panicle dichotomous; pedicels very short; calyx length of leaves; styles distinct; stigmas not capitate. ♄. H. Native of Italy and the islands of the Archipelago.—Moris, oxon. sect. 5. t. 26. f. 11. Sibth. and Smith, fl. græc. t. 307. (f. 82.).

FIG. 82.



Knotted-flowered Flax. Fl. July, Aug. Clt. 1759. Pl. ½ to ¾ ft.

10 L. STRI'CTUM (Lin. spec. 400.) plant glabrous, erect; leaves linear-lanceolate, straight, and are as well as the much-pointed sepals roughly ciliated; panicle corymbose, crowded; pedicels very short; petals length of calyx; styles distinct. ⊙. H. Native of the south of Europe and the north of Africa in sandy fields.

—Lob. icon. t. 411. f. 2. L. sessiliflòrum, Lam. dict. 3. p. 523. L. alterniflòrum, Delile.

Var. β, altérnum (Pers. ench. 1. p. 336.) stems evidently corymbose at the apex. ⊙. H. Native of Corsica.

Var. γ, spicàtum (Lam. dict. 3. p. 523.) stem rather spiked at the apex. Smith, fl. græc. 304. Leaves not ciliated.

Straight Flax. Fl. May, July. Clt. 1759. Pl. ½ foot.

11 L. RI'GIDUM (Pursh, fl. amer. sept. 1. p. 210.) leaves stiffly erect, linear, short; stem angular, furrowed; sepals ovate, acuminate, 3-nerved, glandularly-ciliated; petals oblong, very narrow; styles connate to the middle. ⊙. H. Native of North America on the banks of the river Missouri. Flowers sulphur-coloured.

Stiff-leaved Flax. Fl. July. Clt. 1807. Pl. 1 foot.

12 L. SELAGINOI'DES (Lam. dict. 3. p. 525.) leaves filiform, mucronate, alternate, crowded; stems suffruticose, branched at the apex; flowers terminal, almost sessile; ovary 10-celled. ♄. G. Native of Monte Video on rocks, also of Chili. Flowers white or brownish. Petals shorter than the calyx.

Selago-like Flax. Shrub procumbent or ¼ foot erect.

13 L. PROSTRA'TUM (Lam. dict. 3. p. 525.) plant glabrous; leaves alternate, oval-oblong; stems prostrate, very much branched; flowers lateral, solitary, on very short peduncles; sepals bluntish. ♃? ♄. G. Native of Peru on dry hills near Lima. Leaves like those of *Polýgala vulgàris*. Flowers like those of *L. Gállicum*.

Prostrate Flax. Pl. prostrate.

14 L. VIRGINIA'NUM (Lin. spec. 398.) plant glabrous, erect; leaves linear-lanceolate, alternate, radical ones ovate; panicle loose, corymbose; sepals acute; styles connate at the base; capsules awnless. ⊙. H. Native of North America on dry sunny hills and in fields, from New York to Virginia. L. Virgínicum, Pursh, fl. amer. sept. 1. p. 210. Flowers small, remote.

Virginian Flax. Fl. July, Aug. Clt. 1807. Pl. 1 foot.

15 L. MEXICA'NUM (H. B. et Kunth, nov. spec. amer. 6. p. 39.) plant glabrous, erect; leaves alternate; lower ones somewhat opposite, oblong, or ovate-oblong, acute, rounded at the base; branches panicled; sepals ovate; stigmas globose, acute, ciliated; styles connate to the middle; capsules acutely mucronate. ♃. F. Native of Mexico in woods near Santa Rosa. Benth. bot. reg. 1326.

Mexican Flax. Fl. June, July. Clt. 1828. Pl. 1 foot.

16 L. MYSORE'NSE (Heyne, mss. ex Wall. cat. herb. ind. no. 1507. Benth. bot. reg. no. 1326.) glabrous, erect; leaves alternate, oblong, obtuse, tapering to the base; flowers paniculately-corymbose; sepals ovate, acutish, with rather ciliated margins; petals hardly exceeding the sepals; styles connate at the base; stigmas globose; capsule acutely-mucronate. ⊙. S. Native of Mysore. Flowers about the size of those of *L. Virginiànum*.

Mysore Flax. Pl. ½ foot.

17 L. SCHIEDEA'NUM (Schlecht. et Cham. in Linnæa. 5. p. 234.) smooth, ascending, woody at the base, slender; leaves in something like whorls, 4 or nearly opposite, but mostly all alternate, obovate-lanceolate and linear-lanceolate, tapering to the base, sessile, rough on the margins; flowers disposed in dichotomous cymes; the branches axillary and alternate; bracteas linear, glandular, and fringed; sepals ovate-lanceolate, acute, with glandular serratures or fringed; fruit shorter than the calyx. ♄. G. Native of Mexico in woods near Jalapa. Flowers small, yellow.

Schiede's Flax. Shrub 1 foot.

18 L. AQUILI'NUM (Mol. chil. ed germ. 126.) plant glabrous, erect; leaves alternate, lanceolate, acute; peduncles bifid; pedicels longer than the calyx. ♃. F. Native of Chili on the mountains.—Feuill. Per. 3. p. 32. t. 22. f. 2.

Eagle Flax. Pl. 1 foot.

19 L. TENE'LLUM (Schlecht. et Cham. in Linnæa. 5. p. 235.) villous; root woody, descending, branched, white; stem densely leafy; peduncles twice or thrice dichotomous; flowers pedicellate, solitary, alternate; floral leaves minute, almost opposite; leaves on the lower part of the stem almost in whorls, 4 or nearly opposite, elliptic, and lanceolate, acute at the base, and acutish at the top, rarely roundish and obtuse, villous or villously-ciliated, with rough margins, with a few stipitate glands in front; sepals ovate, lanceolate, keeled, acute, mucronate, with glandular fringed margins. ♃. F. Native of Mexico near Jalapa. Flowers yellow, larger than those of *L. cathárticum*.

Tender Flax. Pl. ½ foot.

20 L. CORYMBI'FERUM (Desf. atl. 1. p. 279. t. 80.) plant glabrous, erect; leaves lanceolate, erect, alternate, 3-nerved, rough; panicle loose, somewhat corymbose; sepals awl-shaped, mucronate at the apex; petals four times longer than the calyx; styles distinct; stigmas not capitate. ⊙. H. Native on Mount Atlas near Mayane. Flowers the size of those of *L. usitatíssimum*.

Corymb-bearing Flax. Fl. June, July. Pl. 1 to 1½ foot.

21 L. DAHU'RICUM (Schult. syst. 6. p. 752.) plant glabrous, erect; lower leaves lanceolate-spatulate, crowded; cauline ones linear-lanceolate, remote, with rather roughish revolute margins; panicle lax, corymbose; pedicels very short; sepals ovate, lanceolate; petals thrice as long as the calyx. ♃. H. Native of Dahuria.

Dahurian Flax. Fl. June, July. Clt. 1816. Pl. 1 foot.

22 L. MARI'TIMUM (Lin. spec. 400.) plant glabrous, erect; leaves lanceolate, 3-nerved, alternate, lower ones opposite, obtuse; panicle lax, rather corymbose; sepals ovate, with short points; petals 3-times longer than the calyx; styles distinct. ♃. H. Native of the south of Europe in grassy boggy places by the sea-side. Jacq. hort. t. 154. L. heterophýllum, Mœnch. suppl. 99.—Lob. icon. t. 412. f. 2.—Tratt. tab. t. 579.

Sea-side Flax. Fl. July, Aug. Clt. 1596. Pl. 2 feet.

23 L. MULLE'RI (Mor. elench. ex bull. phil. March, 1829. p. 428.) This species comes very near to *L. marítimum*, and *L. setàceum*, Brot. but differs from both in the leaves being alternate, elliptical, and ciliated. ♄. H. Native of Sardinia on the mountains.

Muller's Flax. Pl. 1 foot.

24 L. ARBO'REUM (Lin. spec. 400.) shrubby, glabrous, glaucous; leaves cuneiform, obtuse, alternate, recurved; flowers few, somewhat capitate; sepals oval-lanceolate, acuminated; petals thrice as long as the calyx; style free; stigmas oblong. ♄. H. Native of Candia and Italy on the mountains. Sibth. et Smith, fl. græc. t. 305. Curt. bot. mag. t. 234. L. campanulàtum, D. C. fl. fr. ed. 3. vol. 4. p. 797.—Alp. exot. p. 19. t. 13.

Tree Flax. Fl. May, June. Clt. 1788. Shrub 1 foot.

25 L. CAMPANULA'TUM (Lin. spec. 400.) plant scabrous at the base, glaucous; leaves alternate, lower ones rounded at the apex; middle ones furnished with a small point, upper ones obversely lanceolate, acuminate, each furnished at the base with two glands; sepals linear-lanceolate; petals 3-times longer than the calyx; flowers corymbose. ♃. H. Native of the south of Europe, especially in arid places of France.—Tab. icon. p. 414. There is a variety of this plant in Tauria, with the leaves and branches pubescent.

Campanulate-flowered Flax. Fl. Ju. Aug. Clt. 1795. Pl. 1 ft.

26 L. TAU'RICUM (Willd. enum. p. 339.) plant shrubby at the base, greenish; leaves alternate, glaucous, furnished with two glands at the base of each, lower ones rather spatulate, upper ones lanceolate; panicle dichotomous; sepals acuminated, serrulated; petals 3-times longer than the calyx. ♄. H. Native of Tauria L. campanulàtum, Bieb. fl. taur. 1. p. 255.

Taurian Flax. Fl. June, Aug. Clt. 1818. Shrub ½ foot.

27 L. Chamissònis (Schiede in Schlecht, Linnæa. 1. p. 68.) stems ascending, woody at the base; branches alternate; leaves lanceolate, glandless at the base, lower ones opposite, upper ones alternate; flowers opposite the leaves and terminal; petals yellow; styles free to the base; stigmas capitate; capsules acutish, with the valves flat on the back. ♄. G. Native of Chili.

Chamisso's Flax. Shrub 1 foot.

28 L. capita'tum (Kit. in Rœm. et Schult. syst. 6. p. 751.) stem shrubby at the base; leaves furnished with a gland on each side at the base, alternate, lower ones spatulate, with smooth margins, upper ones lanceolate, acute, acuminated, with scabrous margins; flowers capitate, sessile; sepals acuminated, subserrated? ♃. H. Native on the Alps of Croatia.

Capitate-flowered Flax. Fl. June, Aug. Clt. 1816. Pl. ½ to ¾ foot.

29 L. fla'vum (Lin. spec. 399.) plant woody at the base, greenish; leaves furnished with two glands at the base of each, alternate, narrow, lanceolate, acute, sessile, with smooth margins; branches of panicle dichotomous; sepals acuminated, serrulated; petals very blunt, 3-times longer than the calyx. ♃. H. Native of Austria, Hungary, Carniola, and Caucasus, in dry meadows. Jacq. aust. t. 214. Curt. bot. mag. t. 312. L. campanulàtum β, D. C. fl. fr. 4. p. 797. L. monopétalum, Steph. enum. mosq. no. 214. Corolla monopetalous, 5-cleft. Steph. l. c.

Yellow Flax. Fl. June, Aug. Clt. 1793. Pl. 1 to 1½ foot.

30 L. tetra'gynum (Colebr. mss. ex Wall. cat. herb. ined. no. 1506. ex Benth. bot. reg. no. 1326.) glabrous, shrubby, branched; leaves elliptical, oblong, acuminated, serrated, tapering to the base, stalked; flowers in capitate-corymbs; peduncles bracteate; sepals ovate, with short points and sub-ciliated margins; petals twice the length of the calyx; styles 4, free; stigmas globose; capsule obtuse. ♄. G. Native of Nipaul and Silhet. Flowers smaller than those of *L. trígynum*.

Four-styled Flax. Shrub 2 feet?

31 L. cæspitòsum (Sibth. et Smith, fl. græc. t. 305. prod. p. 216.) plant glabrous, glaucous, tufted, shrubby at the base; leaves obovate, acute; sepals ovate, obtuse. ♄. H. Native of Crete on the higher mountains. L. globulariæfòlium, Poir. suppl. 3. p. 445. A small much-branched shrub. Capsules globose. Flowers cymose. Styles distinct.

Tufted Flax. Shrub ½ foot.

32 L. tri'gynum (Roxb. ex asiat. resear. 6. p. 357.) shrubby, glabrous; leaves alternate, elliptical, entire, pointed at both ends, feather-nerved; flowers large, bracteate; styles 3, distinct; capsule obtuse; sepals lanceolate; petals obovate, emarginate. ♄. G. Native of the East Indies at Sirinagur. Sims, bot. mag. t. 1100. Andr. bot. rep. t. 449. Delaun. herb. amat. t. 290. Capsules 6-celled. Stigmas not capitate.

Three-styled Flax. Fl. Jan. Oct. Clt. 1799. Sh. 2 to 4 ft.

33 L. Cicanòbum (D. Don, prod. fl. nep. 217.) shrubby, glabrous; leaves alternate, membranaceous, elliptical-oblong, acuminated, stalked, and acute at the base, serrate? flowers in terminal umbels; styles 3, connected to the middle; sepals oblong, acute; capsule obtuse. ♄. G. Native of Nipaul at Narainhetty. L. Cicanòbu, Hamilt. mss. Leaves 6 inches long. Flowers large. In the language of the Nawaris, this plant is called *Cicanobu Swa*. Mr. Bentham is disposed to consider this a mere variety of *L. rèpens*.

Cicanobu Flax. Fl. Decem. Shrub 1 to 2 feet.

34 L. re'pens (D. Don, prod. fl. nep. p. 217.) stem shrubby; leaves alternate, ovate-cuneated, mucronulate, glabrous, crenulated, feather-nerved; flowers solitary, stalked; sepals lanceolate, mucronate, with denticulated margins; capsule obtuse; styles 3, connate to about the middle. ♄. G. Native of Nipaul at Narainhetty. L. rèpens and semitrígynum, Hamilt. mss. L. trígynum, Smith, exot. bot. t. 17. Flowers large, campanulate. Root creeping.

Creeping Flax. Fl. Nov. Shrub 3 foot.

35 L. Macræ'i (Benth. in bot. reg. no. 1326.) glabrous; stems shrubby at the base; branches erect; leaves opposite or alternate, lanceolate, acuminated, stiff; sepals ovate, acuminated; petals twice the length of the calyx; style equal to the corolla, slightly quinquefid at the apex; stigmas globose; capsules acutely mucronate. ♄. G. Native of Chili at Valparaiso. Flowers about the size of those of *L. marítimum*.

Mac Rae's Flax. Shrub 1 foot.

36 L. mono'gynum (Forst. prod. no. 145.) stem suffruticose; leaves alternate, lanceolate, 3-nerved. ♄. G. Native of New Zealand. Flowers yellow. Styles connate at the base. According to Mr. Bentham this is the same as *L. Africànum*.

One-styled Flax. Fl. June, July. Shrub 1 foot.

37 L. Africa'num (Lin. mant. p. 360.) plant glabrous, erect, shrubby at the base; leaves linear-lanceolate, acute, alternate, or irregularly opposite, or in whorls; panicle corymbose, erect; flowers disposed along the branches, almost sessile; sepals rather serrately ciliated; styles connate at the base. ♄. G. Native of the Cape of Good Hope. Jacq. coll. 3. p. 218. t. 353. Curt. bot. mag. 403.

African Flax. Fl. June, July. Clt. 1771. Shrub 1 to 2 ft.

38 L. Æthiòpicum (Thunb. fl. cap. 2. p. 143.) plant glabrous, shrubby at the base, erectly-spreading; leaves ovate, mucronate, opposite; flowers terminal, rather umbellate; styles connate at the base. ♄. G. Native of the Cape of Good Hope. L. Africànum, Rchb. icon. exot. t. 46.

Æthiopian Flax. Fl. June, July. Clt. 1771. Shrub 1 foot.

39 L. quadrifòlium (Lin. spec. 402.) plant glabrous, erect; leaves ovate, somewhat mucronate, 4 in a whorl, upper ones sometimes opposite; styles distinct. ♃. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 431. Houtt. pfl. syst. 4. p. 263. t. 46. f. 1. Perhaps L. quadrifòlium of Thunb. fl. cap. 2. p. 244. and L. tetraphýllum of Habenstr. in herb. Panzer, are different from this.

Four-leaved Flax. Fl. May, June. Clt. 1787. Pl. 1 to 1½ ft.

§ 2. *Flowers blue or rose-coloured, rarely varying to white.*

40 L. verticilla'tum (Lin. spec. 402.) leaves in whorls, linear-lanceolate, upper ones as well as calyxes villous. ⊙. H. Native of Italy about Rome. Petals grey.

Whorled-leaved Flax. Fl. June, July. Pl. 1 foot.

41 L. stria'tum (Walt. fl. carol. p. 118.) leaves opposite, ovate, or oblong, with the margins and nerves somewhat decurrent; flowers panicled, terminal. ⊙. H. Native of Carolina. Habit of *Campánulata hýbrida*. Stems somewhat tetragonal, simple. Sepals ovate, acute, a little smaller than the petals. Flowers blue and striated.

Striated Flax. Fl. June, July. Clt. 1817. Pl. 1 to 1½ foot.

42 L. viscòsum (Lin. spec. 398.) leaves lanceolate, 3-5-nerved, alternate, and somewhat opposite, and are as well as stems hairy, middle and upper ones, as well as sepals, bearing glandular hairs; styles shorter than the stamens or nearly equal with them. ♃. H. Native of the southern parts of Germany and Italy in sunny places. Flowers pale wine-coloured, rarely blue. Capsules of 10 cells.—Bertol. am. itin. p. 139.

Var. β, *sylvéstre* (Scop. carn. no. 383. t. 11.) leaves all ciliated with glandular hairs, and as if they were serrated. ♃. H. Native of Carniola.

Var. γ, *Nestlèri* (D. C. prod. 1. p. 246.) lower leaves smoothish, somewhat ovate. ♃. H. Native of Austria in gravelly or sandy fields.

Var. δ, *hypericifòlium* (Sal. parad. t. 79.) leaves ovate-oblong, distinctly 5-nerved. Sims, bot. mag. t. 1048.—L. venùstum,

Andr. bot. rep. 477. Flowers large, almost the size of those of a *Mallow*. Perhaps a distinct species.

Clammy Flax. Fl. June, Aug. Clt. 1807. Pl. 1 to 2 feet.

43 L. PILI'GERUM (Presl. ex Spreng. syst. p. 127.) stem simple, hairy; leaves oblong-lanceolate, 3-nerved; sepals linear, pilose; styles equal in length with the stamens. ♃. H. Native of Sicily and Crete.

Hair-bearing Flax. Pl. 1 to 2 feet.

44 L. HIRSU'TUM (Lin. spec. 398.) leaves lanceolate, 3-5-nerved, alternate, and somewhat opposite, and are as well as the stems hairy, upper ones as well as sepals ciliated, with glandular hairs; stamens connate to the middle. ♃. H. Native of Italy, south of France, Tauria, Caucasus, and Hungary, in elevated places exposed to the sun. Flowers bluish, rarely rose-coloured. Jacq. aust. t. 31. Smith, fl. græc. t. 302.—Moris. hist. 2. p. 573. sect. 5. t. 26. f. 5. Panicle corymbose.

Var. β, elàtius (Rœm. ined. Schult. syst. 6. p. 740.) leaves evidently 3-nerved. ♃. H. Native of Caucasus.

Hairy Flax. Fl. July, Aug. Clt. 1759. Pl. 1 foot.

45 L. ASCYRIFÒLIUM (Sims, bot. mag. t. 1087.) leaves alternate, 3-nerved, ovate, cordate, pubescent, upper ones somewhat opposite; flowers somewhat spiked; sepals acuminated, hairy. ♃. H. Native of Portugal near Coimbra. Flowers white, streaked with bluish-purple veins, with a yellow bottom. Petals crenulated.

Ascyrum-leaved Flax. Fl. July, Aug. Clt. 1800. Pl. 1 ft.

46 L. NERVÒSUM (Walds. et Kit. pl. hung. 2. t. 105.) stem hairy at the base; leaves lanceolate, pointed, 3-5-nerved, glabrous; panicle loose; sepals awl-shaped, pointed, serrated at the base. ♃. H. Native of Hungary, the Ukraine, and Tauria, on hills. Flowers large, blue. Petals emarginated or pointed, crenated at the apex. Styles white. Capsules with 10 prominent sutures.—Barrel. icon. p. 1009.

Var. β, glabràtum (D. C. prod. 1. p. 426.) stem glabrous at the base. ♃. H. Native of Russia on the banks of the Don.

Nerved-leaved Flax. Fl. June, July. Clt. 1822. Pl. 1 to 1½ foot.

47 L. NARBONE'NSE (Lin. spec. 398.) plant glabrous, erect, rather glaucous; leaves alternate, distant, lanceolate-linear, very acute, and rather stiff; panicle sub-corymbose; sepals acuminated, with the margins scariose at the base. ♃. H. Native of Spain, south of France, and Italy, in elevated sunny places. Flowers large, beautiful, blue, very rarely white. Hook. bot. mag. icon.—Barrel. icon. p. 1007.

Narbonne Flax. Fl. May, July. Clt. 1759. Pl. 2 feet.

48 L. PUNCTA'TUM (Presl. ex Spreng. syst. 1. p. 962.) stem diffuse, usually 3-flowered; leaves imbricate, lanceolate, acute, rather scabrous, full of pellucid dots; sepals ovate. ♃. H. Native of Sicily.

Dotted-leaved Flax. Pl. diffuse.

49 L. USITATI'SSIMUM (Lin. spec. 397.) plant erect, glabrous; leaves lanceolate or linear acute; panicle corymbose; sepals ovate, acute, or mucronate, with scarious or membranaceous margins; petals rather crenated, 3-times larger than the calyx. ☉. H. Native of many parts of Europe, as well as in Nipaul and North America, in corn-fields, said to be originally from Egypt. Tratt. tab. t. 744. Smith, engl. bot. t. 1357. Curt. fl. lond. fasc. 5. t. 22. Mart. fl. rust. t. 133. L. satìvum, Black. herb. t. 160. Plench. t. 243. L. arvénse, Neck. gallob. 159. Flowers blue. Sepals 3-nerved.

Var. β, hùmile (Mill. dict. no. 2.) petals emarginate; stem dwarf-branched.

Flax has been cultivated from the earliest ages and for an unknown length of time in Britain, of which it is now considered a naturalized inhabitant. It is cultivated both for its fibre for making thread, and its seed for being crushed for oil, but never has been grown in sufficient quantity for either purpose. The legislature of the country, as Brown observes, has paid more attention to framing laws regarding the husbandry of flax than to any other branch of rural economy; but it need not excite surprise that these laws, even though accompanied by premiums, have failed to induce men to act in a manner contrary to their own interest. The fact is, the culture of flax is found on the whole less profitable than the culture of corn. It is one of the most severe crops when allowed to ripen its seed; but by no means so when pulled green. Loud. encycl. agri. p. 846.

The varieties of the common *Flax* are few, and hardly deserving notice. Marshall mentions the *Blue* or *Lead-coloured Flax*, as being cultivated in Yorkshire, and Professor Thaer mentions a finer and coarser variety; he also as well as some other agriculturists has tried the *Lìnum perénne*, but though it affords a strong fibre, it is coarser, and difficult to separate from the woody matter.

The soil most proper for *flax*, besides the alluvial kinds, are deep and friable loams, and such as contain a large proportion of vegetable matter. Strong clays do not answer well, nor soils of a gravelly or dry sandy nature. But whatever be the kinds of soil, it ought neither to be too poor nor in too rich a condition; because in the latter case the *flax* is apt to grow too luxuriant, and to produce a coarse sort; and, in the former case, the plant from growing weakly affords only a small produce. (*Treat. on Rural Affairs.*) If there be water at a small depth below the surface of the ground, it is thought by some still better, as is the case in Zealand, which is remarkable for the fineness of its *flax*, and where the soil is deep and rather stiff, with water almost every where at the depth of a foot and a half or two feet underneath it. It is said to be owing to the want of this advantage, that the other provinces of Holland do not succeed equally well in the culture of this useful plant; not that but fine *flax* is also raised on light lands, if they have been well tilled and manured, and if the seasons are not very dry. It is remarked in the letters of the Dublin Agricultural Society, that most stiff soils yield much larger quantities of *flax* and far better seed than can be obtained from light lands, and that the seeds reared from the former may with proper care be rendered full as good as any that can be imported from Riga or Zealand. M. Du Hamel, however, thinks that strong land can hardly yield such fine *flax* as that which grows on lighter ground. The place of *flax* in a rotation of crops is various, but in general it is considered as a corn or exhausting crop, when the seed is allowed to ripen, and as a green pea or bean crop, when the plant is pulled green. *Flax*, Donaldson observes, is sown after all sorts of crops, but is found to succeed better on lands lately broken up from grass. In Scotland, the most skilful cultivators of *flax* generally prefer lands from which one crop of grain only has been taken, after having been several years in pasture. When such lands have been limed or marled, immediately before being laid down to grass, the crop of *flax* seldom or never misgives, unless the season proves remarkably adverse. In the north of Ireland flax is generally sown by the small farmers after potatoes. In Belgium it is supposed not to do well after peas or beans, nor to succeed if sown oftener on the same soil than twice. (*Von Thaer.*)

The preparation of the soil when grass land is intended for *Flax* consists in breaking it up as early in the season as possible, so that the soil may be duly mellowed by the winter frosts, and in good order for being reduced by the harrows when the seed process is attempted. If *flax* is to succeed a corn crop, the like preparation is required to procure the aid of frost, without which the surface cannot be rendered fine enough for receiving the seed. Less frost, however, will do in the last than in the first case, therefore the grass land ought always to be earliest

ploughed. At seed time harrow the land well before the seed is distributed, then cover the seed to a sufficient depth by giving a close double tine of the harrows. Water-furrow the land, and remove any stones or roots that may remain on the surface, which finishes the process.

The ordinary season of sowing *flax-seed* is from the middle of March to the end of April, but the last week of March and the first 10 days of April is esteemed the best time, and accordingly within these periods the greatest quantity of *flax-seed* is sown in this country. In France and Italy it is often sown in the autumn, by which a larger crop is produced, especially when seed is desired.

The quantity of seed depends upon the intention of the crop. When a crop of seed is intended to be taken, thin sowing is preferable, in order that the plants may have room to throw out lateral shoots, and to obtain air in the blossoming and filling season. But it is a mistake to sow thin when *flax* is intended to be taken, for the crop then becomes coarse, and often unproductive. From eight to ten pecks per acre is the proper quantity when *flax* is intended, but when seed is the object six pecks is sufficient, for seed from thick sown crops is never so good, nor so abundant. (*Donaldson.*) In the choice of seed, that which is of a bright, brownish colour, oily to the feel, and at the same time weighty, is considered the best. Linseed imported from various countries is employed. That brought from Holland is in the highest estimation, as it not only ripens sooner than any other that is imported, but also produces greater crops, and *flax* of that quality which best suits the chief manufactures of the country. American seed produces in common fine *flax*, but neither the quantity of *flax*, nor capsules, nor are they so large as the produce of Dutch linseed. Riga seed yields a very coarse sort of flax, but greater in quantity of seed than any other. It is common in some parts of Scotland to sow seed saved from the crops of the preceding year, especially when that crop was raised from seed imported from Holland. The success of this practice is found to depend greatly on changing the seed from one sort of soil to another of an opposite nature. But the saving in the expense of purchasing that sort of seed in place of what is newly imported from Holland is so inconsiderable, and the risk of the crop misgiving so much greater in the one case than in the other, that those only who are ignorant of the consequences, or who are compelled from necessity, are chargeable with this act of ill-judged parsimony. *Flax-seed* is by some farmers changed every three years in succession without perceiving any degeneracy. When any degeneracy takes place the seed of *flax* grown on a different soil, as moss, moor, sand, &c. without any view to the produce in fibre, will, it is said, answer as well as foreign seed.

The manner of sowing *flax* is almost always the same, but when seed is the main object drilling may be adopted, by which seed may be saved in sowing, cleaning conducted at less expense, and the plants rendered more vigorous and branchy, by the stirring of the soil, and the admission of air between the rows. The fibres of *flax* grown in this way will be shorter, and less equal in thickness throughout their length, than *flax* grown by the broadcast mode and tolerably thick.

The after culture consists chiefly in weeding, but sometimes it commences with rolling the surface, which is a very proper operation when the soil is very dry, the season advanced, or the earth very porous. By this process the earth is pressed firmly to the seeds, and they are thereby stimulated to vegetate sooner, and the drought is kept out. On some soils, and in wet and stormy seasons, *flax* is apt to be laid, to guard against which some cultivators run across their flax-field slender poles, fixed to stakes; but a better method is to run small ropes across the field both lengthwise and breadthwise, so as to form a sort of net-work, fastened to stakes at due distances, which is proof against almost every accident that can happen from tempestuous weather. In Scotland a crop of *flax* is sometimes weeded by turning a flock of sheep at large into the field. They will not take the young *flax* plants, but they carefully search for the weeds, which they devour.

The crop of *flax* is taken in by pulling, on which there is considerable differences of opinion. None, however, think of pulling it before it comes into flower, when fibre is the sole object, or before the seed in the capsules acquires a brownish colour, when fibre and seed jointly or fibre alone is the object. Some argue for pulling while it is green, in order that its fibres may be softer and finer; others, with the same view, pull it up before its seeds are quite formed, and others again think that it should not be pulled till some of the capsules have begun to open, being of opinion that the fibres of green *flax* are too tender, and that they fall into tow. On the other hand it is certain that the fibres of *flax* which has stood till it is very ripe are always stiff and harsh, that they are not easily separated from the woody part, and that they do not bleach so well, therefore both extremes should be avoided, and it seems most reasonable to think that the properest time for pulling *flax* is, when its stalks begin to turn from a green to a yellow colour, when its leaves begin to fall, and when its seeds begin to be brown. Donaldson observes that a crop of *flax* frequently grows and runs out a great number of seed-bearing branches. When that is the case the seeds, not the *flax*, ought to be the farmer's chief object, and the crop should be allowed to stand till the seeds are perfected. But that when the crop thrives and is likely to become more valuable for the *flax* than the seeds, it should be pulled soon after the bloom drops off, and before the pods turn hard and sharp in the points. When *flax* is grown for its fibre, Brown considers it the safest course to take it in a little early, as any thing wanted in quantity being in this way made up by the superiority of the quality. The operation of pulling *flax* differs according to the intention of the crop. When it is grown for the fibre it is pulled and tied immediately in sheaves like corn, being carried off immediately to be watered. But when seed is the object of the crop, it is pulled up and laid in handfuls across each other, the reason of which is, the business of rippling is facilitated, as the ripplers, in place of having to separate each handful from the bundle, find it by this simple precaution already done to their hand. In most fields there are varieties of soils, of course some parts of a field will produce fine *flax*, others coarse, some long and some short; in a word, crops of different lengths and qualities. It cannot be supposed that all these different kinds of *flax* will undergo an equal degree of watering, grassing, breaking, and heckling without sustaining much injury. Although it is of much importance yet it very seldom happens that much attention is bestowed to separate the different sorts of *flax* from each other, in pulling the crop. Some instead of laying the *flax* in loose handfuls, tie them up loosely at the top, and then spread out their roots and set several of them together in an upright position upon their roots. In either case the *flax* is left twelve or fourteen days in the field to dry it. This drying is certainly not necessary for the rippling, because the ripple will separate the capsules from the *flax* as effectually before it has been dried as it will afterwards, and if it is done with a view to ripen the seed, it should be considered that the *flax* will be more hurt by the longer time of steeping, which will become necessary in consequence of this drying, than the seed can be benefited, because the more the membrane which connects the fibres to the reed is dried, the greater must be the degree of putrefaction necessary to loosen and destroy the cohesion of this connecting membrane; the finer parts of the *flax* itself must necessarily be destroyed by the degree of

putrefaction necessary to separate the membrane from the fibre. The practice adopted in some parts of Brittany seems, therefore, much more rational, which is to ripple the *flax* after it has lain in the air two or three days, but even one day will be sufficient if the weather is dry.

The process of rippling is the next operation. A large cloth should be spread on a convenient spot of ground, with a ripple placed in the middle of it. In performing this operation, the capsules are separated from the stalks by means of an iron comb called a ripple, fixed on a beam of wood, on the ends of which two persons sit, who, by pulling the seed ends of the *flax* repeatedly through this comb, execute the operation in a very complete manner. In Scotland the pods are generally separated by the ripple, even when there is no intention of saving them for seed, as it is found when the *flax* is put into water without taking off the capsules, the water soon becomes putrid, in consequence of which the *flax* is greatly injured.

The management of the capsules and separating of the seed is the next operation. The capsules should be spread in the sun to dry, and those seeds which separate from the capsules of their own accord, being the fullest and ripest, should be set apart for sowing, in case the precaution of raising some *flax* purposely for seed has not been attended to. The capsules are then broken, either by treading or by threshing, in order to get out the remaining seeds, the whole of which, as well as the former, should be carefully sifted, winnowed, and cleaned. When the seed is laid up, it must be frequently stirred or ventilated to prevent its heating. Even this second seed affords a considerable profit by the oil which it yields, and also by being used when broken for fattening of cattle.

To facilitate the separation of the fibre from the bark, it is necessary to accelerate the process of decay or putrefaction. This may be done in different ways, but the chief are those of bleaching alone, or of steeping and bleaching. Bleaching is a tedious and laborious operation, when it is intended as a substitute for steeping, but it is the most certain for not injuring the fibre, and may be adopted on a small scale when steeping places are not at hand. In Dorsetshire and some other places, *flax*, instead of being steeped, is what is called dew-retted; that is, the stalks are allowed to lie on the grass until they arrive at that state in which the harl or woody part separate easily from the boon, reed, or fibre, by the action and influence of the dew. This is nothing more than exposing the *flax* to the influence of the weather for a longer period than is necessary, when the operation of watering has been previously performed, as in grassing. Steeping, however, is the most universal practice both in Britain and on the Continent. Of late an invention has been made by Mr. Lee of Middlesex, by which, with the aid of soft soap and machinery, the fibre is more completely separated than by steeping, and uninjured by that process. When *flax* is to be separated by this new process, the cultivator has only to pull it in handfulls, dry it, bind it into sheaves, and put it up in stacks like corn, till wanted by the manufacturer.

Steeping or watering, however, is and will be the general practice, till flax-dressing machines come into general practice. In performing this operation, the *flax*, whether it has been dried and rippled or pulled green, is loosely tied into small bundles, the smaller the better, because it is then most equally watered. These sheaves ought to be built in the pool in a reclining upright position, so that the weight placed above may keep the whole firm down. The weights made use of are commonly stones placed on planks or directly on the *flax*. The Flemish mode of steeping *flax*, as described by Radcliff, is said to improve the quality of the *flax* and greatly increase its whiteness. The mode differs from the common practice in placing the bundles in the steep vertically instead of horizontally, in immersing the *flax* by means of transverse sticks, with that degree of weight annexed, which shall not push it down to the bottom, but leave it to descend spontaneously towards the conclusion of the steepage; and in leaving at first a space of half a foot between the bottom and the roots of the *flax*. The spontaneous descent of the *flax* is an indication of its being sufficiently steeped, and the strength and quality of the fibre are said to be much better preserved by this mode, in which the temperature of the atmosphere acts with most force on the upper part of the plant, which needs it most.

The water most proper for steeping flax should be clear, soft, and in standing pools. Compared with running water, pools occasion the *flax* to have a better colour, to be sooner ready for the grass, and even to be of superior quality in every respect. Where soft, clear, stagnating water cannot be obtained without art, a pit or canal is commonly formed, adjoining a river or stream, whence water can be easily brought. This pit or canal is filled with water for some time (a week or two) before it be proposed to pull the *flax*, by this means the water acquires a greater degree of warmth than river water possesses, and which contributes greatly to facilitate the object farmers have in view in immersing green *flax* in water, namely, to make the flaxing substance part easily and completely from the boon reed or harl.

The period that flax ought to remain in the water depends on various circumstances, as the state of ripeness in which it is pulled, the quality and temperature of the water, &c. The most certain rule to judge when *flax* is sufficiently watered is, when the boon becomes brittle and the harl separates easily from it. In warm weather ten days of the watering process is sufficient; but it is proper to examine the pools regularly after the seventh day, lest the *flax* should putrefy or rot, which sometimes happens in very warm weather. Twelve days will answer in any sort of weather, though it may be remarked that it is better to give too little of the water than too much, as any deficiency may be easily made up by suffering it to be longer on the grass, whereas an excess of water admits of no remedy (*Brown*).

Grassing or bleaching flax is the next operation, the intention of which is to rectify any defect in the watering process, and to carry on the putrefying process to that point when the fibre will separate from the bark, boon, reed, or harl with the greatest ease. In performing this operation the *flax* is spread very thin on the ground, and in regular rows, the one being made to overlap the other a few inches, with a view of preventing, as much as possible, its being torn up and scattered by gales of wind. Old grass-ground, where the herbage does not grow to any great height, is the best for the purpose, as when the grass or weeds spring up so as to cover the flax, it is frequently rotted, or at least greatly injured thereby. The time allowed for grassing is regulated by the state of the *flax*, and seldom exceeds ten or twelve days. During this time it is repeatedly examined, and when it is found that the boon has become very brittle, so that on being broken and rubbed between the hands, it easily and freely parts from the harl, it is then taken up, a dry day being chosen for the purpose, and being bound in sheaves is either sent directly to the mill, which is the usual practice in the northern districts, or broken and scutched by a machine or implement for that purpose.

Steeping of flax in hot water and soft soap, said to be the invention of Lee, and for which he was granted by parliament a secret or unenrolled patent, is said to separate the fibre from the woody matter better than steeping in water, and this in the short space of two or three hours, and either with green flax or such as has been dried or stacked for months or years.

The dressing of flax consists of various operations, such as scutching, hacking, or breaking, by which the woody part is broken, and heckling or combing, by which the fibre is separ-

ated from the woody part, and sorted into lengths. These operations are often all performed by the cottager or small farmer, who grows *flax* for the purpose of spinning the fibre in his own family. But there are also public *flax* mills, impelled by water or other powers, by which *flax* is scutched, and it is then heckled by professed hecklers. A method of preparing *flax* in such a manner as to resemble cotton in whiteness and softness, as well as in coherence, is given in the Swedish Transactions for the year 1747. For this purpose a little sea-water is to be put into an iron pot, or an untinned copper kettle, and a mixture of equal parts of birch-ashes and quicklime to be strewed upon it; a small bundle of *flax* is to be opened and spread upon the surface, and covered with more of the mixture, and the stratification continued till the vessel is sufficiently filled. The whole is then boiled with sea-water for ten hours, fresh quantities of water being then supplied according to the evaporation, that the matter may never become dry. The boiled *flax* is to be immediately washed in the sea by a little at a time in a basket with a smooth stick, at first when hot, and when grown cold enough to be borne by the hands, it must be well rubbed, washed with soap, laid to bleach, and turned and watered every day. Repetitions of the washing with soap expedite the bleaching, after which the flax is to be beat, and again well washed; when dry it is to be worked and carded in the same manner as common cotton, and pressed betwixt two boards for 48 hours. It is now fully prepared and fit for use. It loses in this process nearly one-half of its weight, which however is abundantly compensated by the improvement made in its quality.

Lee's method of breaking flax and hemp without dew-retting was invented in 1810, and was the first step towards a great improvement, brought nearer to perfection by the new patent machines of Messrs. Hill and Bunby, which are portable, and may be worked in barns or any kind of out-house; they are also well calculated for parish workhouses and charitable institutions; a great part of the work being so light, that it may be done by children and infirm persons, and such is the construction and simplicity of the machines, that no previous instruction or practice in required. The woody part is removed by a very simple machine, and by passing through the second machine, equally simple, the flax may be brought to any degree of fineness equal to the best used in France and the Netherlands, for the finest lace and cambric. The original length of the fibre, as well as the strength remains unimpaired, and the difference of the produce is immense, being nearly two-thirds, one ton of flax being produced from four tons of stalks. The expense of working each ton obtained by this method is only five pounds. The glutinous matter may be removed by soap and water only, which will bring the flax to such perfect whiteness, that no further bleaching is necessary, even after the linen is woven; and the whole process of preparing flax may be completed in six days.

The produce of flax in seed is generally from six to eight, sometimes as high as ten or twelve bushels per acre, and the price depends in a great measure on that of foreign seed imported; as when sold to oil makers it is generally about one-half of Dutch seed, sold for the purpose of sowing. The seed is separated into three qualities, the best for sowing, the second best for crushing for oil, and the inferior for boiling or steaming for cattle.

The produce of flax in fibre varies exceedingly. Before being sorted, the gross product of fibre varies from three cwt. to half a ton per acre.

The use of flax in the linen manufacture is well known. The seed is crushed for oil, which is that in common use by painters; the cake or husk, which remains after the expression of the oil, is sold for fattening cattle, and in some places as a manure; and the inferior seed, not fit for crushing, is boiled and made into flax-seed jelly, esteemed an excellent nutriment for stock, the process of making which we shall here describe. The proportion of water to seed is about seven to one. Having been steeped in water eight and forty hours previous to boiling, the remainder is added cold, and the whole boiled gently about two hours, keeping it in motion during the operation, to prevent its burning to the boiler, thus reducing the whole to a jelly-like, or rather a gluey or ropy consistence. After being cooled in tubs it is given with the mixture of barley-meal, bran, and cut chaff; a bullock being allowed about two quarts of the jelly per day, or somewhat more than a quart of seed in four days; that is about one-sixteenth of the medium allowed of oil-cake.

The diseases of flax are few, and chiefly the fly, which sometimes attacks the plant when young, and the mildew and rust.

Medical qualities. Linseed contains about one-fifth of mucilage and one-sixth of fixed oil. The mucilage resides entirely in the skin, and is separated by infusion or decoction, the oil by expression. It is one of the cheapest fixed oils, but is generally rancid and nauseous, and unfit for internal use. Linseed is emollient and demulcent. The entire seeds are used in cataplasms. The infusion is much employed as a pectoral drink, and in ardor-urinæ, nephritic pains, and during the exhibition of corrosive sublimate.

Very useful or Common Flax. Fl. June, July. Britain. Pl. 1 to 3 feet.

50 L. MARGINA'TUM (Poir. suppl. 3. p. 443.) plant glabrous, erect; leaves linear-lanceolate, reflexed; sepals with white margins, and are as well as the capsules mucronated; petals crenated. ♃. H. Native of? L. angustifòlium, Willd. enum. 338. but not of Huds. L. affìne, Panz. mss. Very like *L. usitatíssimum*, but the flowers are smaller.

Marginated-sepalled Flax. Fl. Ju. Jul. Clt. 1810. Pl. 2 ft.

51 L. REFLE'XUM (Ait. hort. kew. 1. p. 307.) leaves ovate-lanceolate, acuminated, reflexed, smooth; sepals acuminated; filaments connate. ♃. H. Native of the south of Europe. Flowers blue.

Reflexed-leaved Flax. Fl. July. Clt. 1777. Pl. 1½ foot.

52 L. RU'BRUM (Rafin. carl. p. 74.) plant glabrous; stem straight, branched, angular at the top; leaves linear acute, 1-nerved; peduncles rather corymbose, striated; sepals ovate, acuminated, 3-nerved, with scarious margins. ♃. H. Native of Sicily near Agrigentum. Flowers rose-coloured. Allied to *L. usitatíssimum.*

Red-flowered Flax. Fl. June, July. Pl. 1½ to 2 feet.

53 L. OLIGOPHY'LLUM (Willd. mss. in Schult. syst. 6. p. 758.) stem branched; leaves linear, scale-formed; flowers solitary; sepals ovate, acuminated. ♃. F. Native of Buenos Ayres.

Var. α, glandulòsum (Schiede in Schlecht. Linnæa. 1. p. 68.) branched; leaves spreading, furnished with as tipular gland at the base.

Var. β, eglandulòsum (Schiede, l. c.) leaves spreading, destitute of the stipular gland.

Var. γ, squamifòlium (Schiede, l. c.) stem simple; leaves scale-formed, without the stipular gland.

Few-leaved Flax. Pl. 1 foot?

54 L. SQUAMULÒSUM (Rud. in Willd. enum. p. 338.) plant glabrous, erect; leaves linear-awl-shaped, erect, lower ones smaller, and crowded; sepals ovate, acute, 5-nerved, with membranaceous margins; petals hardly thrice the size of calyx. ♃. H. Native of Tauria and on the banks of the Don. Flowers blue, but sometimes apetalous, according to Rudolph. L. Austrìacum, Bieb. fl. taur. 1. p. 245. but not of Lin.

Scaly-leaved Flax. Fl. July, Aug. Clt. 1818. Pl. 1 to 2 ft.

55 L. DIFFU'SUM (Schult. obs. 63.) plant glabrous, diffuse, ascending; stems branched; branches spreading; leaves linear-lanceolate, acute, 1-nerved; petals twice the size of the calyx.

4. H. Native of? Flowers pale blue. L. Austrìacum, Lam. dict. 3. p. 521. Branches spreading horizontally.

Diffuse Flax. Fl. June, July. Clt. 1823. Pl. ½ to 1 foot.

56 L. ANGUSTIFÒLIUM (Huds. angl. 134.) plant glabrous, many-stemmed, rather erect; leaves linear-lanceolate, acute, 3-nerved; sepals elliptical, 3-nerved, acutish; petals hardly twice the size of the calyx. 4. H. Native of France, and Italy, also of Asia and New Holland. In England in sandy or chalky pastures, especially towards the sea. About St. Ives and Truro, Cornwall, plentifully; in Sussex and Kent; near Walsingham, and in Gunton fields, Norfolk; at Darsham, Suffolk; in a field by Allerton Hall, near Liverpool. Smith, engl. bot. t. 381. Petals pale-purple, with a slight notch.

Narrow-leaved Flax. Fl. July. England. Pl. 1 foot.

57 L. SI'CULUM (Presl. ex Spreng. syst. app. p. 127.) stem simple; leaves linear-lanceolate, acute, 3-nerved; flowers in corymbose panicles; sepals acuminated, 3-nerved, with glandular margins; petals emarginate. 4? H. Native of Sicily.

Sicilian Flax. Pl. 1 foot.

58 L. AGRE'STE (Brot. fl. lus. 481.) stems rather tufted, oblique, and are as well as lanceolate, 3-nerved; acuminated leaves glabrous; sepals lanceolate, 3-nerved, acuminated; petals cuneated; capsules mucronate, woolly at the dissepiments. ⊙. H. Native of Portugal. Petals white, with purple lines and 5 blue nerves at the claws, or from purplish-white to ash-coloured.

Wild Flax. Fl. June, July. Pl. 1 to 2 feet.

59 L. SIBI'RICUM (D. C. prod. 1. p. 427.) plant glabrous, erect, tall; leaves linear, acute, spreading, without dots; sepals oval, 5-nerved at the base, outer ones acutish, inner ones very blunt, all with membranaceous margins; petals entire, three or four times larger than the calyx. 4. H. Native of Siberia. L. perénne, var. Sibírica, Lin. spec. 379. Mill. fig. t. 166. f. 2. good. L. Austrìacum, Sims. bot. mag. t. 1086. Flowers large, beautiful blue.

Siberian Flax. Fl. June, July. Clt. 1775. Pl. 3 to 4 feet.

60 L. LEWI'SII (Pursh, fl. amer. sept. 1. p. 210.) stems tall, numerous, glabrous; leaves scattered, lanceolate-linear, mucronate, glabrous; sepals ovate, acuminated, 3-nerved; petals rounded at the apex. 4. H. Native of North America in the valleys of the Rocky Mountains, and on the banks of the Missouri. L. Sibíricum, var. Lewísii, Lindl. bot. reg. 1163. Flowers large, pale blue. Plant glaucous.

Lewis's Flax. Fl. July. Clt. 1826. Pl. 1 to 2 feet.

61 L. A'NGLICUM (Mill. dict. no. 5.) plant glabrous, ascending; leaves linear, acute, erect; sepals obovate, obscurely 5-nerved, outer ones hardly mucronate, inner ones obtuse, with membranaceous margins; petals emarginate, two or three times longer than the calyx. 4. H. Native of England on chalky hills in Cambridgeshire, Northamptonshire, and Westmoreland, and at Marsham, Norfolk. L. perénne, var. A'nglica, Lin. L. perénne, Smith, fl. brit. 343. engl. bot. 1. t. 40. Mart. fl. rust. t. 134. Roots woody. Flowers pale-blue.

Var. β, procúmbens (Rai. angl. 3. p. 362.) stems procumbent. 4. H.

English Flax. Fl. June, July. England. Pl. 1 to 1½ foot.

62 L. AUSTRI'ACUM (Lin. mant. 359.) plant glabrous, erect; leaves linear or rather lanceolate, acute, erectish, full of pellucid dots; branches racemose; fructiferous pedicels deflexed; sepals oval, obtuse, 3 or 5-nerved at the base; petals retuse, three or four times longer than the calyx. 4. H. Native of Austria on hills. Jacq. fl. austr. t. 418. Petals pale, blueish-purple.

Austrian Flax. Fl. Ju. Jul. Clt. 1775. Pl. 1 to 2 feet.

63 L. MONTA'NUM (Schleich. cat. pl. helv. D. C. prod. 1. p. 427.) plant glabrous, erectish, many-stemmed; leaves linear or lanceolate, acute, erectish; flowers in panicled corymbs; fructiferous pedicels erect; sepals oval, 3-nerved at the base, with membranaceous margins, outer ones acute, inner ones obtuse, thrice as large as the calyx. 4. H. Native of France, Switzerland, Italy, and Hungary, on grassy mountains. L. Austrìacum, D. C. suppl. 615. L. alpìnum, D. C. fl. fr. 4. p. 615. L. perénne, Lam. fl. fr. 3. p. 66. Bert. amœn. it. 352. L. læ've, Scop. carn. ed. 2. no. 387. t. 11. L. Narbonénse, Sut. helv. 184. L. alpìnum β, elàtius, Wahl. carp. 299. Flowers blue.

Mountain Flax. Fl. June, July. Clt. 1817. Pl. 1 foot.

64 L. ALPI'NUM (Lin. spec. 1672.) plant glabrous, decumbent, many-stemmed; leaves linear, awl-shaped, spreading, full of pellucid dots; flowers few, rather corymbose; fructiferous pedicels erect; sepals oval, 3-nerved at the base, with membranaceous margins, outer ones acutish, inner ones obtuse, thrice as large as the calyx. 4. H. Native of the south of France, north of Italy, and Austria, on dry mountains. Jacq. aust. t. 321. Sweet, fl. gard. t. 17. Linum perénne γ, alpìnum Schiède in Schlecht. Linnæa. 1. p. 70. Flowers large, blue.

Alpine Flax. Fl. July, Aug. Clt. 1739. Pl. ½ foot.

65 L. DECU'MBENS (Desf. atl. 1. p. 278. t. 79.) plant glabrous, many-stemmed, decumbent; leaves linear-awl-shaped, acute, erect; flowers few, somewhat corymbose; fructiferous pedicels erect; sepals ovate, membranaceous, pointed at the apex; petals retuse, twice as long as the calyx. 4. H. Native of the north of Africa in fields, in the kingdom of Tunis. Flowers rose-coloured.

Decumbent Flax. Fl. June, July. Clt. 1817. Pl. ½ foot.

66 L. GRANDIFLÒRUM (Desf. atl. 1. p. 277. t. 78.) plant glabrous, erectish, branched at the base; leaves linear-lanceolate, acute, erectish; flowers loosely panicled; sepals lanceolate, acute, ciliary-serrated, rather longer than the capsules. 4. F. Native of the north of Africa in fields near Mascar. Flowers large, rose-coloured. Leaves rough on the margins.

Great-flowered Flax. Fl. June, Jul. Clt. 1820. Pl. ½ to 1 ft.

67 L. TENUIFÒLIUM (Lin. spec. 398.) stems branching from the base, erect, glabrous; leaves linear-setaceous, smoothish; sepals lanceolate, acuminated, fringed with glandular hairs in the middle, exceeding the capsule in length; petals three times longer than the calyx. 4. H. Native of many parts of Europe on arid hills, particularly in France, Switzerland, and Germany. Jacq. fl. austr. t. 215.—Clus. hist. 1. p. 318. f. 2.—Flowers of a dirty whitish flesh-colour. Leaves spinulose on the margins.

Slender-leaved Flax. Fl. June, July. Clt. 1759. Pl. 1½ ft.

68 L. SALSOLOI'DES (Lam. dict. 3. p. 521.) stems shrubby at the base, branched and a little twisted; branches ascending, sterile ones short; leaves linear-setaceous, smoothish; sepals ovate, acuminated, fringed with glandular hairs in the middle, rather shorter than the capsules; petals 3-times longer than the calyx. ħ. H. Native of France, Provence, and Vascony, in arid places. L. suffruticòsum, D. C. fl. fr. 5. p. 616. but not of Cav.—Barrel. icon. t. 795. Flowers small, of a dirty whitish flesh-colour.

Salsola-like Flax. Fl. June, July. Clt. 1810. Pl. 1 foot.

69 L. SUFFRUTICÒSUM (Lin. spec. 400.) stems shrubby at the base, branched, and are as well as linear, acute leaves, scabrous in all parts; sepals acuminated, fringed with glandular hairs in the middle; petals 5-times longer than the calyx. ħ. F. Native of Spain in arid fields. Cav. icon. 2. t. 108. L. tenuifòlium, Asso. syn. arr. 41. Linum, Bory. ann. gen. 3. p. 10. —Barrel. icon. t. 1231. Differing from *L. salsoloìdes* in being canescent and having oblong petals. Flowers large, pale-flesh-coloured, or white with purple claws.

Suffruticose Flax. Fl. Aug. Clt. 1759. Shrub 1½ foot.

70 L. CA'RNEUM (St. Hil. fl. bras. 1. p. 132.) leaves linear-lanceolate, very acute, glaucescent, lower ones opposite, upper

ones rather imbricate; panicle coarctate; sepals acute, serrulated, shorter than the petals. ♄. S. Native of Brazil. Plant shrubby at the base. Flowers flesh-coloured.

Flesh-coloured-flowered Flax. Pl. ½ to 1 foot.

† *Species not sufficiently known, but most of which evidently belong to the last section, with blue flowers.*

71 L. Hispa'nicum (Mill. dict. no. 7.) stem panicled, procumbent; leaves scattered, linear-lanceolate; sepals acute. ♃. H. Native of Spain. Flowers like those of *L. usitatíssimum.*

Spanish Flax. Fl. June, July. Clt.? Pl. procumbent.

72 L. bie'nne (Mill. dict. no. 8.) stems branched; leaves alternate, linear; sepals spreading, acuminated. ♂. H. Native of Istria. Flowers like those of *L. usitatíssimum.*

Biennial Flax. Fl. June, July. Clt.? Pl. 3 foot.

73 L. pallasia'num (Schult. syst. 6. p. 758.) plant pubescent; leaves linear, acute, hoary; sepals smoothish, acute, with white, lacerated margins. ♃. H. Native of Russia about Cherson. L. pubéscens, Willd. mss. Corolla blue, 3-times longer than the calyx.

Pallas's Flax. Pl. 1 to 2 feet.

74 L. pube'scens (Russ. allep. ex Schult. syst. 6. p. 758.) stem round; floral leaves opposite, lanceolate, pilose; flowers almost sessile; sepals ciliated, length of leaves. ♃? H. Native of Syria about Aleppo. Flowers unknown.

Pubescent Flax. Pl. 1 foot.

75 L. trine'rvium (Roth. nov. spec. 187.) plant glabrous; leaves alternate, linear, 3-nerved; sepals oblong, 3-ribbed. Native of the East Indies. Flowers perhaps yellow.

Three-nerved-leaved Flax. Pl. 1 foot?

76 L. Brote'ri (Hoffmansegg.) sepals awl-shaped, larger than the calyx; flowers rather panicled; leaves filiform, glandularly ciliated. Native of Spain. Flowers white.

Brotero's Flax. Pl.?

§ 3. *Flowers white. Leaves opposite.*

77 L. catha'rticum (Lin. spec. 401.) plant erect, glabrous; leaves opposite, obovate-lanceolate; stem forked at the top. ⊙. H. Native throughout Europe, both in dry and moist meadows; plentiful in Britain. Smith, engl. bot. 6. t. 382. Curt. lond. fasc. 3. t. 19. Mart. rust. t. 135. Schkuhr. handb. 1. t. 87. Black herb. t. 368. Petals white, acute. Flowers pendulous before expansion. This plant is bitter, and powerfully, but as it seems, not dangerously cathartic. Dr. Withering found 2 drachms or more, in a dose, of the dried herb, useful in obstinate rheumatisms.

Cathartic or Purging Flax or Mill Mountains. Fl. June, July. Britain. Pl. ½ to 1 foot.

Cult. Most of the species of this genus are very ornamental. The green-house and frame species grow freely in a mixture of loam and peat, and cuttings strike root readily in the same kind of soil under a hand-glass. The hardy shrubby species will grow in any light soil, and cuttings will root freely under a hand-glass. The hardy perennial species are well adapted for ornamenting flower-borders, but the dwarf kinds succeed best on rock-work, or to be grown in pots, that they may be protected by a frame in severe weather, or from too much wet; they may be increased by dividing the plants at the root, by cuttings planted under a hand-glass, or by seeds, which in most of the species ripen in abundance. The annual species only require to be sown in the open ground in April.

II. RADI'OLA (from *radiolus*, a little ray, in allusion to the rayed capsules). Gmel. syst. 1. p. 289. D. C. prod. 1. p. 428.

Lin. syst. *Tetrándria, Tetragýnia.* Sepals of calyx 4, joined to the middle, each of which is deeply and acutely 3-cleft. Petals 4, obovate, undivided, length of calyx. Anthers 2-lobed. Ovary 4-lobed. Styles 4, short. Stigmas capitate. Capsules roundish, somewhat pointed, with 8 furrows and 8 valves, with inflexed edges; 8 cells; seeds solitary in the cells, oval, compressed, polished.

1 R. linoìdes (Gmel. syst. 1. p. 289.). ⊙. H. Native in wet sandy ground throughout Europe; plentiful in Britain. R. millegràna, Smith. fl. brit. 202. engl. bot. 13. t. 893. Lìnum radìola, Lin. spec. 402. Fl. dan. t. 178.—Vaill. par. 33. t. 4. f. 6. Stem repeatedly forked, leafy, many-flowered, moderately spreading and somewhat corymbose. Leaves sessile, small, ovate, 3-ribbed. Flower-stalks solitary from the forks of the stem as well as its ultimate branches, white, very minute. Capsules light brown, rather depressed.

Flax-like Radiola or Flax-seed. Britain. Pl. 1 to 2 inches.

Cult. The seeds of this very small plant should be sown in a moist sandy situation, where it may afterwards be allowed to scatter itself.

Order XXX. MALVA'CEÆ (plants agreeing with *Málva* in important characters). Brown. congo. p. 8. Kunth, diss. 1822. p. 1. D. C. prod. 1. p. 429.—Malvàceæ § 1, 2, 3. Juss. gen. 271.

Calyx usually of 5 sepals (f. 84. *b.* f. 85. *b.*), rarely 3-4, more or less connected at the base, valvate in æstivation, usually bearing bracteas at the base (f. 83. *a.* f. 84. *a.*), these constitute an outer calyx or involucrum. Petals equal in number to the sepals (f. 83. *b.* f. 84. *c.* f. 85. *c.*) and alternating with them, hypogynous, equal, twisted in æstivation (f. 84. *b.*), sometimes distinct, but usually adnate to the tube of the stamens at the base. Stamens numerous, definite, but usually indefinite (f. 84. *d.*); filaments connected into a column (f. 84. *d.*), unequal, outer ones shortest; anthers 1-celled, kidney-shaped, bursting by a transverse chink. Ovary usually of many carpels (f. 83. *e.* f. 84. *h.*) disposed in a whorl around the axis, almost always connected. Styles equal in number with the ovaries, sometimes distinct, sometimes joined in one, with an equal number of stigmas (f. 84. *g.*) which are more or less distinct. Carpels sometimes 1-2-seeded, opening by a chink on the inside, sometimes many-seeded, opening by valves and with a dissepiment in the middle of each valve, bearing the seeds, sometimes nearly free, sometimes connected into a many-celled capsule (f. 83. *f.* f. 84. *h.*) sometimes connate, into an anomalous kind of berry (f. 85. *h. i.*). Seeds ovate or somewhat triquetrous, covered by a smooth or villous epidermis (f. 83. *g.* f. 84. *i.*). Albumen none. Embryo straight, dicotyledonous, with a terete radicle, and yellow twisted cotyledons.—Herbs, shrubs, or trees. Leaves alternate, usually stalked, toothed, or lobed. Villi usually stellately branched. Stipulas 2, at the sides of the leaves. Peduncles axillary, 1 or many-flowered, sometimes disposed in terminal racemose spikes in consequence of the upper leaves being absent. This order, before it was dismembered from *Bombàceæ* and *Byttneriàceæ*, contained most of the grandest flowers in nature. Even now the splendour of various species of *Althæ'a*, *Hibíscus*, &c. renders it a very remarkable group of plants, the greater part of which are

objects worthy of the gardener's care, particularly those which are hardy. In stoves and green-houses the species are particularly liable to the attacks of the red spider, mealy bug, and scale, a circumstance which makes them less generally esteemed than the beauty of many of them merits. The greater part of the plants contained in this Order are clothed with stellate pubescence, and a kidney-shaped, 1-celled anther is a character common to the whole. These two peculiarities, together with the alternate stipulate leaves, distinguish them from all the rest of *Thalamiflòræ*. All the species abound in a nutritive mucilage; a quality which renders the young heads of the *Okro* or *Hibíscus esculéntus*, an object of great value within the tropics as an ingredient in soups. In Brazil the *Abùliton esculéntum* serves the same purposes. The emollient properties of *Althæ'a officinàlis* are well known to physicians. A decoction of the leaves of *Sphærálcea Cisplatìna* is used for similar objects in Brazil. A species of *Pavònia* is employed in the same country as a diuretic in the form of a decoction. The straight shoots of *Sìda macrántha* are employed as rocket-sticks at Rio Janeiro. The chewed leaves of *Sìda carpinifòlia* allay the inflammation occasioned by the stings of wasps. The tough fibres of many *Malvàceæ* are manufactured into cordage. Their petals are astringent, whence those of *Hibíscus ròsa-Sinénsis* are used in China to blacken the eye-lashes, and the leather of shoes. The fibrous threads, in which the seeds of *Gossýpium* are enveloped, furnish the valuable cotton, an article of immense importance to the world; these threads, when examined by the microscope, will be seen to be finely toothed, which explains the cause of their adhering together with greater facility than those of *Bómbax* and several *Apocýneæ*, which are destitute of teeth, and which cannot be spun into thread without the admixture of cotton.

Synopsis of the genera.

Division I. *Calyx double, or girded by an involucrum.*

1 Ma'lope. Calyx girded by a 3-leaved involucrum; leaflets cordate. Carpels numerous, 1-seeded, disposed into a head.

2 Ma'lva. Calyx girded by a 3-leaved involucrum, rarely by a 5-6-leaved one; leaflets oblong or setaceous. Carpels capsular, 1-seeded, verticillate, disposed in an orbicular head.

3 Sphæra'lcea. Calyx girded by a 3-leaved involucel. Carpels, 2-3-seeded, verticillate, collected into a round head.

4 Modi'ola. Calyx girded by a 3-leaved involucel. Carpels bicuspidate, 2-seeded, disposed in a whorl.

5 Kitaibe'lia. Calyx girded by a 7-9-cleft involucel. Carpels capsular, 1-seeded, disposed into a 5-lobed head.

6 Althæ'a. Calyx girded by a 6-9-cleft involucel. Carpels capsular, 1-seeded, disposed into a globular head.

7 Lavate'ra. Calyx girded by a 3-5-cleft involucel; leaflets usually connected together to the middle. Carpels capsular, 1-seeded, disposed into an orb around the axis.

8 Mala'chra. General involucrum 3-5-leaved, girding a head of flowers. Calyx girded by a proper 8-12-leaved involucel; leaflets linear, or bristle-formed. Carpels 5, capsular, 1-seeded, disposed into a globular head.

9 Ure'na. Calyx girded by a 5-cleft involucel, especially with the leaflets connected to the middle. Anthers on the top of the staminiferous tube. Carpels 5, capsular, connivent, 1-seeded, usually echinated on the outside, with prickles, which are rayed at the apex.

10 Pavònia. Calyx girded by a 5-15-leaved involucel. Stigmas 10. Carpels 5, capsular, 2-valved, 1-seeded.

11 Malvavi'scus. Calyx girded by a many-leaved involucel. Petals erect, convolute. Stigmas 10. Carpels 5, baccate, 1-seeded, sometimes nearly distinct, but usually connate into a 5-celled fruit.

12 Lebretònia. Calyx 5-parted, girded by a shorter 5-parted involucel. Petals 5, exserted in part, twisted in æstivation, with a spreading limb. Styles 10. Carpels 5 or only 4 from abortion, 1-seeded, indehiscent.

13 Hibíscus. Calyx girded by a many-leaved, rarely with few-leaved involucel, distinct or connected with each other at the base. Petals not auricled. Stigmas 5. Carpels joined into a 5-celled capsule, with the valves bearing a dissepiment on the inside; cells many, rarely 1-seeded. Seeds woolly or smooth.

14 Pari'tium. Calyx girded by a 7-10-12-toothed or lobed involucel. Style 5-cleft. Capsule 5-celled, 5-valved, with a dissepiment in the middle of each valve, many-seeded. Seed smooth.

15 Laguna'ria. Calyx girded by an involucel, which is almost reduced to a prominent, entire or toothed margin. Capsule 5-celled, with a dissepiment in the middle of each valve. Cells many-seeded. Seeds smooth.

16 Thespe'sia. Calyx truncate, girded by a 3-leaved deciduous involucel. Capsule 5-celled; cells semi-partite, bearing 4 seeds at the base, with an incomplete dissepiment. Albumen sparing.

17 Gossy'pium. Calyx cup-shaped, bluntly 5-toothed, girded by a 3-leaved involucel (f. 83. *a*.) leaflets connected at the base, cordate, jagged. Stigmas 3-5. Capsule 3-5-celled (f. 83. *f*.), many-seeded. Seeds enveloped in cotton (f. 83. *g*.).

18 Redoute'a. Calyx 5-parted (f. 84. *b*.), girded by a 10-12-leaved involucel (f. 84. *a*.), shorter than the calyx. Stigmas 3 (f. 84. *g*.). Capsule 3-celled, 3-valved (f. 84. *h*.) many-seeded. Placentas 3, alternating with the valves, bearing woolly seeds (f. 84. *i*.) on all sides. Anthers in bundles (f. 84. *d*.).

19 Fugo'sia. Calyx 5-cleft (f. 85. *a*.), girded by a very short 12-leaved setaceous involucel. Anthers few, disposed as it were in a whorl on the middle of the staminiferous tube (f. 85. *d*.). Stigmas 1-3-4 (f. 85. *e*.). Capsule 3-celled, globose; cells 3-5-seeded (f. 85. *h*. *i*.). Seeds covered with short wool.

20 Se'rra. Calyx 5-toothed, small, girded by a 3-leaved involucel; leaflets cordate, entire. Anthers about 10, stipitate, on the top and sides of the tube, with a 4-5-crenate membrane under the ovary. Stigmas 5. Capsule 2-celled? 10-seeded.

21 Lopi'mia. Involucel 20-leaved, longer than the calyx; leaflets setaceous, connivent. Corolla flat. Column of stamens somewhat deflexed. Stigmas 10. Anthers 30-40. Capsule of 5 carpels; carpels 1-seeded, close, covered with viscid mucilage.

22 Polychlæ'na. Calyx 5-cleft, girded by a many-leaved, setaceous involucel. Capsule 5-celled, cells 1-seeded.

Division II. *Calyx without an involucel.*

23 PALA'VIA. Calyx naked, 5-cleft. Carpels capsular, numerous, 1-seeded, disposed into a head without any order.

24 CRISTA'RIA. Calyx naked, 5-cleft. Fruit orbiculately-depressed, covered with a thin pellicle, composed of numerous 1-seeded carpels, bearing 2 wings in the centre.

25 A'NODA. Calyx naked, 5-cleft; lobes acuminated, spreading when in fruit. Capsule somewhat hemispherical beneath, depressed above and star-formed, many-celled, especially with 1-celled, 1-seeded, connate carpels.

26 PERI'PTERA. Calyx naked, 5-cleft. Petals erect, spirally twisted into a tube, at length free. Capsule stellately many-celled; cells 1-seeded.

27 SI'DA. Calyx naked, 5-cleft, usually angular. Styles multifid at the top. Carpels capsular, 5-40, 1-seeded, seldom bladdery, disposed in a whorl around the axis, more or less connected with each other, or wholly connected into a many-celled capsule.

28 ABU'TILON. Calyx naked, 5-cleft, usually angular. Styles multifid at the apex. Carpels capsular, 5-30, many-seeded, usually bladdery, disposed in a whorl around the axis, so closely connected with each other as to form a many-celled capsule.

29 NUTTA'LLIA. Calyx naked, 5-cleft. Anthers numerous. Stigmas numerous, filiform. Carpels numerous, disposed into a ring or whorl, 1-seeded, not opening spontaneously.

30 LAGUNE'A. Calyx naked, 5-cleft. Anthers on the top and sides of the tube. Stigmas 5. Capsule 5-celled, 5-valved; valves with a dissepiment in the middle, separable, standing above the filiform central axis.

31 INGENHOU'ZIA. Calyx naked, 3-parted; lobes ovate, lanceolate, acuminated. Petals 5. Urceolus campanulate, situated within the petals. Stamens numerous, monadelphous. Style 1.

32 EURYA'NTHE. Calyx naked, 5-cleft. Petals 5. Stamens indefinite, hardly connected at the base. Style 1. Capsule 3-celled, 3-valved, many-seeded; valves with a dissepiment in the middle of each.

Division I. *Calyx double, or girded by an involucrum.*

I. MA'LOPE (from μαλος, tender; soft leaves). Lin. gen. no. 843. Lam. ill. t. 583. D. C. prod. 1. p. 429.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 3-leaved involucrum; leaflets cordate. Carpels many, 1-seeded, collected into a head. Herbs resembling *Málva*, with large purplish or small white flowers.

1 M. MALACOI'DES (Lin. spec. 974.) leaves ovate, crenated; stipulas oblong-linear; peduncles axillary, 1-flowered. ⊙. H. Native of Italy, Provence, Spain, Mauritania, and the island of Scio, in meadows. Sweet, fl. gard. icon. Cav. diss. t. 37. f. 1.—Sabb. hort. 1. t. 50.—Moris, hist. 2. p. 522, sect. 3. t. 17. f. 11.—Bocc. sicil. 15. t. 8. f. 2. Barrel. icon. t. 1189. Flowers purplish.

Var. β, *sinuàta* (D. C. prod. 1. p. 429.) leaves some obtusely trifid, others sinuated or pinnatifid. ⊙. H. Native of Mauritania. —Cav. diss. t. 27. letter X. Intermediate between *M. malacoìdes* and *M. stipulàcea*. Flowers large, purplish-violet, like those of a species of *Mallow*.

Mallow-like Malope. Fl. July, Aug. Clt. 1710. Pl. 1½ ft.

2 M. STIPULA'CEA (Cav. ann. cienc. nat. 3. p. 74.) leaves ovate, crenated; stipulas cordate, ovate, acute; peduncles axillary, 1-flowered. ⊙. H. Native about Mogodor. Flowers large, purple, like those of a common *Mallow*.

Large-stipuled Malope. Fl. July, Sept. Pl. 1 foot.

3 M. TRI'FIDA (Cav. diss. 2. p. 85. t. 27. f. 2.) leaves 3-nerved, trifid, toothed, glabrous; lobes acuminated; peduncles axillary, 1-flowered. ⊙. H. Native of Portugal, Spain, and Mauritania, in meadows. Flowers large, purple.

Trifid-leaved Malope. Fl. July, Sept. Clt. 1808. Pl. 1 to 2 feet.

4 M. MULTIFLÒRA (Trig. in Cav. diss. 2. p. 85.) leaves roundish, crenated, villous; flowers 3-4, axillary. ⊙. H. Native of Portugal and Spain. Flowers small, white.

Many-flowered Malope. Pl. ½ foot.

Cult. The seeds of these beautiful plants only require to be sown in the open border about the beginning or middle of April.

II. MA'LVA (altered by the Latins from the Greek word μαλαχη, *malache*, soft, which comes from μαλασσω, to soften; in allusion to the soft mucilaginous qualities of the species). Lin. gen. no. 841. Lam. ill. t. 582. D. C. prod. 1. p. 430.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 3-leaved involucrum, or rarely with a 5 or 6-leaved involucrum; leaflets oblong or setaceous. Carpels capsular, many, disposed in a round head. Many of the species are shewy. *Málva* was an excellent vegetable among the Romans, but what species is uncertain, and the Chinese use some sort of *Mallow* as food.

SECT. I. MALVA'RTRUM (a name altered from *Málva*). D. C. prod. 1. p. 430. Carpels 1-celled, 1-seeded.

§ 1. *Chrysánthæ* (from χρυσος, *chrysos*, gold, and ανθος, *anthos*, a flower; because all the species contained in this section have yellow flowers). *D. C. prod.* 1. *p.* 430. *Leaves undivided. Flowers small, yellow, almost sessile in the axils of the upper leaves, and sometimes apparently in spikes, in consequence of the upper leaves being wanting.*

1 M. TRICUSPIDA'TA (Ait. hort. kew. ed. 2. vol. 4. p. 210.) leaves oblong or ovate, acute, serrated; flowers axillary, glomerate; carpels tricuspidate. ♂. S. Native of Jamaica. M. Americàna, Cav. diss. 2. t. 22. f. 2. M. carpinifòlia, Desr. in Lam. dict. enc. 3. p. 754. M. Coromandeliàna, Willd. Swartz, Sìda Jamaicénsis, Mill.

Var. β, *subtríloba* (D. C. prod. 1. p. 430.) leaves somewhat 3-lobed. M. Antillàrum, Zucc. obs. no. 79.

Tricuspidate-carpelled Mallow. Fl. July, Aug. Clt. 1726. Pl. 1 foot.

2 M. AMERICA'NA (Lin. spec. 968.) leaves ovate, acute, crenately serrated, rather pilose; flowers axillary, generally solitary, or in terminal capitate spikes; carpels awnless. ⊙. H. Native of St. Domingo. M. ulmifòlia, Balb. herb. M. Curassávica, Desrous, in Lam. dict. enc. 3. p. 754.

American Mallow. Fl. July. Clt. 1756. Pl. 1 foot.

3 M. SCA'BRA (Cav. diss. 5. t. 138. f. 1.) leaves ovate-lanceolate, coarsely toothed, obsoletely 3-lobed, under surface as well as branches scabrous with stellate hairs; peduncles axillary, generally 2-flowered. ♄. G. Native of Peru in arid places. M. scopària, Jacq. icon. rar. t. 139. M. corchorifòlia, Desrous in Lam. dict. enc. 3. p. 743. M. Lagàscæ, Cat. hort. taur. 1821. p. 36? There is a variety with sessile flowers.

Scabrous Mallow. Fl. June, July. Clt. 1798. Shrub 4 ft.

4 M. SCOPA'RIA (Lher. stirp. t. 27.) leaves ovate, crenately-serrated, under surface as well as branches somewhat velvety from stellate down; flowers axillary, crowded. ♄. G. Native of Peru. Cav. diss. 2. p. 65. t. 21. f. 4. Racemes axillary.

Broom Mallow. Fl. Aug. Sep. Clt. 1782. Shrub 6 feet.

5 M. BORBO'NICA (Willd. enum. 728.) leaves ovate, acute, grossly and unequally toothed, clothed with starry pubescence, upper leaves cuneated at the base; flowers axillary and in spikes at the tops of the branches. ♄. S. Native of Mauritius and Bourbon.

Bourbon Mallow. Fl. July, Aug. Clt. 1816. Shrub 5 ft.

6 M. POLYSTA'CHYA (Cav. diss. 5. t. 138. f. 3.) leaves ovate-acuminated, serrated, scabrous; flowers axillary, and in spikes at the tops of the branches; capsules 12, glabrous, awnless. ♄. G. Native of Peru. M. vetulìna, Desrous. in Lam. dict. enc. 3. p. 754.

Many-spiked Mallow. Fl. July, Aug. Shrub 4 feet.

7 M. TIMORIE'NSIS (D. C. prod. 1. p. 430.) leaves ovate, rather cordate, toothed, and are as well as branches clothed with starry rough hairs; flowers disposed in long cylindrical spikes; capsules 8-12, bearded at the apex, awnless. ♄. S. Native of the islands of Timor and Java.

Timor Mallow. Shrub 6 feet.

8 M. RUDERA'LIS (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 647.) leaves ovate, or ovate-lanceolate, acute, grossly serrated, rather pilose above and strigose beneath, as well as the branches; flowers axillary and glomerate at the tops of the branches; carpels pointed at the apex, but bicuspidate at the base. ♄. S. Native of Java.

Rubbish Mallow. Shrub 6 feet.

9 M. SPICA'TA (Lin. spec. 967.) leaves roundish, somewhat cordate, upper surface scabrous with stellate down, under surface tomentose; flowers disposed in terminal spikes; capsules 14, glabrous, awnless. ♄. S. Native of Jamaica. Cav. diss. 2. t. 20. f. 4. M. sublobàta, Desr. in Lam. dict. ency.—Sloane, hist. 1. p. 219. Lower flowers axillary, solitary.

Spiked-flowered Mallow. Fl. Sept. Oct. Clt. 1726. Shrub 2 to 3 feet.

10 M. OVA'TA (Cav. diss. 2. p. 80. t. 20. f. 2.) shrubby; leaves dentately serrated, cuneate-lanceolate, pubescent on both surfaces: flowers disposed in oblong, terminal spikes; carpels 10, awnless. ♄. S. Native of Brazil near Rio Janeiro.

Ovate-spiked Mallow. Shrub 3 to 6 feet.

11 M. SUBHASTA'TA (Cav. diss. 2. p. 72. t. 21. f. 3.) leaves ovate, acuminate, somewhat hastate, obsoletely 3-lobed, grossly toothed, and are as well as branches hairy; peduncles solitary, axillary, length of footstalks. ♄. S. Native of Brazil and Peru.

Subhastate-leaved Mallow. Shrub 2 to 4 feet.

12 M. TOMENTO'SA (Lin. spec. 967.) leaves cordate, crenated, obtuse, and are as well as branches tomentose; flowers lateral, crowded. ♄. S. Native of the East Indies.—Pluk. amalt. t. 356. f. 1.?

Tomentose Mallow. Fl. Sept. Oct. Clt. 1820. Sh. 3 feet.

13 M. WALTHERIFO'LIA (Link. enum. 2. p. 209.) leaves somewhat cordate, acute, toothed, under surface tomentose; flowers sessile; lobes of calyx ovate; leaflets of involucrum very narrow. ♃. S. Native of Java. Leaves hoary on the under surface. Corolla larger than the calyx.

Waltheria-leaved Mallow. Clt. 1824. Pl. 1½ foot.

14 M. TRACHELIIFO'LIA (Link. enum. 2. p. 209.) leaves cordate, acuminated, serrated, scabrous, lower ones lobed; peduncles axillary; flowers capitate. ⊙. H. Native of? Leaves on long footstalks. Calyx hairy. Corolla larger than the calyx.

Throat-wort-leaved Mallow. Fl. July, Aug. Clt. 1821. Pl. 1½ foot.

15 M. GANGE'TICA (Lin. spec. 967.) leaves cordate, obtuse, glabrous; flowers sessile, glomerate; carpels 10, awnless, crenulated. ⊙. H. Native of the East Indies.—Pluk. phyt. t. 74. f. 6. Allied to *M. tricuspidàta*.

Gangetic Mallow. Fl. July, Aug. Clt. 1823. Pl. 1 to 2 ft.

16 M. DOMINGE'NSIS (Spreng. in herb. Balb. D. C. prod. 1. p. 431.) plant dwarf; leaves ovate, toothed, adult ones smoothish, younger ones, footstalks, and branchlets pilose; flowers axillary, solitary, on short pedicels; carpels hispid, tricuspidate. ♃. S. Native of St. Domingo.

St. Domingo Mallow. Fl. July, Aug. Clt. 1824. Pl. 1 foot.

17 M. SUBTRI'LOBA (Lag. nov. gen. et spec. 21.) leaves cordate, angularly-subhastate, crenated; peduncles axillary, very short, 3 or many-flowered; carpels 8 or 9, very smooth, awnless. ♄. G. Native of New Spain. Allied to *M. spicàta* and *M. scopària*.

Sub-three-lobed-leaved Mallow. Shrub 3 to 4 feet.

§ 2. *Cymbalàriæ* (from κυμβη, *kymbe*, a boat; in allusion to the round concave leaves.) *D. C. prod.* 1. *p.* 431. *Flowers purple or white. Pedicels axillary, 1-flowered, solitary. Outer calyx 3-leaved. Leaves roundish. Stems herbaceous.*

18 M. LEPRÒSA (Ort. dec. 8. p. 95.) leaves kidney-shaped, broadly crenated, and are as well as branches leprously white; stems prostrate; peduncles longer than the footstalks. ♃. S. Native of Cuba. Flowers purple.

Leprous Mallow. Fl. May, July. Clt. 1815. Pl. prostrate.

19 M. SHERARDIA'NA (Lin. spec. 1675.) leaves orbicular, cordate, velvety-tomentose, crenated; stems prostrate; pedicels arched, longer than the footstalks. ♃. H. Native of Bithynia. Cav. diss. 2. t. 26. f. 4.—Till. pis. 108. t. 35. f. 2.—Buxb. cent. app. 46. f. 32. Flowers small, red.

Sherard's Mallow. Fl. May, July. Clt. 1818. Pl. prostrate.

20 M. CYMBALARIÆFÒLIA (Desrous. in Lam. dict. enc. 3. p. 753.) leaves cordate, roundish, obsoletely 5-lobed, crenated, rather glabrous; stem decumbent? rather villous; pedicels longer than the footstalks.—Native of? Flowers white or red.

Boat-leaved Mallow. Pl. decumbent.

21 M. CRE'TICA (Cav. diss. 5. t. 138. f. 2.) leaves cordate, roundish, 5-angled, crenated, villous; pedicels longer than the footstalks; stem erect. ⊙. H. Native of Crete. Flowers purple and white. The whole plant is villous.

Cretan Mallow. Fl. June, Aug. Clt. 1825. Pl. 1 foot.

§ 3. *Bibracteolàtæ* (from *bis*, twice, and *bractea*, a bractea; in allusion to 2-leaved involucrum,) *D. C. prod.* 1. *p.* 431. *Flowers purple or white. Outer calyx of two leaves. Pedicels axillary, 1-flowered. Stems herbaceous.*

22 M. HISPA'NICA (Lin. spec. 970.) leaves semi-orbicular, crenated, upper ones somewhat rhomboidal; stems erect, hairy. ⊙. H. Native of Spain and Mauritania. Desf. atl. 2. t. 170. Corolla large, flesh-coloured. The whole plant is hairy.

Var. β, spithàmea (Cav. diss. 2. t. 18. f. 3.) leaves small, roundish, crenulated.

Spanish Mallow. Fl. July. Clt. 1710. Pl. 1 foot.

23 M. STIPULA'CEA (Cav. diss. 2. t. 15. f. 2.) lower leaves 3-lobed, very entire, upper ones multifid; segments trifid, and toothed at the apex; stipulas lanceolate, longer than the footstalks. ⊙. H. Native of Spain.—Asso, arrag. t. 5. f. 1. Flowers purple. Stems declinate.

Large *stipuled* Mallow. Fl. Ju. Aug. Clt. 1815. Pl. 1½ ft.

24 M. CUNEIFÒLIA (Cav. diss. 2. t. 20. f. 1.) leaves obovately-cuneiform, repand, truncate at the apex, villous; pedicels longer than the footstalks. ⊙? H. Native of? Flowers purple.

Wedge-leaved Mallow. Pl. 1 foot.

25 M. PAPA'VER (Cav. diss. 2. t. 15. f. 3.) leaves 3 or 5-parted; segments entire, linear, ciliated. ⊙? H. Native of Portugal. Flowers almost like those of *Papàver Rhœ's*.

Poppy-flowered Mallow. Pl. 1 foot.

26 M. ÆGY'PTIA (Lin. spec. 971.) leaves 3-parted; segments

quinquifid, toothed at the apex; stems erect; corolla a little smaller than the calyx. ⊙. H. Native of Egypt, Mauritania, and Spain. Cav. diss. 2. t. 17. f. 1. M. diphýlla, Mœnch. Flowers pale-blue or purple.

Egyptian Mallow. Fl. June, July. Clt. 1739. Pl. 1 foot.

27 M. TRI'FIDA (Cav. diss. 5. t. 137. f. 2.) leaves 3-parted; segments trifid, linear, obtuse; stems erect; corolla longer than the ciliated calyx. ⊙. H. Native of Spain. Flowers purple.

Trifid-leaved Mallow. Fl. Ju. July. Clt. 1815. Pl. ½ to 1 ft.

§ 4. *Bismálvæ* (meaning unknown). Medik. *D C. prod.* 1. *p.* 432. *Flowers purple or white. Pedicels axillary, solitary,* 1-*flowered. Involucrum* 3-*leaved. Leaves many-parted. Stems herbaceous.*

28 M. TOURNEFORTIA'NA (Lin. spec. 971.) leaves many-parted; lobes trifid, linear; stems decumbent; hairs almost wanting or in starry fascicles. ⊙. H. Native of Provence and Spain by the sea-side. Cav. diss. 2. t. 17. f. 3. M. marítima, Lam. fl. fr. 3. p. 140. Stems prostrate, and much branched at the base. Flowers purple.

Var. β, ciliàta (Dufour, in litt.) stem erect, rather dwarf. ⊙. H. Native of Spain.

Tournefort's Mallow. Fl. July, Aug. Clt. 1759. Pl. ½ ft.

29 M. ALCE'A (Lin. spec. 971.) lower leaves angular, upper ones 5-parted, cut; stems and calyxes roughish-velvety from stellate down. ♃. H. Native of many parts of Europe, particularly France and Germany. Cav. diss. 2. t. 17. f. 2. Sims, bot. mag. t. 2197.—Blackw. t. 309. Flowers pale purple.

Alcea or Vervain Mallow. Fl. July, Oct. Clt. 1797. Pl. 4 feet.

30 M. MORE'NI (Poll. veron. 1816.) lower leaves 5-lobed, upper ones palmately 5-cleft, with the lobes toothed; stems and calyxes roughish-velvety, with stellate hairs. ♃. H. . Native of Italy. M. alceoìdes, Ten. cat. 1819. p. 55. Hook, bot. mag. 2793. Flowers red, disposed in terminal corymbs.

Moreni's Mallow. Fl. July, Oct. Clt. 1820. Pl. 2-3 feet.

31 M. ITA'LICA (Poll. pl. veron. 1816.) stems erect, hairy; lower leaves somewhat kidney-shaped, 5-lobed, upper ones 5-parted, all toothed and roughish. ♃. H. Native of Italy. Flowers purple.

Italian Mallow. Fl. July, Sept. Clt. 1829. Pl. 3 feet.

32 M. MOSCHA'TA (Lin. spec. 971.) lower leaves kidney-shaped, cut, cauline ones with 5-deeply pinnatifid, jagged segments; stems and calyxes scabrous from simple hairs. ♃. H. Native of many parts of Europe. In Britain in grassy borders of fields, and by way sides on a gravelly soil. Smith, eng. bot. 754. Curt. lond. 4. t. 50. Fl. dan. 907. Cav. diss. 2. t. 18. f. 1. Flowers rose-coloured.

Var. β, laciniàta (Desrous. in dict. enc. 3. p. 750.) lower leaves as well as upper ones deeply divided into 5 pinnatifid, jagged segments.—Moris. ox. sect. 5. t. 18. f. 4. M. tenuifòlia, Sav. cent. p. 122. M. moschàta β, undulàta, Sims, bot. mag. 2298. Flowers white. The musky scent of these two plants undoubtedly proceeds from the herbage, not from the flowers.

Musk-scented Mallow. Fl. July, Aug. Britain. Pl. 1 to 1½ ft.

33 M. PURPURA'TA (Lindl. bot. reg. 1362.) plant pubescent, ascending; lower leaves 5-cleft, upper ones trifid; segments usually trifid, lobes forked, obtuse; peduncles solitary, axillary, longer than the petioles. ♃. F. Native of Chili in the Cumbre, a pass in the Andes. Petals purplish. An elegant ascending plant with fine leaves.

Purplish-flowered Mallow. Fl. June, July. Clt. 1825. Pl. prostrate.

34 M. ALTHÆOI'DES (Cav. diss. 2. t. 135.) leaves palmate; lobes lanceolate, toothed; hairs simple; pedicels longer than the leaves; sepals acuminated. ⊙. H. Native of Spain. Stems prostrate, hairy. Flowers large, whitish-rose-coloured.

Var. β, hirsùta (Ten. prod. 40.) lower leaves roundish-cordate, 7-lobed, the rest 5-parted. ⊙. H. Native of Sicily. Stems prostrate. Flowers large, rose-coloured.

Althæa-like Mallow. Fl. July, Aug. Clt. 1822. Pl. trailing.

35 M. FASTIGIA'TA (Cav. diss. 2. t. 23. f. 2.) leaves cordate, 5-lobed, acuminated, unequally toothed, with the middle lobe longer, and are as well as the erect stem tomentose from stellate tomentum; pedicels axillary, approximating into a terminal corymb. ⊙. H. Native of the mountains of Auvergne. Flowers large, rose-coloured. D. C. fl. fr. no. 4510.

Var. β, lobàta (Cav. diss. 2. t. 18. f. 4.) leaves somewhat cordate, crenated; flowers somewhat spiked. ⊙. H. Native of Spain. Petals large, purplish. Leaves 5-lobed.

Var. γ, Albulénsis (Cav. diss. 2. t. 34. f. 3.) upper leaves cuneiform at the base. ⊙. H. Native of Spain.

Fastigiate-flowered Mallow. Fl. June, July. Clt. 1818. Pl. 1 to 2 feet.

36 M. RIBIFÒLIA (Viv. fl. cors. app. in Schlecht. Linnæa. 1. p. 506.) stems erect, rough from simple and stellate hairs; lower leaves cordate, 5-lobed, upper ones 5-cleft, and palmately lobed, beset with stellate pubescence beneath; peduncles solitary, longer than the leaves; petals 3 times higher than the calyx. ♃. H. Native of Corsica.

Gooseberry-leaved Mallow. Pl. 1 to 2 feet.

37 M. CIRCINA'TA (Viv. fl. cors. app. in Schlecht. Linnæa. 1. p. 506.) stem erect, with a few scattered hairs; leaves cordate, crenulated, lower ones kidney-shaped, upper ones circinate, 6-lobed; petioles hispid above; peduncles solitary, 1-flowered, not half so long as the petioles; outer leaflets of the calyx oblong, inner ones ovate, acute, 4 times shorter than the corolla. ⊙. H. Native of Corsica. Like *M. Nicæénsis.*

Circinate-leaved Mallow. Pl. 1 foot.

§ 5. *Fasciculàtæ, D. C. prod.* 1. *p.* 432. *Flowers purple or white. Leaves angular, cordate,* 5-*nerved. Pedicels axillary, numerous,* 1-*flowered. Outer calyx* 3-*leaved. Stems herbaceous.*

38 M. TOMENTE'LLA (Presl. ex Spreng. syst. append. p. 257.) plant covered with stellate tomentum; stem prostrate; leaves orbicular, cordate, obtuse, 5-angled, toothed; peduncles shorter than the petioles. ⊙? H. Native of Sicily. Flowers red.

Sub-tomentose Mallow. Fl. June, July. Pl. prostrate.

39 M. MAURITIA'NA (Lin. spec. 970.) stem erect; leaves 5-lobed, obtuse; pedicels and footstalks smoothish. ⊙. H. Native of Italy, Spain, and Portugal. Cav. diss. 2. t. 25. f. 2. M. obtùsa, Mœnch. Flowers deep purple.

Var. β, Sinénsis (Cav. diss. 2. t. 25. f. 4.) stem reclinate, very smooth. M. glàbra, Desrous. in dict. enc. 3. p. 752. Flowers purple.

Mauritanian Mallow. Fl. Ju. July. Clt. 1768. Pl. 4 to 6 ft.

40 M. SYLVE'STRIS (Lin. spec. 969.) stem erect; leaves 5-7-lobed, acute; pedicels as well as footstalks pilose. ♂. H. Native of most parts of Europe about hedges, road sides, and in cultivated as well as in waste ground. Common in Britain. Smith, engl. bot. t. 671. Curt. fl. lond. fasc. 2. t. 51. Woodv. t. 54. Fl. dan. t. 1223. Cav. diss. 2. t. 26. f. 2. M. vulgàris, Ten. prod. fl. neap. Flowers purple, veiny. The whole plant, but especially the root, yields in decoction a plentiful, tasteless, colourless mucilage, very salutary in cases of internal irritation. Decoctions of the leaves are sometimes employed in dysenteries, heat, and sharpness of urine, and in general for obstructing acrimonious humours; but their principal use is in emollient glysters, cataplasms, and fomentations.

Var. β. albiflòra (D. C. prod. 1. p. 432.) lobes of leaves blunter; flowers white. M. venàta, Hortul.

Wild or Common Mallow. Fl. May, Aug. Britain. Pl. 1 to 4 feet.

41 M. RODI'GII (Presl. ex Spreng. syst. 3. p. 89.) stem diffuse, smooth and suffruticose at the base; leaves semi-orbicular, 5-lobed, crenate, smooth; peduncles tern, axillary; sepals ciliated; capsules tomentose. ♃? H. Native of Saxony. Flowers purplish.

Rodige's Mallow. Pl. 1 to 2 feet?

42 M. HENNI'NGII (Goldb. in act. mosc. 5. p. 133.) stem diffuse; leaves somewhat kidney-shaped, very bluntly 7-lobed; pedicels and petioles smoothish; petals not exceeding the calyx; carpels wrinkled. ♃. H. Native about Moscow, frequent. Petals white, tipped with red.

Henninge's Mallow. Fl. June, Aug. Clt. 1820. Pl. 1 foot.

43 M. ROTUNDIFÒLIA (Lin. spec. 969.) stems prostrate; leaves cordate, orbicular, very bluntly 5-7-lobed; fructiferous pedicels bent downwards, and are pubescent as well as footstalks; corolla twice the size of the calyx. ⊙. H. Native of most parts of Europe in waste ground, and by way sides in towns or villages, frequent; common in Britain. Smith, engl. bot. t. 1092. Curt. lond. fasc. 3. t. 43. Fl. dan. t. 721. Cav. diss. 2. t. 26. f. 3. Flowers pale lilac-coloured; but that said to be a native in cultivated grounds from Pennsylvania to Carolina has white flowers.

Var. β. pusílla (Smith, engl. bot. t. 241.) petals hardly larger than the calyx. M. parviflòra, Huds. angl. 307. but not of Lin. Flowers paler than in var. α. Native of England, near Hythe in Kent. M. boreàlis, Liljeb.

Var. γ, crenàta (Kit. in litt.) petals hardly larger than the calyx; leaves undivided, crenate-serrated. ⊙. H. Native of Hungary in ground impregnated with salt. Flowers lilac. Perhaps a proper species.

Round-leaved Mallow. Fl. June, Sept. Britain. Pl. prostrate.

44 M. NODÒSA (Wahl. in isis. 1828. vol. 21. p. 971.) pilose; stem prostrate; leaves 5-7-lobed, acutish, toothed; peduncles solitary or twin; carpels knotted, and are as well as the column hairy. ⊙. H. Native of Turkey about Constantinople. Flowers like those of *M. rotundifòlia*, but the fruit is double the size, with very prominent knots in the middle.

Knotted-carpelled Mallow. Fl. June, July. Pl. prostrate.

45 M. ARVE'NSIS (Presl. ex Spreng. syst. 3. p. 90.) stem prostrate; leaves cordately-orbicular, angularly-lobed; peduncles axillary, aggregate; corolla twice the length of the ciliated calyx; capsules wrinkled, pubescent. ⊙. H. Native of Sicily.

Corn-field Mallow. Pl. prostrate.

46 M. BRASILIE'NSIS (Desrous. in dict. enc. 3. p. 744.) stems diffuse; leaves orbicular, cordate, 7-lobed, soft, villous; lobes acutish; flowers aggregate, stalked; leaflets of involucel setaceous. ⊙. H. Native of Brazil near Rio Janeiro. Flowers purplish.

Brazilian Mallow. Fl. June, Aug. Clt. 1824. Pl. ¾ foot.

47 M. NICÆE'NSIS (All. ped. no. 1416.) stems prostrate; leaves angular, 5-lobed, acute; pedicels 3-4, erect, 4 times shorter than the footstalks; calyxes pilose, shorter than the corolla. ⊙. H. Native by road sides about Nice and in Spain. Cav. diss. 2. t. 25. f. 1. Flowers white, purplish at the top.

Var. β, montàna (Forsk. descr. 124.) leaves soft, villous. ⊙. H. Native of Egypt.

Nice Mallow. Fl. July, Aug. Clt. 1810. Pl. prostrate.

48 M. MICROCA'RPA (Desf. cat. hort. par.) stem erect; leaves cordate, roundish, somewhat 5-lobed, crenated, glabrous; pedicels generally in pairs, shorter than the footstalks; corolla exceeding the calyx a little. ⊙. H. Native of Egypt. Pers. ench. 2. p. 251. A small plant, with purplish flowers.

Small-fruited Mallow. Fl. Ju. Sept. Clt. 1823. Pl. ½ to 1 ft.

49 M. HIRSU'TA (Presl. ex Spreng. syst. append. p. 257.) stem erect, branched, very hairy; leaves orbicularly-cordate, denticulated, tomentose on both surfaces, lower ones somewhat angular, upper ones 5-lobed, obtuse; peduncles 4 together, hairy, erectly-spreading, 3-times shorter than the petioles; capsules wrinkled, tomentose. ⊙. H. Native of Sicily.

Hairy Mallow. Fl. June, July. Pl. 1 to 2 feet.

50 M. BIVONIA'NA (Presl. ex Spreng. syst. p. 257.) plant covered with stellate pubescence; stem erect; leaves cordately-orbicular, bluntly angled; peduncles aggregate, very short, pubescent, bent; capsules tomentose. ⊙? H. Native of Sicily.

Bivoni's Mallow. Fl. June, July. Pl. 1 foot.

51 M. PARVIFLÒRA (Lin. amœn. 3. p. 416.) stem spreading; leaves roundish, bluntly angular, crenated, smoothish; flowers axillary, almost sessile, glomerate; corolla hardly longer than the calyx. ⊙. H. Native of the south of France and Mauritania. Jacq. hort. vind. t. 39. Cav. diss. 2. p. 68. t. 26. f. 1.—Pluk. phyt. 44. f. 2. Flowers small, reddish. Carpels wrinkled above, with toothed margins.

Small-flowered Mallow. Fl. June, July. Clt. 1779. Pl. decumbent, 2 feet long.

52 M. VERTICILLA'TA (Lin. spec. 970.) stem erect; leaves cordate, rather orbicular, bluntly angular; flowers axillary, glomerate, sessile; calyxes scabrous, rather inflated; carpels smoothish. ⊙. H. Native of China. Jacq. hort. vind. t. 40. Cav. diss. 2. t. 25. f. 3. M. glomeràta, Hortul. Flowers small, white, but purplish at the tip, almost sessile.

Whorled-flowered Mallow. Fl. June, July. Clt. 1683. Pl. 1 to 2 feet.

53 M. CHINE'NSIS (Mill. dict. no. 5.) stem erect, herbaceous; leaves somewhat orbicular, obsoletely 5-lobed; flowers crowded, sessile. ⊙. H. Native of China. Perhaps *M. verticillàta*. Flowers reddish or white, tipped with red.

Chinese Mallow. Fl. June, Aug. Clt.? Pl. 1 to 2 feet.

54 M. MAREO'TICA (Delil. ined. D. C. prod. 1. p. 433.) stem erect; leaves half round, 5-nerved, crenated, upper ones slightly lobed; flowers somewhat aggregated into a terminal head, almost sessile; calyxes inflated, 5-cleft; lobes broadish, mucronate, entire; carpels reticulated, pubescent. ⊙. H. Native of Egypt. Flowers purplish?

Mareotic Mallow. Fl. July, Aug. Clt. 1822. Pl. 1 to 2 ft.

55 M. TRIONOI'DES (D. C. prod. 1. p. 433.) stem erect; leaves half-round, 5-nerved, crenate-toothed, upper ones slightly lobed; flowers almost sessile, approximating into a terminal head; calyxes inflated, 5-cleft; lobes lanceolate, acuminate, ciliary-serrated; carpels very hairy. ⊙. H. Native? Leaflets of involucel setaceous.

Trionum-like Mallow. Pl. ½ to 1 foot.

56 M. CRI'SPA (Lin. spec. 970.) stem erect; leaves angular, toothed, curled, glabrous; flowers axillary, sessile. ⊙. H. Native of Syria. Cav. diss. 2. t. 23. f. 1. Flowers white, but pale-purple at the tip, almost sessile.

Curled-leaved Mallow. Fl. June, Aug. Clt. 1573. Pl. 2 to 6 feet.

57 M. FLEXUÒSA (Horn. hort. hafn. 2. p. 655.) stems prostrate, flexuous; leaves cordate, orbicular, 7-lobed, crenated; flowers axillary, sessile, few. ⊙. H. Native of? Flowers white, purple at the tip, almost sessile.

Flexuous-stemmed Mallow. Fl. June, Aug. Clt. 1820. Pl. prostrate.

58 M. GERANIOI'DES (Schlecht, et Cham. in Linnæa. 5. p. 226.) herbaceous; stems diffuse, canescently-tomentose from fascicles of long hairs; leaves triangular, trifid, beset with simple hairs above, middle-lobe 3-5-lobed, lateral ones 2-lobed; calyx closed; clusters of flowers stalked. ⊙. H. Native of Mexico.

Geranium-like Mallow. Fl. June, July. Pl. diffuse.

59 M. TENE'LLA (Cav. icon. 5. t. 422. f. 3.) stem trailing; leaves 3-lobed, crenated; flowers axillary, sessile, aggregate; corolla hardly larger than the calyx. ⊙. H. Native of Chili on the Cordilleras. Flowers pale-blue. A small plant.

Weak Mallow. Fl. June, Aug. Pl. trailing.

60 M. BONARIE'NSIS (Cav. diss. 2. t. 22. f. 1.) stem erect, tomentose, branched; leaves 3-lobed; lobes unequally crenate-toothed; flowers glomerate, axillary, nearly sessile, small. ⊙. H. Native of Buenos Ayres in the fields. Flowers white or red.

Buenos Ayrean Mallow. Fl. July, Aug. Clt. 1820. Pl. 1 ft.

§ 6. *Capénses, D. C. prod.* 1. *p.* 433. *Flowers purplish or white. Leaves angularly lobed. Stems shrubby. Outer calyx or involucel* 3*-leaved. Pedicels solitary,* 1*-flowered, rarely in twos or threes, or* 2*-*3*-flowered.—N. B. Many of the species of this section are probably varieties or hybrids originated by culture. All natives of the Cape of Good Hope.*

61 M. AMŒ'NA (Sims, bot. mag. t. 1998.) pedicels 1-flowered, aggregate, shorter than the leaves; leaflets of outer calyx ovate, acuminated; leaves 5-lobed, pilose, wrinkled. ♄. G. Flowers purple. This is an elegant plant.

Pleasing Mallow. Fl. April, May. Clt. 1796. Shrub 2 to 4 feet.

62 M. VIRGA'TA (Cav. diss. 2. p. 70. t. 18. f. 2.) pedicels 1-flowered, solitary or in pairs, longer than the footstalks; leaflets of outer calyx linear; leaves 3-lobed, crenated, glabrous, rigid. ♄. G. Murr. in comm. gœt. 1779. p. 20. t. 6. M. Capénsis, Lin. spec. 968. Flowers purple, with darker stripes.

Twiggy Mallow. Fl. May, July. Clt. 1727. Sh. 2 to 3 ft.

63 M. CAPE'NSIS (Cav. diss. p. 71. t. 24. f. 3.) pedicels 1-flowered, solitary or in pairs, longer than the footstalks; leaflets of outer calyx ovate-lanceolate; leaves 5-lobed and 3-lobed, crenate-toothed, clammy. ♄. G. Ker, bot. reg. 295. M. biflòra, Desrous. in dict. enc. 3. p. 747. Flowers red and white. No. 3429 of Burch. cat. is perhaps different from this.

Cape Mallow. Fl. year. Clt. 1713. Shrub 4 to 6 feet.

64 M. BALSA'MICA (Jacq. icon. rar. 1. t. 140.) pedicels 1-flowered, solitary, longer than the footstalks; leaflets of outer calyx oblong-linear; leaves ovate, slightly 3-lobed, acute, unequally toothed. ♄. G. Flowers pink.

Balsamic Mallow. Fl. May, Sept. Clt. 1800. Shrub 4 ft.

65 M. OXYCANTHOI'DES (Horn. hafn. 2. p. 654.) pedicels solitary, longer than the petioles; leaves glabrous, cuneiform, profoundly 3-lobed, deeply serrated, intermediate lobe largish. ♄. G. Flowers white or red.

Hawthorn-like Mallow. Fl. May, Aug. Clt. 1818. Sh. 4 ft.

66 M. RUGÒSA (Desrous. in dict. enc. 3. p. 747.) pedicels 1-flowered, solitary, longer than the petioles; leaflets of outer calyx ovate, acute; leaves somewhat cordate, pinnatifidly-sinuated, wrinkled. ♄. G. Flowers purple.

Wrinkled Mallow. Fl. May, Sep. Shrub 4 feet.

67 M. TRIDACTYLI'TES (Cav. diss. 2. p. 73. t. 21. f. 2.) pedicels solitary, 1-flowered, length of leaves; leaves almost sessile, cuneiform, trifid, entire. ♄. G. M. refléxa, Andr. rep. t. 135. Leaflets of outer calyx linear. Flowers pink.

Three-fingered-leaved Mallow. Fl. June, Aug. Clt. 1791. Shrub 3 feet.

68 M. DIVARICA'TA (Andr. bot. rep. t. 182.) pedicels solitary, longer than the petioles; leaves lobed, plaited, toothed, scabrous; branches and branchlets divaricating, flexuous. ♄. G. Flowers white, lined with red at the base. Involucel linear.

Divaricate-branched Mallow. Fl. June, Sep. Clt. 1792. Shrub 3 feet.

69 M. RETU'SA (Cav. diss. 2. t. 21. f. 1.) pedicels solitary, longer than the petioles; leaflets of outer calyx lanceolate; leaves oblong, very blunt, 3-lobed, toothed, villous. ♄. G. M. tríloba, Thunb. prod. 118. Flowers yellow or pink.

Retuse-leaved Mallow. Fl. March, May. Clt. 1803. Shrub 4 feet.

70 M. CALYCI'NA (Cav. diss. 2. p. 81. t. 22. f. 4.) pedicels solitary, 1-flowered, twice as long as the leaves; leaflets of outer calyx ovate, acute, large; leaves cordate, crenated, clothed with rough hairs. ♄. G. Ker. bot. reg. 297. Flowers pale red.

Large-calyxed Mallow. Fl. May, Aug. Clt. 1812. Sh. 4 ft.

71 M. FRA'GRANS (Jacq. hort. vind. 3. t. 35.) pedicels 1-flowered, solitary, length of petioles; leaflets of outer calyx lanceolate; leaves cordate, 5-lobed, toothed; branches red, clammy. ♄. G. Cav. diss. 2. p. 72. t. 23. f. 3. Ker. bot. reg. 296. M. scabròsa, Lin. amœn. acad. 4. p. 343. Flowers red.

Fragrant Mallow. Fl. May, July. Clt. 1759. Shrub 6 ft.

72 M. STRI'CTA (Jacq. hort. schoenbr. 3. p. 294.) pedicels solitary, 1-flowered, length of petioles; leaflets of outer calyx rather linear; leaves ovate, slightly 3-lobed, toothed, hairy. ♄. G. Corolla white, veined with red at the base.

Straight Mallow. Fl. May, Aug. Clt. 1805. Shrub 6 feet.

73 M. BRYONIFÒLIA (Lin. spec. 968.) pedicels solitary, 1 or 2-flowered, shorter than the petioles; leaves cordate, slightly 5-lobed, blunt, clothed with very rough starry hairs. ♄. G. M. refléxa, Wendl. hort. herrenh. 1. t. 4. M. stellàta, Thunb. prod. 119.? Flowers purple or red?

Bryony-leaved Mallow. Fl. July, Aug. Clt. 1731. Sh. 4 ft.

74 M. GROSSULARIÆFO'LIA (Cav. diss. 2. p. 71. t. 24. f. 2.) pedicels solitary, 1 or 3-flowered, longer than the petioles; leaflets of outer calyx oblong-linear; leaves sinuately-lobed, serrated, rough, and are as well as branches hairy. ♄. G. Ker. bot. reg. 561.—Dill. elth. 209. t. 169. f. 207. Flowers red, with darker veins and white claws.

Gooseberry-leaved Mallow. Fl. May, Sept. Clt. 1732. Shrub 3 to 6 feet.

75 M. ASPE'RRIMA (Jacq. hort. Schoenbr. 2. t. 139.) pedicels 1 or 2-flowered, solitary, rather longer than the petioles; leaflets of outer calyx linear; leaves 5-lobed, obtuse-toothed, very rough; terminal lobe elongated. ♄. G. Flowers white with a red base. The whole plant is rough from stellate hairs.

Very rough Mallow. Fl. Ju. Sept. Clt. 1796. Shrub 5 ft.

§ 7. *Multiflòræ. D. C. prod.* 1. *p.* 434. *Flowers purple or white. Peduncles axillary, many-flowered. Outer calyx* 3*-leaved. Leaves angular.*

76 M. LA'CTEA (Ait. hort. kew. 2. p. 448.) shrubby; leaves angular, acute, cordate, villous; petals obcordate, rather shorter than the calyx; peduncles panicled. ♄. G. Native of Mexico. M. vitifòlia, Cav. icon. 1. t. 30. Flowers milk-white.

Milky-flowered Mallow. Fl. Jan. Feb. Clt. 1780. Sh. 4 ft.

77 M. CAPITA'TA (Cav. diss. 5. t. 137. f. 1.) shrubby; leaves 5-lobed; lobes pinnatifidly-jagged, toothed, intermediate one elongated; peduncles capitate, corymbose. ♄. G. Native of Peru. Flowers pale violet-coloured with white claws.

Capitate-flowered Mallow. Shrub 6 feet.

78 M. MINIA'TA (Cav. icon. 3. t. 278.) stems fruticulose, erect; leaves ovate, 3-lobed, toothed, tomentose; peduncles axillary, racemose, few-flowered, but sometimes only 1-flowered. ♄. G. Native of? Flowers vermilion.

Vermilion-flowered Mallow. Fl. May, July. Clt. 1798. Pl. 1 foot.

79 M. MUNROA'NA (Dougl. in bot. reg. 1306.) plant clothed with white tomentum; stems ascending; leaves roundish, cordate, somewhat 5-lobed, crenate; involucel setaceous; peduncles axillary and terminal, panicled, 3-5-flowered. ♃. H. Native of North America on the barren plains of the Columbia. Flowers elegant, of a vermilion colour.

Munro's Mallow. Fl. May, Oct. Clt. 1827. Pl. 1 to 2 ft.

80 M.? opercula'ta (Cav. diss. 2. t. 35. f. 1.) shrubby, tomentose; leaves angular, 5-lobed; intermediate lobe largest; peduncles axillary, racemose; flowers leaning to one side; carpsule operculate. ♄. G. Native of Peru in sandy places. Flowers pale purple.

Lidded-capsuled Mallow. Fl. July, Aug. Clt. 1795. Sh. 3 ft.

81 M. Peruvia'na (Lin. spec. 968.) plant herbaceous, erect; leaves palmatifid; spikes axillary; flowers leaning to one side; carpels denticulated. ⊙. H. Native of Peru. Jacq. hort. vind. t. 156. Cav. diss. 2. p. 68. t. 19. f. 1. M. exasperàta, Mœnch. Corolla small, violet.

Peruvian Mallow. Fl. June, Aug. Clt. 1759. Pl. 4 feet.

82 M. Lime'nsis (Lin. spec. 968.) plant herbaceous, erect; leaves 7-lobed, wrinkled; spikes axillary; flowers leaning to one side; carpels smooth. ⊙. H. Native of Peru at Lima. Jacq. hort. vind. t. 141. Cav. diss. 2. p. 69. t. 19. f. 2. M. læ'vis, Mœnch. Corolla blue.

Lima Mallow. Fl. July. Clt. 1768. Pl. 1 to 4 feet.

83 M. acau'lis (Cav. diss. 2. p. 82. t. 35. f. 2.) plant herbaceous, stemless; leaves all radical, angular, toothed; teeth with two bristles; peduncles rising from the root, many-flowered. ♃. G. Native of Peru on the Andes. Flowers yellowish.

Stemless Mallow. Pl. ½ foot.

Sect. II. Mala'chia (μαλαχη, *malache*, a mallow). D. C. prod. 1. p. 435. Involucel or outer calyx 5 or 6-leaved; leaflets linear. Carpels 5, 1-seeded, distinct, indehiscent.

84 M. hibiscifòlia (Desrous. in dict. enc. 3. p. 748.) leaves ovate, acuminated, somewhat angular, serrated, soft, villous; pedicels a little shorter than the petioles; involucel 5-leaved. ♄. S. Native of Bourbon. Flowers red.

Hibiscus-leaved Mallow. Shrub 6 feet?

85 M. Borya'na (D. C. prod. 1. p. 435.) leaves 5-angled, toothed, acute, pubescent; pedicels very short; involucel 6-leaved. ♄? S. Native of Bourbon. Lobes of calyx 3-nerved at the base. Flowers not seen, but they are probably red.

Bory's Mallow. Shrub.

† *Species not sufficiently known.*

86 M. orienta'lis (Mill. dict. no. 3.) stem erect, herbaceous; leaves lobed, obtuse, crenated. ⊙. H. Native of the Levant. Flowers large, beautiful red.

Eastern Mallow. Fl. Jul. Sept. Clt.? Pl. 1 to 2 feet.

Cult. The stove species of *Mallow* will succeed in any kind of rich soil, and cuttings of them will strike root freely if planted in light soil with a hand-glass placed over them. The greenhouse species will grow in the same kind of soil as the stove species, and are propagated in the same manner; most of them are worth cultivating for ornament, but particularly those belonging to the section *Capénses*. The hardy perennial species should be planted in the open border, and they may either be encreased by dividing the plants at the root or by seed. The most ornamental species are *M. moschàta*, *Morènii alcèa*, *Munroàna*, and *purpuràta*. The annual species only require to be sown in the open ground, but none of them are worth cultivating, unless in general collections, except *M. Mauritánica*, *triméstris*, and *Liménsis*.

III. SPHÆRA'LCEA (from σφαιρα, *sphaira*, a globe, and *Alcea*, Marsh-Mallow; in allusion to the disposition of the carpels.) St. Hil. fl. bras. 1. p. 209. Málva, sect. iii. Sphæròma, D. C. prod. 1. p. 435.

Lin. syst. *Monadélphia*, *Polyándria*. Calyx 5-cleft, girded by a shorter deciduous 3-leaved involucel. Carpels many, separable, verticillate, 2-3-seeded, opening by 2 little valves on the back, disposed into a globular head. Seeds kidney-shaped. Trees or shrubs, with toothed or 3-5-lobed leaves. Peduncles axillary at the tops of the branches, 1-flowered or umbellately, or racemosely 2-many-flowered. Flowers reddish or flesh-coloured. This genus has lately been divided from *Málva* by M. Auguste St. Hilaire; we shall therefore retain the authorities for the species under that genus.

1 S. Cisplati'na (St. Hil. fl. bras. 1. p. 210.) stem shrubby, slender; leaves ovate, somewhat 3-lobed, toothed or crenate, tomentose beneath; flowers axillary, racemose, secund; leaflets of involucel setaceous. ♄. S. Native of Brazil in the province of Cisplatine, where the plant is called *Malvalisco*. It is employed in fomentations in diseases of the chest.

Var. β, *quercifòlia* (St. Hil. l. c.) stems looser; leaves longer, blunter, cuneate at the base, and obsoletely crenated.

Cisplatine Globe-Mallow. Fl. Dec. Jan. Shrub 6 feet.

2 S. umbella'ta (Cav. icon. 1. t. 95.) leaves sub-peltate, 5-lobed, obtuse; peduncles axillary, umbelliferous; leaflets of involucel obovate, somewhat stipitate, deciduous. ♄. S. Native of New Spain on the declivities of mountains. Flowers large, of fiery violet-colour. Lod. bot. cab. 222.

Umbellate-flowered Globe-Mallow. Fl. Jan. April. Clt. 1814. Shrub 10 feet.

3 S. ròsea (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 435.) leaves sub-peltate, 5-lobed, acute; peduncles axillary, 1-3-flowered; leaflets of involucel ovate, sessile. ♄. G. Native of Mexico. Flowers rose-coloured. Leaflets of involucel 3-nerved. Very like *M. umbellàta*.

Rose-coloured-flowered Globe-Mallow. Shrub 4 feet.

4 S. abutiloìdes (Lin. spec. 971.) leaves 5-angled, tomentose; peduncles axillary, bifid, few-flowered; leaflets of involucel oblong-linear, small; fruit globose. ♄. G. Native of the Bahama islands, and on the sea-coast of Carolina. Jacq. hort. Schoenbr. 3. t. 293. Sims, bot. mag. 2544. Flowers large, purple. Leaves cordate, 5-7-lobed.

Abutilon-like Globe-Mallow. Fl. June, Sept. Clt. 1725. Shrub 20 feet.

5 S. obtusi'loba; plant clothed with stellate tomentum; leaves cordate, somewhat 5-lobed, crenated; lobes very blunt; peduncles axillary and terminal, corymbosely-racemose, many-flowered; flowers crowded; involucel of 3 linear leaflets; segments of calyx ovate. ♄. G. Native of Chili in the vicinity of Valparaiso. Málva obtusíloba, Hook. bot. mag. t. 2787. Petals obcordate, purple, with darkish claws.

Obtuse-lobed-leaved Globe Mallow. Fl. July. Clt. 1827. Shrub 3 to 4 feet.

6 S. e'legans (Cav. diss. 2. t. 16. f. 1.) leaves 3-parted, canescent, jagged, intermediate lobe trifid; pedicels axillary, 1-flowered, a little shorter than the petioles; fruit globose. ♄. G. Native of the Cape of Good Hope. Jacq. coll. 4. t. 6. f. 1. Flowers pink or yellowish-red. Carpels 3-seeded.

Elegant Globe-Mallow. Fl. June, July. Shrub 4 feet.

7 S. angustifòlia (Cav. diss. 2. p. 64. t. 20. f. 1.) leaves lanceolate, toothed, powdery; peduncles axillary, solitary, or in pairs, 1 or few-flowered; leaflets of involucel setaceous, deciduous. ♄. G. Native of Mexico. Cav. icon. 1. p. 48. t. 68. Sweet, fl. gard. icon. Flowers pink.

Narrow-leaved Globe Mallow. Fl. Aug. Sept. Clt. 1780. Shrub 3 or 4 foot.

Cult. The species of *Sphærálcea* will thrive in any light soil, and ripened cuttings will strike root if planted in the same kind of soil, under a hand-glass. All the species bear elegant flowers.

IV. MODI'OLA (from *modiolus*, the nathe of a wheel, in allusion to the whorled position of the carpels). Mœnch, meth.

620. St. Hil. fl. bras. 1. p. 210. Málva, sect. 4. Modìola, D. C. prod. 1. p. 435.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 3-leaved involucel. Petals entire. Tube of stamens divided into fascicles at the apex. Styles connected at the base. Capsule girded by the permanent calyx. Carpels many, separable, bicuspidate, verticillate, 2-valved, opening internally. Seeds 2 in each cell. Creeping or trailing herbs. Leaves 3-9, but usually 5-lobed, deeply serrate. Stipulas petiolar, twin. Peduncles axillary, solitary, rarely twin, 1-flowered, slender. Corolla violaceous or red. This genus has been lately separated by M. Auguste St. Hilaire from the genus *Málva*, we shall, therefore, retain the authorities for the species under that genus.

1 M. re'ptans (St. Hil. fl. bras. 1. p. 212. t. 43.) stem creeping; leaves 5-angled, profoundly 5-7-parted, cut; peduncles axillary, solitary, 1-flowered, longer than the leaves; ovary very hairy, 14-16-celled. ⊙. H. Native of Brazil in the provinces of Cisplatine and Rio Grande do Sul, on rocks. Flowers red.

Creeping Modiola. Pl. creeping.

2 M. Carolinia'na (Lin. spec. 969.) leaves many-lobed, deeply toothed; pedicels solitary, shorter than the petioles; fruit crested. ⊙. H. Native of North America in fields from Virginia to Carolina. Cav. diss. 2. t. 15.—Dill. elth. t. 4. f. 4. Schurhr. handb. 1. Flowers dark red or vermilion. Stem prostrate, rooting. Lower leaves undivided.

Carolina Modiola. Fl. Jul. Sept. Clt. 1723. Pl. prostrate.

3 M. urticifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 276.) leaves roundish-ovate, acute, obsoletely cordate, deeply serrated, somewhat 9-lobed, rather pilose; pedicel solitary, shorter than the petioles; flowers decandrous; capsule of 15-hispid carpels. ♃. G. Native of South America near Santa Fe de Bogota. Flowers violet, very like those of *M. Caroliniàna.*

Nettle-leaved Modiola. Fl. July, Sept. Pl. prostrate.

4 M. prostra'ta (Cav. diss. 2. t. 16. f. 3.) leaves palmately 5-7-lobed, deeply toothed; pedicels solitary, rather longer than the leaves; fruit glabrous; petals entire. ⊙. H. Native of Brazil at Monte Video by way sides. Sims, bot. mag. 2515. Flowers red. Ovary 14-16-celled.

Prostrate Modiola. Fl. June, Aug. Clt. 1806. Pl. prostrate.

5 M. erioca'rpa (D. C. prod. 1. p. 436.) leaves palmately 5-lobed, deeply toothed; pedicels in pairs, length of petioles; fruit villous. ♃. G. Native about Buenos Ayres in the fields called the Pampas. Flowers red.

Woolly-fruited Modiola. Pl. prostrate.

6 M. decu'mbens (Willd. enum. 731.) leaves ovate, deeply toothed, somewhat lobed; pedicels longer than the petioles; fruit villous; petals entire. ♃. G. Native of South America. Flowers red.

Decumbent Modiola. Fl. Ju. Sept. Clt. 1815. Pl. decumbent.

Cult. These plants will grow in any common garden-soil. They are all increased by seeds, which may be sown in the open border in April. The perennial kinds will require to be sheltered during severe weather.

V. KITAIBE'LIA (in honour of Paul Kitaibel, formerly professor of botany at Pest in Hungary, who travelled through that country in search of plants; author of Plantæ Rariores Hungariæ, 3 vol. fol. Pest, in conjunction with Waldstein.) Willd. nov. act. soc. n. Scrut. berl. 2. p. 107. t. 4. f. 4. D. C. prod. 1. p. 436. Waldst. et Kit. hung. 1. p. 29. t. 31.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 7 or 9-cleft involucel. Carpels capsular, 1-seeded, collected into a 5-lobed head. A large strong herb, with white flowers.

1 K. vitifòlia (Willd. l. c.) ♃. H. Native of Hungary. Leaves 5-lobed, acute, toothed. Flowers axillary.

Vine-leaved Kitaibelia. Fl. July, Sep. Clt. 1801. Pl. 5 to 8 ft.

Cult. This plant only requires to be planted in the open border, and is increased by dividing at the root.

VI. ALTHÆ'A (from αλθω, *altho*, to cure; in allusion to the well known salutary effects of *Althæ'a officinàlis.*) Cav. diss. 2. p. 91. D. C. prod. 1. p. 436.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 6 or 9-cleft involucel. Carpels capsular, 1-seeded, disposed into an orbicular head. Strong coarse plants, with the appearance of *Mallow.*

Sect. I. Althæa'strum (an alteration from *Althæ'a.*) D. C. prod. 1. p. 436. Althæ'a, Lin. gen. no. 839. Lam. ill. t. 581. Carpels emarginate, destitute of membranaceous margins. Involucel usually 8 or 9-cleft.

1 A. officina'lis (Lin. spec. 966.) leaves clothed with soft white tomentum on both surfaces, cordate or ovate, toothed, undivided or somewhat 5-lobed; peduncles axillary, many-flowered, much shorter than the leaves. ♃. H. Native of marshes, especially towards the sea-coast, in many parts of Europe. In Britain abundantly. Smith, engl. bot. t. 147. Woodv. t. 53. Fl. dan. 530. Cav. diss. 2. p. 93. t. 30. f. 2. Flowers of a delicate uniform blush-colour.

The whole plant, but especially the roots, abounds with mucilage. The roots are about the thickness of a finger, long and fibrous. When peeled and dried, they are perfectly white; and certain districts of France are celebrated for producing them in fine quality. They contain much mucilage, with saccharine principle. Dr. Duncan found that the decoction of the root reddens turnsole, and gelatinizes silicized potass. It is used as an emollient and demulcent in diseases attended with irritation and pain, as in various pulmonary complaints, and in affections of the alimentary canal and urinary organs; and it is applied externally in emollient fomentations, gargles, and clysters; and a favourite lozenge is named from it, *Pate de Guimauve.* In France the plant is called *Guimauve, mauve-qui,* that is to say, *Clammy Mallow.* It was anciently called *Malva-visca,* on account of the abundant mucilage in the roots.

Officinal Marsh-Mallow. Fl. July, Sep. Britain. Pl. 3 to 4 feet.

2 A. Taurine'nsis (D. C. prod. 1. p. 436.) leaves clothed on both surfaces with soft white starry tomentum, trifid or rather 3-parted; peduncles axillary, many-flowered, rather longer than the leaves, straight. ♃. H. Native on hills about Turin. A. officinàlis β, Willd. spec. 3. p. 771. Flowers blush-coloured. An intermediate species between *A. officinàlis* and *A. Narbonénsis.*

Taurin Marsh-Mallow. Fl. Jul. Sept. Clt. 1817. Pl. 3 to 4 ft.

3 A. Narbone'nsis (Pourr. in Cav. diss. 2. p. 94. t. 29. f. 2.) leaves pubescent, somewhat tomentose, lower ones 5 or 7-lobed, upper ones 3-lobed; peduncles many-flowered, lax, longer than the leaves. ♃. H. Native of France about Narbonne, and of Spain. Jacq. icon. rar. 1. t. 138. Asso, introd. in Oryct. arrag. 175. t. 5. f. 1. Flowers of a pale red colour.

Narbonne Marsh-Mallow. Fl. Aug. Sept. Clt. 1780. Pl. 3 to 6 feet.

4 A. canna'bina (Lin. spec. 966.) leaves pubescent, and somewhat hoary on the under surface, lower ones palmately-parted, upper ones 3-parted; lobes narrow, and grossly toothed; peduncles axillary, many-flowered, lax, longer than the leaves. ♃. H. Native of the south of France, Italy, and Hungary, on the margins of woods. Jacq. hort. vind. t. 124. aust. t. 101. Cav. diss. 2. p. 94. t. 30. f. 1. Flowers rose-coloured.

Hemp-like Marsh-Mallow. Fl. June, July. Clt. 1597. Pl. 5 or 6 feet.

5 A. hirsu'ta (Lin. spec. 965.) leaves cordate, clothed with rough hairs, but glabrous on the upper surface, lower ones lobed, upper ones 3-5-lobed; stem hispid; peduncles 1-flowered, longer than the leaves. ⊙. H. Native of many parts of Europe, particularly France, Italy, Spain, and Austria, in hedges. In England in hedges and cultivated fields near Cobham Hall in Kent. Cav. diss. 2. p. 95. t. 28. f. 1. Jacq. hort. vind. t. 125. austr. t. 170. Flowers very pale blush-coloured.

Hairy Marsh-Mallow. Fl. Ju, July. England. Pl. 1 to 2 ft.

6 A. Ludwi'gii (Lin. mant. 98.) leaves glabrous, cordate-roundish, lobed, and toothed; pedicels axillary, crowded, 1-flowered; calyxes villous. ⊙. H. Native of Sicily and Egypt. Cav. diss. 2. p. 96. t. 30. f. 3. icon. 2. t. 29. f. 1. Flowers white or blush-coloured, smaller than those of *A. hirsùta*.

Ludwig's Marsh-Mallow. Fl. June, July. Clt. 1791. Pl. 1 ft.

Sect. II. Alce'a (from αλκη, *alke*, remedy; the *Alcèa* of the ancients was a kind of *Mallow*. The present plants have the appearance, taste, and emollient effects of the *Marsh-Mallow*.) Lin. gen. no. 840. Lam. ill. t. 581. D. C. prod. 1. p. 437. Carpels surrounded by a membranaceous furrowed margin. Involucel 6 or 7-cleft.

7 A. acau'lis (Cav. diss. 2. t. 27. f. 3.) plant almost stemless; leaves roundish-cordate, somewhat 5-angled, crenated; pedicels 1-flowered, much shorter than the petioles; petals emarginate, bearded at the base. ⊙. H. Native of Syria. Flowers pale-yellow.

Stemless Hollyhock. Fl. June, July. Clt. 1680. Pl. ¼ ft.

8 A. Caribæ'a (Sims, bot. mag. t. 1916.) stem straight, hispid; leaves cordate, roundish, lobed, crenate-serrated; flowers solitary, almost sessile; petals somewhat obcordate, with bearded claws; stigmas diffuse. ♂. H. Native of the Caribbee Islands. Flowers rose-coloured, with a yellow base.

Caribbean Hollyhock. Fl. March, April. Clt. 1816. Pl. 3 ft.

9 A. stria'ta (D. C. prod. 1. p. 437.) stem puberulous, and somewhat scabrous; leaves cordate, bluntly 3-lobed, crenated; flowers solitary, on short pedicels; involucel one-half shorter than the inner calyx; lobes of calyx with 7-stripes; petals obcordate, 2-lobed. ♂. H. Native? Flowers pale, 2½ inches in diameter.

Striped-calyxed Hollyhock. Fl. July, Aug. Clt.? Pl. 5 ft.

10 A. pa'llida (Walds. et Kit. in Willd. spec. 3. p. 773.) stem erect, hispid; leaves roundish, cordate; involucel equal in length to the calyx; petals 2-lobed. ♂. H. Native of Hungary. Flowers whitish-purple.

Pale-flowered Hollyhock. Fl. July, Aug. Clt. 1805. Pl. 4 to 6 feet.

11 A. leuca'ntha (Fisch. in litt.) leaves roundish-cordate, 5-angled or 3-lobed, crenate, roughly pilose; stem, petioles, and peduncles hispid; racemes bractless, naked; flowers twin; petals cuneate, emarginate. ♂. H. Native of the Altaian Mountains. A. nudiflòra, Lindl. in hort. trans. 7. p. 251. Leaves large. Involucre 6-7-cleft, half as long as the calyx. Flowers white, with a greenish-yellow base.

White-flowered Hollyhock. Fl. July, Aug. Clt. 1824. Pl. 6 feet.

12 A. Frolovia'na (Fisch. mss.). ♂. H. Native of the Russian empire. This plant was introduced to the gardens in 1824, but has never flowered.

Frolove's Hollyhock. Pl. 6 feet?

13 A. ròsea (Cav. diss. 2. t. 29. f. 3.) stem straight, hairy; leaves cordate, with 5 or 7 angles, crenated, rough; flowers axillary, sessile, somewhat spiked at the top; petals a little crenated, with villous claws. ♂. H. Native of the Levant. Alcèa ròsea, Lin. spec. 966. Mill. fig. Ludw. ect. t. 42. Knor. del. 1. t. R. 15. Flowers rose-coloured, large. All the varieties of Hollyhock have originated from this plant. The flowers are either single or double, white, red, scarlet, yellow, buff-coloured, blackish-red, seldom variegated. Although the double varieties of Hollyhock are not constant, yet where the seeds are carefully saved from the most double flowers, the greatest number of the plants will arise nearly the same as the plants from which they were taken, provided no plant with single or bad-coloured flowers are permitted to grow near them. Therefore if any such appear, they should be removed from the good ones, that their pollen may not spread into the other flowers, which would cause them to degenerate.

Var. β ? bíloba (D. C. prod. 1. p. 437.) petals bluntly 2-lobed. ♂. H. This plant sometimes occurs in gardens under the name of *A. grandiflòra*, although the flowers are much smaller than in var. *α*.

Rose or Common Hollyhock. Fl. July, Sep. Clt. 1573. Pl. 8 feet.

14 A. Sine'nsis (Cav. diss. 2. t. 29. f. 3.) stem straight, glabrous, branched at the bottom; leaves cordate, scabrous, crenated, angular; flowers axillary, sessile, spiked at the apex of the branches; petals somewhat crenated, with villous claws. ⊙. H. Native of China. Differing from *A. ròsea* in the plant being annual, dwarfer, and the flowers a little larger. Flowers rose-coloured.

China Hollyhock. Fl. July. Clt. 1818. Pl. 3 or 4 feet.

15 A. Africa'na (Lour. fl. coch. p. 421. under Alcèa.) stem shrubby, hispid; leaves 3-lobed, crenated; flowers solitary, axillary, stalked; involucel and calyx 6-parted. ♄. G. Native of the Eastern coast of Africa. Flowers scarlet. Carpels 5.

African Hollyhock. Shrub 4 feet.

16 A. Coromandelia'na (Cav. diss. 2. p. 93.) tomentose; stem erect; leaves somewhat triangular, crenated, obtuse, 5-nerved, somewhat 3-lobed; flowers solitary, almost sessile, axillary; petals broad-oblong.—Native of Pondicheri. Flowers flesh-coloured.

Coromandel Hollyhock. Pl. 2 to 3 feet.

17 A. flexuòsa (Sims, bot. mag. t. 892.) stem somewhat flexuous, hispid; leaves cordate, somewhat 7-lobed, obtuse, on long footstalks; flowers axillary, solitary, stalked; petals obcordate. ♃. S. Native of the East Indies. Flowers scarlet.

Flexuous-stemmed Hollyhock. Fl. June, Aug. Clt. 1803. Pl. 2 to 3 feet.

18 A. ficifòlia (Cav. diss. 2. p. 92. t. 28. f. 2.) stem erect, pilose; leaves divided beyond the middle into 7 lobes; lobes oblong, obtuse, irregularly toothed; involucel almost one-half shorter than the calyx. ♂. H. Native of Siberia at the Don. Alcèa ficifòlia, Lin. spec. 697.—Knor. del. 2. t. A.—Blackw. herb. t. 54. Flowers large, single or double, generally yellow or orange-coloured, in terminal spikes.

Fig-leaved or Antwerp Hollyhock. Fl. June, Sep. Clt. 1597. Pl. 6 feet.

19 A. Lavateræfòlia (D. C. prod. 1. p. 437.) stem erect, pilose; leaves tomentose on both surfaces, palmately-lobed beyond the middle; lobes oblong, obtuse, irregularly toothed; involucels nerved, nearly equal in length with the calyx. ♂? H. Native at the bottom of mount Libanon near Seyde. Flowers yellow?

Lavatera-leaved Hollyhock. Pl. 2 to 6 feet.

Sect. III. Alphæ'a (meaning unknown.) D. C. prod. 1. p. 437. Carpels wrinkled from small nerves, not marginated. Involucel 5-cleft.

20 A. Burche'llii (D. C. prod. 1. p. 438.) stem erect, pilose; leaves cordate, somewhat 5-lobed, grossly toothed, velvety; pedicels axillary, 1-flowered, pilose, hardly shorter than

the petioles; involucel and calyx 5-cleft.—Native of the Cape of Good Hope. Urèna pilòsa, Burch. cat. no. 2557.

Burchell's Hollyhock. Pl. ?

21 A. Borbónica (D. C. prod. 1. p. 438.) stem erect, villous at the bottom, upper part as well as leaves velvety; leaves cordate, some of them somewhat 5-lobed, grossly toothed; pedicels axillary, 1-flowered, twice as long as the petioles; involucel ciliated at the base. ♄? ♃? S. Native of the island of Bourbon at the river St. Dionysius. A species nearly allied to *A. Burchéllii*.

Bourbon Hollyhock. Pl. ?

† *A species not sufficiently known.*

22 A. Cre'tica (Weinm. in syll. pl. nov.). This species is said to come very near to *A. acaúlis*, but we know nothing further of it.

Cretan Althæa. Pl. ½ foot.

Cult. Most of the species are worth cultivating for ornament, particularly those belonging to the section *Alcèa* or *Hollyhock*. They will all thrive in any kind of common garden soil. The herbaceous perennial kinds may be either increased by dividing the plants at the root or by seeds. The biennial and annual species only require to be sown in the open border in spring, and the plants should be transplanted separately when of sufficient size. The stove species are propagated in the same manner as the hardy species.

VII. LAVATE'RA (named by Tournefort in honour of the two Lavaters, physicians of Zurich, and naturalists.) Lin. gen. no. 842. Lam. ill. t. 582. D. C. prod. 1. p. 438.

Lin. syst. *Monadélphia, Polyándria*. Calyx 5-cleft, girded by a 3 or 5-cleft involucel; leaflets joined, especially to the middle. Carpels capsular, 1-seeded, disposed into an orb around the axis, which is variously dilated above the fruit.

Sect. I. Ste'gia (from στεγος, *stegos*, a covering, in allusion to the expanded receptacle concealing the ovaries.) D. C. fl. fr. 4. p. 835. prod. 1. p. 438. Receptacle or axis of fruit expanded at the apex into a disk, which conceals the ovaries.

1 L. trime'stris (Lin. spec. 974.) stem herbaceous, scabrous; leaves smoothish, roundish-cordate, upper ones lobed; pedicels solitary; orb of receptacle perfectly concealing the carpels. ☉. H. Native of Syria and Spain. Jacq. hort. t. 72.—Cav. diss. 2. p. 90. t. 3. f. 1. Curt. bot. mag. 109. Stègia Lavatèra, D. C. fl. fr. no. 4525. Flowers rose-coloured. A tall spreading elegant plant.

Var. β, albiflòra; flowers white.

Three-monthly Lavatera. Fl. July, Sep. Clt. 1633. Pl. 3 to 6 feet.

2 L. Pseu'do-O'lbia (Poir. suppl. 3. p. 309.) stem shrubby; leaves tomentose, lower ones 5-lobed; pedicels aggregate; orb of receptacle half concealing the carpels. ♄. F. Native? L. undulàta, Desf. arbr. 1. p. 471. not of Mill. Flowers pale purple. Habit almost of the following section.

False-Olbia Lavatera. Fl. June, July. Clt. 1817. Sh. 5 ft.

Sect. II. O'lbia (*L. O'lbia* grows in the environs of d'Hieres in Provence; in Latin called *O'lbia*.) Medik. malv. p. 41. D. C. prod. 1. p. 438. Receptacle of fruit central, conical, protruding.

3 L. phœni'cea (Vent. malm. t. 120.) stem arboreous; leaves acutely 5-lobed, toothed, smoothish; peduncles solitary, 3-5-flowered; involucel caducous. ♄. G. Native of Madeira and of Africa. Cultivated in the gardens of the Canary Islands, whence it has been introduced into Europe. L. coccínea, Dietr. Flowers large, scarlet.

Scarlet Lavatera. Fl. June, July. Clt. 1816. Tree 10 feet.

4 L. acerifòlia (Cav. el. hort. madr. p. 20.) stem shrubby; leaves acutely 5-lobed, rather toothed, smoothish; pedicels solitary, 1-flowered. ♄. G. Native of Teneriffe. D. C. cat. hort. monsp. p. 121. Lois. herb. amat. p. 322. Flowers pale-lilac.

Maple-leaved Lavatera. Fl. June, July. Clt. 1820. Sh. 6 ft.

5 L. Ju'lii (Burch. cat. no. 2664.) stem shrubby; leaves 3-5-lobed, hoary-tomentose beneath, with obtuse lobes; terminal lobe longest; peduncles somewhat racemose; involucel 3-parted. ♄. G. Native of the Cape of Good Hope. This plant should perhaps have been enumerated amongst *Málva*. Flowers red?

Julius's Lavatera. Shrub 5 feet.

6 L. hi'spida (Desf. atl. 2. p. 118. t. 171.) stem shrubby, rough from fascicles of hairs; leaves canescent, 5-lobed, upper ones 3-lobed or undivided; flowers almost sessile; involucel 3-parted, large, and very hairy. ♄. F. Native of Algiers in hedges. Flowers rose-coloured, solitary.

Hispid Lavatera. Fl. June, July. Clt. 1804. Shrub 8 feet.

7 L. Africa'na (Cav. diss. 5. p. 282. t. 139. f. 1.) stem shrubby, rather tomentose from flocky down; leaves canescent, all bluntly 5-lobed; pedicels twin, equal in length to the petioles; involucel 3-parted, tomentose. ♄. F. Native of Spain and the north of Africa. According to Willdenow this is a variety of *L. híspida*. Flowers pale-purple.

African Lavatera. Fl. June, July. Clt. 1820. Sh. 4 to 6 ft.

8 L. O'lbia (Lin. spec. 972.) stem shrubby, rather scabrous from distant fascicles of hairs; leaves soft, woolly, 5-lobed, upper ones 3-lobed, with the middle lobe elongated; uppermost leaves oblong, almost undivided; flowers solitary, sessile. ♄. F. Native of Provence in hedges about d'Hieres.—Lob. icon. t. 653. f. 2. Flowers reddish-purple on short pedicels.

Olbia Lavatera. Fl. June, Oct. Clt. 1570. Shrub 6 feet.

9 L. unguicula'ta (Desf. arbr. 1. p. 471.) stem shrubby, tomentose from starry down; leaves tomentose on both surfaces, acutely 5-lobed, upper ones 3-lobed; flowers solitary, on short pedicels. ♄. F. Native of the island of Samos. Very like *L. Olbia*, and is often found in gardens under that name. Flowers lilac.

Clawed-petalled Lavatera. Fl. Jul. Sept. Clt. 1807. Sh. 6 ft.

10 L. moscha'ta (Mor. elench. sard. p. 9.) plant clothed with stellate tomentum; stem shrubby; leaves waved, curled, with 5 obsolete, rounded lobes; upper leaves 3-lobed; stipulas leafy; peduncles axillary, aggregate, 1-flowered, shorter than the petioles; involucel 3-parted. ♄. F. Native of Sardinia. Corolla purplish. Receptacle conical, exserted. The whole plant smells strongly of musk.

Musky-scented Lavatera. Fl. May. Shrub 4 to 6 feet.

11 L. mìcans (Lin. spec. 972.) stem shrubby; leaves 7-angled, acute, crenated, plaited, tomentose; racemes terminal. ♄. F. Native of Spain and Portugal.—Moris, oxon. sect. 5. t. 17. f. 9. L. bryonifòlia, Mill. dict. no. 11. Leaves on the upper surface at the margins furnished with sulphur-coloured micæ, which glitter in the sun. Flowers purplish.

Glittering-leaved Lavatera. Fl. June, July. Clt. 1796. Shrub 4 feet.

12 L. Lusita'nica (Lin. spec. 973.) stem shrubby; leaves 7-angled, tomentose, plaited; racemes terminal. ♄. F. Native of Portugal. L. undulàta, Mill. dict. no. 10. Flowers purple.

Portuguese Lavatera. Fl. Aug. Sept. Clt. 1748. Sh. 4 ft.

13 L. fla'va (Desf. atl. 2. p. 119. t. 172.) stem herbaceous, downy; leaves rather tomentose, roundish, obsoletely 3-lobed; pedicels axillary, aggregate. ☉. H. Native of the north of Africa near Mascar in cultivated fields, and of Sicily. L. Agregentìna, Tineo. pl. sic. 1. p. 13. L. Empédoclis, Rœuch. Flowers yellow, about the size of those of *L. O'lbia*.

Yellow-flowered Lavatera. Fl. June, July. Clt. 1818. Pl. 3 or 4 feet.

14 L. plebe'ia (Sims. bot. mag. t. 2269.) stem herbaceous, scabrous; leaves 5-lobed, pubescent beneath; peduncles axillary, aggregate (or solitary?); petals wedge-shaped, emarginate, acute. ♃. G. Native of New Holland. Flower lilac.

Vulgar Lavatera. Fl. Sept. Clt. 1820. Pl. 2 feet.

15 L. Thuringi'aca (Lin. spec. 973.) stem herbaceous, downy; leaves rather downy, lower ones angular, upper ones 3-5-lobed, with the middle lobe longest; pedicels solitary, 1-flowered, longer than the petioles; petals 2-lobed. ♃. H. Native of Thuringia, Tartary, Sweden, Germany, &c. in hedges; also on hills about Odessa. Jacq. fl. austr. t. 311. Curt. bot. mag. 517.—Cam. hort. 1. t. 6.—Dill. elth. 9. t. 8. f. 8. Flowers large, purplish, or violet.

Thuringian Lavatera. Fl. July, Sept. Clt. 1731. Pl. 5 ft.

16 L. bie'nnis (Bieb. fl. taur. 2. p. 143.) stem herbaceous, and is as well as the leaves downy, lower leaves roundish, lobed, floral ones 3-lobed, with the middle lobe lanceolate; pedicels solitary, 1-flowered, longer than the petioles; petals somewhat emarginate. ♂. H. Native of Eastern Caucasus in fields. Flowers purplish. Like *L. Thuringìaca*.

Biennial Lavatera. Fl. Jul. Aug. Clt. 1819. Pl. 3 to 4 ft.

17 L. puncta'ta (All. auct. p. 26.) stem herbaceous, somewhat scabrous from starry down; leaves rather downy, lower ones cordate, orbicular, upper ones 3-lobed; pedicels solitary, 1-flowered, longer than the leaves. ⊙. H. Native of Provence, Nice, and Italy, in cultivated fields. O'lbia defléxa, Mœnch. suppl. p. 200. Flowers pale violet.

Spotted-stemmed Lavatera. Fl. Jul. Sept. Clt. 1800. Pl. 2 ft.

18 L. lanceola'ta (Willd. enum. 733.) stem herbaceous, with scabrous dots; leaves oblong-lanceolate, serrated, clothed with starry pubescence; upper leaves very entire; peduncles solitary, longer than the leaves. ⊙. H. Native of? Perhaps a variety of *L. punctàta*. Flower pale purple.

Lanceolate-leaved Lavatera. Fl. July, Sept. Clt. 1817. Pl. 3 feet.

Sect. III. Axo'lopha (from *αξων, axon*, an axle-tree, also a pole, and *λοφος, lophos*, a crest; alluding to the receptacle or axis of fruit being expanded into a crest at the apex.) D. C. prod. 1. p. 439. Receptacle or axis of fruit truncate at the apex, and expanded into a crest.

19 L. mari'tima (Gouan. ill. p. 46. t. 11. f. 2.) stem shrubby, downy; leaves downy, roundish, bluntly angular, 5-lobed, crenated; pedicels axillary, solitary. ♄. F. Native of the south of France and Spain, on rocks by the sea-side. Cav. diss. 2. t. 32. f. 3. L. Hispánica, Mill. dict. no. 9. L. rotundifòlia, Lam. Flowers white, with purple claws.

Sea-side Lavatera. Fl. Apr. June. Clt. 1596. Sh. 2 to 3 ft.

20 L. tri'loba (Lin. spec. 972.) stem shrubby, downy; leaves downy, rather cordate, and somewhat 3-lobed, round, crenated; pedicels aggregate; sepals acuminated. ♄. F. Native of Spain. Cav. diss. 2. t. 31. f. 1. Sims, bot. mag. 2226. L. calycìna, Poir. suppl. 3. p. 310. Flowers large. pale purple.

Three-lobed-leaved Lavatera. Fl. June, July. Clt. 1759. Shrub 4 feet.

21 L. subova'ta (D. C. prod. 1. p. 439.) stem suffruticose; leaves rather downy, ovate, notched, somewhat 3-lobed, with the middle lobe longest; pedicels 1 or 2, axillary, length of petioles; lobes of calyx acuminated. ♄. F. Native of fields about Mogador. Flowers pale purple.

Subovate-leaved Lavatera. Fl. July. Sh. 2 to 4 feet.

Sect. IV. Anthe'ma (from *ανθεμον*, a flower; on account of the axillary bundles of flowers). Med. malv. p. 42. D. C. prod. 1. p. 439. Receptacle or axis of fruit small, foveolate, not protruding, nor expanded into a crest.

22 L. arbòrea (Lin. spec. 972.) stem arboreous; leaves 7-angled, plaited, downy; pedicels aggregate, axillary, 1-flowered, aggregate, much shorter than the petiole. ♂. H. Native of Italy, Spain, Portugal, north of Africa and Canary Islands, on rocks by the sea-side. In Britain at Hurst Castle, over against the Isle of Wight; on Portland Island; on Caldy Island, in Carmarthen Bay; and on the Basse Rock, Inch-Garvy, and Mykrie-inch in the Frith of Forth, Scotland. In Cornwall and Devonshire. Smith, engl. bot. t. 1841. Cav. diss. 2. t. 139. f. 2. Flowers pale purple.

Tree Mallow. Fl. July, Oct. Britain. Pl. 6 to 10 feet.

23 L. Neapolita'na (Ten. cat. 1819. n. 125.) stem herbaceous, scabrous, erect; leaves roundish, with 7 nerves, and 7 very blunt crenated lobes; pedicels axillary, aggregate; involucel shorter than the calyx; lobes of calyx acuminated. ♃. H. Native of Naples by the sea-side. Flowers blue, with obcordate petals.

Neapolitan Lavatera. Fl. Jul. Sept. Clt. 1818. Pl. 4 to 6 ft.

24 L. Cre'tica (Lin. spec. 973.) stem herbaceous, scabrous; leaves with 5-7 acute lobes; pedicels axillary, 1-flowered, aggregate, much shorter than the petioles. ⊙. H. Native of Crete. Cav. diss. 2. t. 32. f. 1. Jacq. hort. vind. t. 41. Flowers pale red, with emarginate petals.

Cretan Lavatera. Fl. July, Sept. Clt. 1723. Pl. 5 feet.

25 L. sylve'stris (Brot. fl. lus. 2. p. 277.) stem herbaceous, scabrous from starry hairs; leaves roundish, with 5-7 blunt angles, upper ones somewhat 5-lobed, acute; pedicels aggregate, 1-flowered, shorter than the petioles; involucel 3-parted. ⊙. H. Native of Portugal by road-sides about Coimbra and elsewhere. Flowers pale-purple, with deeper coloured veins.

Wild Lavatera. Fl. June, Jul. Clt. 1817. Pl. 2 to 4 feet.

26 L. ambi'gua (D. C. prod. 1. p. 440.) stem herbaceous, hispid; lower leaves with 5 angular lobes, upper ones with 3 lanceolate, acute, toothed lobes; middle lobe longish; pedicels solitary, shorter than the leaves; carpels naked. ⊙? H. Native of fields about Naples. L. sylvéstris, Ten. prod. p. 40. but not of Brot. Flowers purple.

Ambiguous Lavatera. Fl. Jul. Sep. Clt. 1824. Pl. 2 to 3 ft.

† *Species not sufficiently known.*

27 L.? tripartì'ta (D. C. prod. 1. p. 440.) stem suffruticose; branches and leaves hoary from starry down; leaves 3-parted, with cuneated lobes, which are grossly notched at the apex; pedicels solitary, 1-flowered; involucel adhering to the tube of the calyx. ♄. F. Native of? Flowers purplish? Differing from all the other *Malvaceous* plants in the adhesion of the involucel to the calyx.

Three-parted-leaved Lavatera. Shrub 4 feet.

28 L. austra'lis (Weinm. ex steud. nom.). ⊙. H. Native of Europe.

Southern Lavatera. Fl. July, Sep. Clt. 1820. Pl. 2 feet.

Cult. The greenhouse and frame species will thrive well in a mixture of loam and peat, or any light soil, and cuttings from ripe wood planted in the same kind of soil under a hand-glass will root readily, or they may be raised from seeds, which generally ripen in abundance; they may be planted out against a south wall during summer, where many of them will survive the winter, if not severe, by being sheltered by a mat in frosty weather. The perennial herbaceous species will grow in any kind of soil, and may either be increased by dividing the plants at the root or by seeds. The annual and biennial kinds only require to be sown in the open border in the spring. All the species are hardy, and well adapted for shrubberies. The species worth cultivating for ornament are *L. O'lbia, unguiculàta, flàva, Neapolitàna, Lusitánica, triméstris, Thuringìaca* and *Crética*.

VIII. MALA'CHRA (a name under which Pliny speaks of a Persian tree which produces a gum. The modern plant has

nothing to do with the tree of Pliny; but the name is preserved to designate plants analogous to *mallow* from the similitude of the word *malachra* with that of *malache*, which signifies a *mallow*). Lin. gen. ed. Schreb. no. 1131. Lam. ill. t. 580. D. C. prod. 1. p. 440.

Lin. syst. *Monadélphia, Polyándria.* General involucre 3 or 5-leaved, compassing the head of flowers. The proper involucel with 8 or 12 linear or bristle-shaped leaflets. Carpels 5, capsular, 1-seeded, disposed into a round head. Stigmas 10.

1 M. u'rens (Poit. in Schrad. journ. 2. p. 293.) leaves ovate, 5-nerved; heads of flowers almost sessile; leaflets of involucre notched at the base. ⊙. S. Native of St. Domingo.

Stinging Malachra. Pl. 2 to 3 feet.

2 M. rotundifòlia (Schrank. hort. monac. t. 56.) leaves orbicular, crenated; heads of flowers stalked, 3-leaved and 5-flowered; leaflets of involucrum kidney-shaped. ⊙. S. Native of Brazil. Flowers yellow?

Round-leaved Malachra. Fl. Aug. Sept. Clt. 1821. Pl. 1 ft.

3 M. plumòsa (Desrous. in dict. encycl. 2. p. 686.) leaves elliptical, toothed; heads of flowers stalked, with many leaves and many flowers; interior leaflets of involucrum feather-fringed. ⊙? S. Native of Brazil. Sìda plumòsa, Cav. diss. 1. t. 12. f. 4. Flowers yellowish.

Feathered-involucred Malachra. Pl. 1 foot.

4 M. cilia'ta (Poir. suppl. 3. p. 578.) leaves broad-ovate, unequally crenated, smooth; heads of flowers almost sessile; involucel and bracteas ciliated; stem pubescent. ⊙? S. Native of Porto-Rico. Flowers white.

Ciliated-bracted Malachra. Pl. 1-3 feet.

5 M. corda'ta (Poir. suppl. 3. p. 578.) leaves cordate, twice serrated, smoothish; heads of flowers rather loose, hardly involucrated; bracteas elongated, filiform, very hairy. ⊙. S. Native of Porto-Rico. Flowers pale-yellow.

Cordate-leaved Malachra. Pl. 1 to 3 feet.

6 M. capita'ta (Lin. syst. 518.) leaves roundish-cordate, bluntly angular and toothletted; heads stalked, 3-leaved, 7-flowered; stem scabrous. ⊙. S. Native of the Caribbee islands in marshes, and tropical Africa. Sìda capitàta, Lin. act. ups. 1743. p. 137. t. 2. Flowers yellow.

Headed-flowered Malachra. Fl. Aug. Sep. Clt. 1759. Pl. 2 feet.

7 M. fascia'ta (Jacq. icon. rar. 3. t. 548.) pilose; leaves roundish, obsoletely lobed; heads of flowers on short stalks, 3-leaved, and usually 5-flowered; stem very villous. ⊙. S. Native of Caraccas. Flowers rose-coloured.

Fasciated Malachra. Fl. Aug. Sept. Clt. 1819. Pl. 3-6 feet.

8 M. Berte'rii (Spreng. syst. 3. p. 94.) shrubby; stem rough, tomentose; leaves oblong, doubly toothed, beset with starry down above, but tomentose beneath and reticulated with veins; racemes axillary; leaflets of involucel coloured, nerved. ♄. S. Native of South America on the banks of the river Magdalena.

Bertero's Malachra. Shrub 3 to 4 feet.

9 M. tri'loba (Desf. hort. par. D. C. prod. 1. p. 440.) leaves roundish, bluntly 3-lobed, crenulated; heads of flowers on long stalks, many-flowered, 3-leaved; stem scabrous. ⊙. S. Native of? Flowers small, white. Poir. suppl. 3. p. 578.

Three-lobed-leaved Malachra. Fl. July, Aug. Clt. 1817. Pl. 3 feet.

10 M. radia'ta (Lin. syst. p. 518.) leaves palmately-lobed; heads of flowers stalked, 5-6-leaved, many-flowered; leaves of involucre acuminated; calyx and stems very hairy; flowers bractless. ♂. S. Native of St. Domingo and Cayenne. Cav. diss. 2. t. 33. f. 3. Sìda radiàta, Lin. spec. 965. Flowers purple.

Rayed Malachra. Fl. July, Sept. Clt. 1794. Pl. 6 feet.

11 M. bractea'ta (Cav. diss. 2. p. 34. f. 2.) leaves palmate-lobed; heads of flowers on long stalks, 5-leaved, many-flowered; leaflets of involucre ovate, acute; flowers bracteate; stem very hairy. ⊙. S. Native of South America. Flowers white with a red centre. Perhaps a species of *Pavònia*.

Bracteated Malachra. Fl. Aug. Clt. 1823. Pl. 3 foot.

12 M. alceæfòlia (Jacq. icon. rar. 3. t. 549.) leaves cordate, 5-lobed; heads of flowers stalked, 5-leaved, usually 10-flowered; stem beset with scattered bristles. ⊙. S. Native of Caraccas. Flowers yellow. Leaves of involucre 3-lobed, hastate.

Alcæa-leaved Malachra. Fl. Aug. Sept. Clt. 1805. Pl. 5 ft.

13 M. Gaudichaudia'na (St. Hil. fl. bras. 1. p. 218.) leaves entire at the base, not cordate, palmately 5-lobed, middle lobe longest; heads of flowers terminal, on short peduncles, 6-leaved, 12-15-flowered; stem hispid; segments of the calyx oblong-triangular. ⊙. S. Native of Brazil about Rio Janeiro. Flowers reddish.

Gaudichaud's Malachra. Fl. Dec. Pl. 1 foot.

14 M. heptaphy'lla (Fisch. in Horn. suppl. 78.) leaves cordate, palmately 5-lobed, curled, with the middle lobe elongated; heads of flowers somewhat stalked, usually 5-leaved, many-flowered. ⊙. S. Native of Brazil. M. fasciàta, Ker. bot. reg. t. 467. Flowers yellow. Very like *M. Alceæfòlia*.

Seven-leaved Malachra. Fl. Aug. Sept. Clt. 1818. Pl. 2 ft.

15 M. palma'ta (Mœnch. meth. 615.) leaves palmate, 3-5-lobed, middle lobe longest, broadest at the apex; stem erect, scabrous, with two villous decurrent lines running the whole length. ⊙. S. Native of? Flowers yellow. Perhaps *M. alceæfòlia* or a variety of *M. heptaphýlla?*

Palmate-leaved Malachra. Fl. Aug. Sept. Pl. 3 foot.

16 M. Ure'na (D. C. prod. 1. p. 441.) leaves angular, unequally crenated, hairy on both surfaces; stem suffruticose; carpels muricated. ♄. G. Native of China about Canton. Urèna polyflòra, Lour. coch. p. 417. Flowers copper-coloured. Involucre containing many-flowers, as in the rest of the species.

Urena-like Malachra. Shrub 3 feet.

Cult. Malàchra is a genus of plants destitute of beauty, therefore not worth cultivating, except in botanic gardens. They only require to be sown in the spring in pots filled with loam and sand, and placed in a hot-bed, where they may remain until they have ripened their seed, or they may be removed to a stove when of sufficient size. They should be planted separately.

IX. URE'NA (a name latinized from *Uren*, the Malabar name of one of the species.) Lin. gen. no. 844. Lam. ill. t. 583. Gært. fruct. 2. p. 252. t. 135. f. 2. D. C. prod. 1. p. 441.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 5-cleft involucel, which is joined to the middle. Anthers on the top of the tube. Stigmas 10. Carpels 5, capsular, 1-seeded, connivent, generally echinated from prickles, which are rayed at the apex. Leaves usually furnished with glands on the nerves on the under surface. Flowers red, usually in the axillæ of the leaves.

§ 2. *Leaves undivided or slightly 3-5-lobed.*

1 U. speciòsa (Wall. pl. asiat. rar. p. 23. t. 26.) leaves 3-nerved, denticulated, hoary-tomentose beneath, with a gland on each nerve beneath, lower leaves roundish, acutely somewhat 3-lobed, on long petioles, middle leaves oblong-cordate, acuminated, uppermost ones lanceolate, nearly sessile; corolla large, funnel-shaped, much longer than the calyx and 5-cleft involucel; carpels smooth, reticulated; style 10-parted. ♄. S. Native of the East Indies near Ava, on the lower part of mount Taong Dong. This is a very elegant plant, with large pink flowers, which are disposed in a kind of terminal racemose panicle. It

differs so much in habit from all the other species of this genus that we doubt its being a genuine species of *Urèna*.

Shewy Urena. Fl. Sep. Dec. Shrub 2 to 4 feet.

2 U. LOBA'TA (Lin. spec. 974.) leaves roundish, obtusely sub-3-lobed, soft and velvety on both surfaces, 7-nerved, 3-glanded; calyxes oblong-lanceolate. ⊙. G. Native of China.—Dill. elth. t. 319. f. 412.

Lobed-leaved Urena. Fl. June, July. Clt. 1731. Pl. 1 to 3 ft.

3 U. SCABRIU'SCULA (D. C. prod. 1. p. 441.) leaves roundish, acutely 3 or 5-lobed, scabrous above, but tomentose beneath, 7-nerved, 1 to 3-glanded; calyxes linear. ⊙. S. Native of the East Indies, Nipaul, and Brazil. U. lobàta, Cav. diss. 6. t. 185. f. 1.—Breyn. cent. t. 35.?

Roughish-leaved Urena. Fl. Jul. Aug. Clt. 1817. Pl. 1 to 4ft.

4 U. REPA'NDA (Smith in Rees' cycl. 37. no. 6?) leaves roundish, serrated, repandly-toothed, or somewhat lobed, puberulous, pale, and netted beneath, with 1-gland; upper leaves undivided; involucels awl-shaped, longer than the calyx; carpels smooth. ⊙? S. Native of the East Indies. Pavònia repánda, Spreng. syst. 3. p. 98.

Repand-leaved Urena. Fl. July, Aug. Clt. 1820. Pl. 2 feet.

5 U. LAPPA'GO (Smith in Rees' cycl. 37. no. 11.?) leaves bluntly and repandly sinuated, somewhat cordate, hoary-pubescent beneath, with 1 gland; involucel of 5-lanceolate lobes, which are equal in length with the calyx. ♄. S. Native of Amboyna.—Rumph. amb. 6. t. 25.

Burdock Urena. Fl. July, Aug. Clt.? Shrub 3 feet.

6 U. TOMENTÒSA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 148.) leaves broad-ovate, angular, serrated, tomentose and canescent beneath, with 1 gland, upper ones undivided, ovate or lanceolate; lobes of the involucel lanceolate, about equal in length to the calyx. ♄. S. Native of Java.

Tomentose Urena. Shrub 2 feet.

7 U. MULTI'FIDA (Cav. diss. 6. p. 336. t. 184. f. 2.) villous; leaves cordate-ovate, deeply-5-lobed, with narrow recesses, and acute grossly notched lobes, pubescent above, pale and villous beneath, with 1 gland, and 7 or 8 nerves. ♄. S. Native of Bourbon and the Mauritius. Flowers yellow, racemose.

Multifid-leaved Urena. Fl. Jan. Oct. Clt. 1817. Sh. 2 ft.

8 U. SIEBE'RI (Coll. hort. rip. p. 142. t. 39.) leaves orbicular, sinuately 7-lobed, and deeply-toothed, hairy beneath, and 1-glanded; involucel 10-cleft. ♄. S. Native of the isle of France. U. Mauritiàna, Sieb. Peduncles axillary, solitary, very short. Flowers violaceous.

Sieber's Urena. Fl. June, July. Clt.? Shrub 2 feet.

9 U. PROCU'MBENS (Lin. spec. 975.) leaves hastate, cordate, serrated; stem shrubby, procumbent. ♄. G. Native of China on mountains.

Procumbent Urena. Shrub trailing.

10 U. TRICU'SPIS (Cav. diss. 6. p. 334. t. 183. f. 1.) leaves ovate, angular, 1-glanded, tomentosely villous, 3-lobed, with acuminated lobes; lobes of involucel striated; stem hairy. ♆. S. Native of the isles of France and Bourbon. Flowers yellow.

Three-pointed-leaved Urena. Fl. July, Aug. Clt. 1820. Pl. 2 feet.

11 U. RETICULA'TA (Cav. diss. 6. p. 335. t. 183. f. 2.) lower leaves 3-lobed, upper ones lanceolate, somewhat fiddle-shaped, hoary and reticulated beneath, with 1 gland; involucel exceeding the calyx. ♄. S. Native of Cayenne and St. Domingo. U. Americàna, Lin. fil. suppl. 308. but not of Smith.

Netted-leaved Urena. Fl. Ju. Aug. Clt. 1819. Shrub 2 feet.

12 U. SUBTRI'LOBA (Schrank. hort. mon. t. 79.) leaves with 1 gland beneath, soft, somewhat orbicular, 7-nerved, unequally crenated, lower ones acuminated, middle ones 3-lobed, upper ones deeply cleft; lobes of all acuminated. ⊙. S. Native of Brazil. Flowers red.

Subtrilobed-leaved Urena. Fl. July, Oct. Clt. 1823. Pl. 2 ft.

13 U. GRANDIFLÒRA (Moc. et Sesse, fl. mex. ined. D. C. prod. 1. p. 442.) leaves ovate, somewhat cordate, irregularly 3-lobed, grossly and unequally notched; petals glandular at the base. ♄. S. Native of Mexico. Flowers red, half an inch in diameter.

Great-flowered Urena. Shrub 3 feet.

14 U. VIMI'NEA (Cav. diss. 6. p. 335. t. 184. f. 1.) leaves somewhat rhomboid, toothed, netted and hoary beneath, with 1 gland, 5-7-nerved; pedicels 2-4 together, axillary; involucel exceeding the calyx. ♄. S. Native of Brazil and Porto-Rico.

Twiggy Urena. Shrub 3 feet.

15 U. MICROCA'RPA (D. C. prod. 1. p. 442.) leaves ovate, rhomboidal, somewhat 3-lobed, smoothish above, hoary beneath, glandless, 3-nerved; fruit beset with hooked prickles. ♄. S. Native of the Caribbee Islands.

Small-fruited Urena. Fl. July. Shrub 2 feet.

16 U.? MONOPE'TALA (Lour. coch. 2. p. 508.) leaves ovate-lanceolate, serrated, downy; involucel shorter than the calyx; corolla monopetalous. ♄. G. Native of Cochin-China.

Monopetalous Urena. Shrub 2 feet.

17 U. RIBE'SIA (Smith in Rees' cycl. 37. no. 5.) leaves acutely 3-lobed, rounded and cordate at the base, villous beneath, with 1 gland; lobes of involucel spatulate, blunt. ♄? S. Native of Surinam and the island of Barbadoes.—Sloane, jam. 1. t. 11. f. 2.

Current-like Urena. Shrub 2 feet.

§ 2. *Leaves profoundly 3 or 5-lobed, with wide recesses and scolloped lobed lobes.*

18 U. SWA'RTZII (D. C. prod. 1. p. 442.) leaves 3-lobed, puberulous, pale beneath, with 1 gland; fruit beset with prickly bristles. ♄. S. Native of the Caribbee islands and Surinam. U. sinuàta, Swartz, obs. 264. U. Americàna, Smith in Rees' cycl. 37. no. 4. but not of Lin. Flowers red or white. Very like the following species.

Swartz's Urena. Fl. July. Clt. 1816. Shrub 2 feet.

19 U. SINUA'TA (Lin. spec. 974.) leaves 5-lobed, puberulous, pale beneath, with 3 glands; lobes 3-lobed, toothletted, obtuse. ♄. S. Native of the East Indies. Cav. diss. 6. t. 185. f. 2.—Rheed. mal. 10. t. 52. U. aculeàta, Mill. dict. no. 2.

Scolloped-leaved Urena. Fl. July, Aug. Clt. 1759. Shrub 2 feet.

20 U. PARADÓXA (H. B. et Kunth, nov. gen. amer. 5. p. 278.) leaves profoundly trifid, with 3 glands at the base, puberulous above, hoary-tomentose beneath, with sharply-serrulated segments, middle segment rhomboidal, profoundly scolloped, 3-lobed, lateral ones smaller, 2 or 3-lobed, with the others usually obliterated. ♄. S. Native on the banks of the river Orinoco near Ature. Flowers axillary, solitary, rose-coloured. Capsules echinated. Resembling *U. sinuàta*.

Paradoxical Urena. Shrub 4 feet.

21 U. MORIFÒLIA (D. C. prod. 1. p. 442.) leaves 5-lobed, somewhat puberulous above, pale-velvety beneath, with 1 gland; recesses serrated, very wide; fruit downy and bristly. ♄. S. Native of the Friendly islands. Young leaves densely tomentose.

Mulberry-leaved Urena. Shrub 3 feet.

22 U. MURICA'TA (D. C. prod. 1. p. 442.) leaves 5-lobed, hairy, pale beneath, with 1 gland, with narrow toothletted recesses; fruit muricated from small tubercles. ♄? S. Native of Bengal.

Muricated-fruited Urena. Fl. July, Aug. Clt. 1816. Shrub 2 feet.

23 U. HETEROPHY'LLA (Smith in Rees' cycl. 37. no. 8.) leaves profoundly 5-lobed, hoary underneath, 1-glanded, with

broad recesses, middle lobe 3-lobed; lobes obtuse, serrated; upper leaves elongated, and contracted at the base; involucel hardly equal in length to the calyx; stem rather pilose. ♄. S. Native of the East Indies.—Burm. zeyl. 150. t. 59. f. 2.—Pluk. alm. t. 74. f. 1.

Various-leaved Urena. Fl. June, July. Clt. 1818. Shrub 2 ft.

Cult. None of the species of *Urèna* are worth cultivating unless in botanic gardens, except *U. speciòsa*. They are plants of easy culture, will thrive best in a mixture of loam and peat, and cuttings will root readily if planted in the same kind of soil, under a hand-glass, but this in most cases will be unnecessary, as most of the species ripen seed in plenty.

X. PAVO'NIA (in honour of Don Joseph Pavon, M.D. of Madrid, a traveller in Peru, and one of the authors of Flora Peruviana, 5 vols. fol.) Cav. diss. 3. p. 132. Lam. ill. 585. D. C. prod. 1. p. 442.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 5 to 15-leaved involucel. Stigmas 10. Carpels 5, capsular, 2-valved, 1-seeded.

SECT. I. TYPHA'LEA (from τυφως, *typhos*, having an hundred heads; heads of flowers.) D. C. prod. 1. p. 442. Carpels echinated with stiff spines, each carpel usually furnished with 3 awns, these are covered with retrograde bristles or hairs.

1 P. SPI'NIFEX (Willd. spec. 3. p. 854.) leaves ovate, acuminated, somewhat cordate, unequally toothed; pedicels axillary, solitary, 1-flowered. ♄. S. Native of South America. Hibíscus spínifex, Lin. spec. 978. Jacq. hort. vind. t. 103. Flowers large, yellow. Involucel 6-7-leaved, equal in length with the calyx.

Var. a, ovalifòlia (D. C. prod. 1. p. 443.) leaves ovate; corolla twice or thrice the length of the calyx. P. spínifex, Cav. diss. 3. p. 133. t. 45. f. 2.

Var. β, aristàta (Cav. diss. 3. p. 133. t. 45. f. 3.) leaves somewhat cordate; corolla hardly longer than the calyx.

Var. γ, oblongifòlia (Moc. et Sesse, fl. mex. icon. ined.) leaves oblong; corolla length of calyx.

Var. δ, grandiflòra (Moc. et Sesse, fl. mex. icon. ined.) leaves cordate; corolla twice or thrice the length of the calyx.

Prickly-fruited Pavonia. Fl. July, Aug. Clt. 1778. Shrub 2 to 4 feet.

2 P. INTERME'DIA (St. Hil. fl. bras. 1. p. 223.) leaves ovate-lanceolate, denticulately-serrated, hairy; flowers sub-glomerate, terminal; involucel 8-10-leaved; leaflets connate at the base, rather longer than the calyx. ♄. S. Native of Brazil in the province of Mìnas Geraes. Flowers whitish.

Intermediate Pavonia. Fl. Jan. Shrub 4 to 5 feet.

3 U. STELLA'TA (Spreng. syst. 3. p. 97.) leaves oblong-lanceolate, elongated, unequally denticulated, rough from stellate down, canescent beneath; peduncles terminal, capitate; fruit 1-awned, awn covered with retrograde hairs. ♄. S. Native of Brazil. Urèna stellàta, Spreng. neu entd. 2. p. 163.

Starry-haired Pavonia. Shrub 2 feet.

4 P. TYPHA'LEA (Cav. diss. 2. p. 134 and 150. t. 197,) leaves oblong-lanceolate, toothed; peduncles axillary and somewhat terminal, many-flowered; flowers disposed in capitate bundles. ♄. S. Native of Jamaica and Guiana, in shady moist places, as well as of Brazil. Urèna Typhàlea, Lin. mant. 258. Swartz, obs. 294. Flowers small, white or pale-red. Involucel 8-leaved.

Typhalea Pavonia. Fl. June, Aug. Clt. 1824. Sh. 1 to 2 ft.

5 P. TYPHALÆOI'DES (H. B. et Kunth, nov. gen. amer. 5. p. 279.) leaves lanceolate-oblong, acute, obtuse and crenated at the base; flowers terminal, crowded into small heads; involucel 5-leaved; carpels with 3 long awns. ♄. S. Native of New Granada between St. Anna and Mariquita, also of Trinidad. Very like *P. Typhàlea*, but the leaves are much smaller. Flowers reddish.

Typhalea-like Pavonia. Fl. June, Aug. Clt. 1824. Shrub 1 to 2 feet.

6 P. U'RENS (Cav. diss. 3. t. 49. f. 1 and 5. p. 283.) leaves 7-angled, acuminated, toothed, hairy; flowers axillary, almost sessile, glomerated. ♄. S. Native of the islands of the Mauritius and Bourbon, in cold grassy places. Jacq. icon. rar. 3. t. 552. Flowers flesh-coloured. The whole plant is villous, and smells like *cucumber*. Involucel 7-9-leaved, equal with the calyx.

Stinging Pavonia. Fl. Jan. Dec. Clt. 1801. Shrub 10 ft.

7 P. COMMU'NIS (St. Hil. fl. bras. 1. p. 224.) leaves cordate, acuminated, unequally toothed, tomentose beneath, full of pellucid dots, on short petioles; flowers solitary, racemosely disposed at the tops of the branches; involucel 6-leaved, longer than the calyx. ♄. S. Native of Brazil in the provinces of Minas Geraes and St. Paul. Flowers golden-yellow.

Common Pavonia. Shrub 3 to 4 feet.

8 P. SE'PIUM (St. Hil. fl. bras. 1. p. 225.) leaves ovate-oblong, acuminated, unequally toothed, pilose beneath, full of pellucid dots; flowers solitary, axillary; involucel 5-leaved, about equal in length with the calyx. ♄. S. Native of Brazil near Rio Janeiro. Flowers golden-yellow.

Hedge Pavonia. Fl. May. Shrub 2 to 6 feet.

9 P.? LEPTOCA'RPA (Cav. diss. 6. p. 351.) leaves lanceolate, serrated; flowers sessile, glomerated; involucel 5-leaved; styles 5. ♄. S. Native of Surinam. Urèna leptocárpa, Lin. fil. suppl. 508. Perhaps a species of *Hibíscus*, from having 5 styles. Flowers the size of those of *Ranúnculus àcris*, yellow.

Slender-fruited Pavonia. Fl. Ju. Aug. Clt. 1818. Sh. 10 ft.

SECT. II. MA'LACHE (from μαλαχη, *malache*, the Greek name of *Mallow*; in allusion to the resemblance of plants.) Trew. ehr. 50. D. C. prod. 1. p. 443. Carpels unarmed, but sometimes tuberculated. Involucel generally shorter than the calyx of 5 to 15 leaves.

10 P. HASTA'TA (Cav. diss. 3. p. 138. t. 47. f. 2.) leaves lanceolate, halbert-shaped, toothed; pedicels axillary, 1-flowered; involucel 5-leaved. ♄. S. Native of Brazil on the banks of the river Uruguay. Flowers red, with deeper veins.

Halbert-shaped-leaved Pavonia. Fl. Jan. Shrub 1 to 4 feet.

11 P. MURICA'TA (St. Hil. fl. bras. 1. p. 225. t. 44.) leaves ovate, sub-cordate or lanceolate, pubescent above, but tomentose beneath; flowers terminal, aggregate; involucel 5-leaved, about equal in length to the calyx; carpels muricated on the back and top. ♄. S. Native of Brazil in the provinces of Minas Geraes and St. Paul, in woods. Flowers red, rarely flesh-coloured. There are two varieties of this plant; one with large red flowers, and the other with smaller flesh-coloured flowers.

Muricated-carpelled Pavonia. Shrub 2 to 6 feet.

12 P. LAXIFLÒRA (St. Hil. fl. bras. 1. p. 226.) leaves cordate, acuminated, unequally toothed, villous on both surfaces, full of pellucid dots; flowers solitary, axillary, or terminal, sub-corymbose; involucel 6-leaved, a little longer than the calyx; carpels unarmed, tuberculately puberulous. ♄. S. Native of Brazil in the province of Minas Geraes, in woods. Flowers yellow.

Lax-flowered Pavonia. Fl. March. Shrub 1 to 2 feet.

13 P. COCCI'NEA (Cav. diss. 3. p. 140. t. 47. f. 1.) leaves cordate, 3-lobed, serrated; pedicels 1-flowered, axillary, ascending; involucel 5-leaved; leaflets narrow. ♄. S. Native of St. Domingo.—Plum. ed. Burm. t. 169. f. 2. Flowers scarlet, 2 inches in diameter.

Scarlet-flowered Pavonia. Clt. 1816. Sh. 4 feet.

14 P. COLUME'LLA (Cav. diss. 3. p. 138. t. 48. f. 3.) leaves 5-angled, with toothed, acuminated lobes; pedicels axillary, 1-

flowered, much shorter than the petioles; involucel 5-leaved. ♄. S. Native of Bourbon. Columélla Malvínda, Comm. mss. Flowers purplish.

Columella's Pavonia. Fl. July. Clt. 1807. Shrub 3-6 ft.

15 P. PARVIFLÒRA (Desf. hort. par. Poir. suppl. 4. p. 335.) leaves rather hairy, 5-angled, with ovate or lanceolate lobes; pedicels axillary, 1-flowered, length of petioles, and are as well as petioles very hairy; involucel 5-leaved ♄. S. Native of? Flowers yellowish-white.

Small-flowered Pavonia. Fl. July, Aug. Clt. 1818. Sh. 2 ft.

16 P. GLECHOMOI'DES (St. Hil. fl. bras. 1. p. 227. t. 45.) leaves orbicular, cordate, crenate, pilose on both surfaces, full of pellucid dots; flowers solitary, axillary; involucel 5-6-leaved, about equal in length to the calyx; carpels unarmed, obovate, girded by elevated margins. ♄. S. Native of Brazil in the province of Cis-platine, Monte Video, &c. Flowers white and flesh-coloured.

Ground-ivy-like Pavonia. Fl. Nov. Shrub 1 to 2 feet.

17 P. AFFI'NIS (St. Hil. fl. bras. 1. p. 229.) leaves hastate, lanceolate, obsoletely toothed, tomentose beneath, full of pellucid dots; flowers axillary, solitary; involucel 5-leaved; leaflets broad, shorter than the calyx; carpels unarmed, obovate, girded by prominent margins. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers pale red.

Allied Pavonia. Fl. May. Shrub 5-6 feet.

18 P. SAGITTA'TA (St. Hil. fl. bras. 1. p. 229.) leaves sagittate-lanceolate, toothed, tomentose beneath, full of pellucid dots; peduncles axillary, solitary, 1-2-flowered; involucel 5-7-leaved, a little shorter than the calyx; carpels unarmed, obovate, girded by a prominent margin. ♄. S. Native of Brazil in the province of Minas Geraes, in fields. Flowers rose-coloured.

Var. β, sessiliflòra (St. Hil. l. c.) flowers sessile.

Arrow-leaved Pavonia. Fl. Feb. Shrub 3 to 4 feet.

19 P. SIDÆFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 283.) leaves ovate, acutish, cordate, crenately-serrated, hairy above, hoary-tomentose beneath; flowers stalked, axillary, and terminal; involucel of 5 or 7 lanceolate leaves. ♃. S. Native of South America between Angustura and Trapiche de Ferreras. Branches hairy. Flowers yellow, dark purple at the base.

Sida-leaved Pavonia. Pl. 2 feet.

20 P. RACEMÒSA (Swartz, fl. ind. occ. 2. p. 1215.) leaves ovate, cordate, acuminate, serrated; raceme terminal, naked; pedicels longish; involucel 8-10-leaved. ♄. S. Native of Jamaica and Guadaloupe, in marshes. Roots rising above the earth and often arched as in *Rhizophòra* or *Mangrove*. P. spicàta, Cav. diss. 3. t. 46. f. 1.—Sloan. jam. 1. p. 121. t. 139. f. 2. Flowers brownish-yellow. Leaves scabrous above.

Racemose-flowered Pavonia. Fl. June, July. Clt. 1817. Shrub 5-10 feet.

21 P. GRANDIFLÒRA (St. Hil. fl. bras. 1. p. 232.) leaves cordate, acuminated, unequally toothed, velvety-tomentose on both surfaces; flowers axillary, solitary; involucel 12-leaved, about equal in length to the calyx; carpels smooth. ♄. S. Native of Brazil in the province of Goyaz. Flowers flesh-coloured.

Great-flowered Pavonia. Shrub 1 to 2 feet.

22 P. VELUTÌNA (St. Hil. fl. bras. 1. p. 233.) leaves cordate, acuminated, crenulated, or 3-lobed, denticulately-serrated, velvety-tomentose on both surfaces; flowers solitary, axillary, or terminal, panicled; involucel many-leaved, much shorter than the calyx; carpels unarmed, ovate, clammy. ♄. S. Native of Brazil in the province of Minas Geraes. Lopímia malacophýlla, Mart. in act. bot. vol. xi. p. 97? Flowers red.

Velvety Pavonia. Fl. May, Oct. Shrub 3 to 7 feet.

23 P. SPECIO'SA (H. B. et Kunth, nov. gen. amer. 5. p. 281. t. 477.) leaves ovate-elliptical, acute, cordate, toothletted, densely hairy, canescent beneath; flowers axillary, and somewhat terminal, on short peduncles; involucel of 7 or 9 lanceolate spatulate leaflets. ♃. S. Native of South America near Angustura. Petals violet, with purple claws 1½ inch long.

Shewy Pavonia. Pl. 2 feet.

24 P. PAPILIONA'CEA (Cav. diss. 3. p. 140. t. 49. f. 2.) leaves roundish-cordate, acute, toothed; pedicels axillary, 1-flowered, about the length of the petioles; style ascending; involucel of 10 leaflets. ♄. S. Native of the island of Taheity. Flowers yellow. Stem tomentose.

Butterfly Pavonia. Shrub 3 feet.

25 P. PELLI'TA (H. B. et Kunth, nov. gen. amer. 5. p. 282.) leaves ovate, acute, obsoletely cordate, crenulated, soft, hairy, brownish-canescent beneath; flowers axillary and terminal, on short peduncles; leaflets of involucel 11, linear-filiform, one-half shorter than the calyx. ♄. S. Native of South America near Maypure on the river Orinoco. Petals red, violet at the base. Resembling *P. speciòsa*.

Clad Pavonia. Shrub 2 to 3 feet.

26 P. NUDICAU'LIS (St. Hil. fl. bras. 1. p. 231.) leaves distant, ovate, or ovate-lanceolate, toothed, tomentose beneath; flowers terminal, crowded; involucel 10-leaved, dilated at the top, about equal in length with the calyx. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers flesh-coloured.

Naked-stemmed Pavonia. Shrub 1 to 2 feet.

27 P. POLYMÓRPHA (St. Hil. fl. bras. 1. p. 232.) leaves roundish or ovate, somewhat cordate at the base, denticulately-serrated; flowers solitary, or crowded terminal; involucel 8-10-leaved, dilated at the top, shorter than the calyx; carpels smooth. ♄. S. Native of Brazil in the province of Minas Geraes, in dry fields. Flowers flesh-coloured.

Var. β, cucurbitàcea (St. Hil. l. c.) leaves ovate, cordate, 3 inches long, hardly toothed, full of pellucid dots; peduncles axillary, short, 1-flowered.

Polymorphous Pavonia. Shrub 2 to 3 feet.

28 P. SESSILIFLÒRA (H. B. et Kunth, nov. gen. amer. 5. p. 281.) leaves ovate, acute, somewhat cordate, serrated, hairy above, clothed with long, soft, canescent hairs beneath; flowers axillary, almost sessile or terminal, aggregate; leaflets of involucel 10, hooked backwards at the top, a little shorter than the calyx. ♄. S. Native of New Granada near St. Anna, and Brazil. Flowers copper-coloured or yellow. Carpels 5, smooth.

Sessile-flowered Pavonia. Shrub 3 to 4 feet.

29 P. HI'SPIDA (Spreng. syst. 3. p. 99.) herbaceous; leaves cordate, 3-5-lobed, hairy; lobes sinuated, bluntly toothed; leaflets of involucel 7, awl-shaped; peduncles 1-flowered, shorter than the petioles. ♄. S. Native of? Flowers white with a yellow base. Hibíscus hísipdus, Spreng. pug. 2. p. 73.

Hispid Pavonia. Shrub 2 to 3 feet.

30 P. PRÆMO'RSA (Willd. spec. 3. p. 833.) leaves broadly-obovate, truncate, and crenated at the apex; pedicels axillary, 1-flowered, longer than the leaves; involucel of 14 bristle-like leaves. ♄. G. Native of the Cape of Good Hope. Curt. bot. mag. 436. P. cuneifòlia, Cav. diss. 3. t. 45. f. 1. Hibíscus præmórsus, Lin. fil. suppl. 309. Jacq. icon. rar. 1. t. 141. Flowers pale-yellow.

Bitten-leaved Pavonia. Fl. Ju. Aug. Clt. 1774. Shrub 5 ft.

SECT. III. CANCELLA'RIA (from *cancellus*, a lattice, or grate; disposition of the leaflets of the involucrum). D. C. prod. 1. p. 444. Carpels unarmed. Involucel of 5-15 leaves, longer than the calyx.

31 P. MUTI'SII (H. B. et Kunth, nov. gen. amer. 5. p. 283.) leaves ovate, somewhat acuminate, cordate, serrated, very soft, pubescent above, canescently-tomentose beneath; flowers axillary and terminal, stalked; leaflets of involucel 8, a little longer than the calyx. ♄. S. Native of New Granada on mountains.

Hibíscus cordifòlius, Lin. fil. suppl. 309. Branches downy. Flowers yellow.

Mutis's Pavonia. Shrub 3 feet.

32 P. HI'RTA (Spreng. syst. 3. p. 99.) shrubby, clothed with stellate down, hairy; leaves cordate, 3-lobed, crenated; peduncles 1-flowered; involucel of 5 lanceolate leaves. ♄. S. Native of Monte Video.

Hairy Pavonia. Shrub 4 to 5 feet.

33 P. MO'LLIS (H. B. et Kunth, nov. gen. amer. 5. p. 283.) leaves roundish-ovate, cordate, acuminated, obsoletely 3-lobed, serrated, hairy, soft and canescent beneath; flowers axillary and terminal, stalked; leaflets of involucel 8, linear, almost twice the length of the calyx. ♄. S. Native of New Granada. Branches pilose, viscid. Flowers violet.

Soft Pavonia. Shrub 2 to 3 feet.

34 P. DIURE'TICA (St. Hil. pl. usu. bras. no. 53. fl. bras. 1. p. 234.) leaves cordate, acuminated, denticulately-serrated, velvety, tomentose on both surfaces, full of pellucid dots; flowers axillary, solitary; involucel 6-7-leaved, longer than the calyx. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers sulphur-coloured. A decoction of this plant is employed with success as a diuretic in Dysuria.

Diuretic Pavonia. Shrub 2 to 3 feet.

35 P. PANICULA'TA (Cav. diss. 3. p. 135. t. 46. f. 2.) villous; leaves cordate, roundish, acuminated, crenately toothed, sometimes tricuspidate; flowers panicled; stamens declinate; involucel of 8 or 9 leaves. ♄. S. Native of Peru at the source of the river Maragnon, and near Caraccas at the river Anauco. H. B. et Kunth, nov. gen. amer. 5. p. 280. Uréna fœ'tida, Lher. mss. Flowers yellow.

Panicled-flowered Pavonia. Fl. July, Aug. Clt. 1820. Sh. 3 or 4 feet.

36 P. CORYMBÒSA (Willd. spec. 3. p. 836.) leaves cordate or angular, serrated, smooth; flowers corymbose; peduncles and many-leaved involucels pilose. ♄. S. Native of Jamaica and Hispaniola, on the banks of rivers. Althæ'a corymbòsa, Swartz, fl. ind. occid. 2. p. 1213. Flowers pale yellow. Involucel 10-12-leaved.

Corymbose-flowered Pavonia. Fl. July, Aug. Clt. 1818. Shrub 1 to 2 feet.

37 P. ODORA'TA (Willd. spec. 3. p. 837.) leaves ovate, somewhat cordate, 3-pointed, rather toothed, and are as well as the branches pilose, viscid; pedicels axillary, 1-flowered, somewhat racemose at the tops of the branches; involucel of 12 ciliated leaves. ♄. S. Native of the East Indies. Flowers red.

Sweet-scented Pavonia. Fl. Ju. Jul. Clt. 1807. Shrub 2 to 3 ft.

38 P. RÒSA-CAMPE'STRIS (St. Hil. fl. bras. 1. p. 236. t. 46.) leaves cordate, acute, unequally serrated, coriaceous, puberulous; flowers axillary or terminal, 1-3 together; involucel 12-14-leaved, much longer than the calyx; carpels acuminated. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers rose-coloured.

Field-rose Pavonia. Fl. May. Shrub 1 to 2 feet.

39 P. VISCÒSA (St. Hil. fl. bras. 1. p. 236.) leaves cordate, acute, denticulated, puberulous, clammy; flowers axillary or subterminal, solitary; involucel 15-16-leaved, a little longer than the calyx; carpels unarmed, obtuse. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers yellowish-red.

Clammy Pavonia. Fl. March. Shrub 4 to 5 feet.

40 P. MEXICA'NA (H. B. et Kunth, nov. spec. amer. 5. p. 284.) leaves hastately-cordate, acuminated, serrate-crenate, clothed beneath as well as the branches with clammy tomentum; peduncles 1-flowered; leaflets of involucel 10-15, linear. ♃. S. Native of Mexico. Flowers red. Leaves hoary beneath.

Mexican Pavonia. Pl. 3 to 6 feet.

41 P. SIDOÌDES (Horn. hort. hafn. 2. p. 658.) leaves roundish-cordate, lower ones somewhat serrated at the apex, blunt, upper ones angular, acute; pedicels 1-flowered, generally solitary, rather shorter than the petioles; involucel 12-leaved. ♂. S. Native of Bengal. The whole plant is pilose and viscid. Flowers yellow.

Sida-like Pavonia. Fl. June, Aug. Clt. 1819. Pl. 2 ft.

42 P. ZEYLA'NICA (Willd. spec. 3. p. 838. exclusive of the synonyme of Seb.) pilose; lower leaves roundish-cordate, crenate, the rest 3-5-lobed; pedicels axillary, 1-flowered; involucel of 10 fringed, bristle-like leaves. ⊙. S. Native of Ceylon. Hibíscus Zeylánicus, Lin. spec. 981. Hibíscus arenàrius, Scop. del. ins. 3. t. 2. Flowers flesh-coloured, about the size of those of *Potentílla anserìna*.

Var. α, *Burmánni* (D. C. prod. 1. p. 444.) leaves 3-5-cleft; pedicels shorter than the leaves.—Burm. ind. t. 48. f. 2.

Var. β, *Cavanillèsii* (D. C. l. c.) leaves 3-5-parted; pedicels longer than the leaves.—Cav. diss. 3. t. 48. f. 2.

Ceylon Pavonia. Fl. July, Sept. Clt. 1790. Pl. 1 to 2 ft.

43 P. CANCELLA'TA (Cav. diss. 3. p. 135.) pilose; leaves cordate, arrow-shaped, toothed; pedicels axillary, 1-flowered, longer than the petioles; involucel of 13-15 leaves, pilose. ⊙. S. Native of Surinam, French Guiana, Caraccas, and Brazil. Hibíscus cancellàtus, Lin. fil. suppl. t. 311. Plant prostrate. Flowers sulphur-coloured with a violet centre. Leaves 5-lobed.

Latticed Pavonia. Fl. July, Aug. Clt. 1820. Pl. ½ to 1 ft.

44 P. HUMIFU'SA (St. Hil. fl. bras. 1. p. 235.) leaves cordate, 3-5-lobed, unequally toothed, velvety-tomentose on both surfaces; flowers axillary, solitary; involucel 18-leaved, much longer than the calyx; carpels angular, tricuspidate at the apex. ♄. S. Native of Brazil near Rio Janeiro by the sea-side. Flowers greenish-yellow.

Trailing Pavonia. Shrub prostrate.

SECT. IV. MALVAVISCOÌDEÆ (plants agreeing with the genus *Malvavíscus* in the connivent corolla and exserted stamens). Staminiferous tube exserted beyond the connivent corolla.

45 P. MALVAVISCOÌDES (St. Hil. fl. bras. 1. p. 237.) leaves cordate, nearly entire, coriaceous, canescent beneath; flowers subterminal, solitary; involucel 10-leaved, shorter than the calyx. ♄. S. Native of Brazil, in the province of Minas Geraes on the mountains called Serra da Cadonga. Flowers splendid red.

Malvaviscus-like Pavonia. Fl. March. Shrub 5 feet.

46 P. CONFE'RTA (St. Hil. fl. bras. 1. p. 238.) leaves crowded at the tops of the branches, long-lanceolate, acuminated, nearly entire; flowers terminal, crowded; involucel many-leaved, in 2 series, shorter than the calyx. ♄. S. Native of Brazil, in woods. Flowers dark purple.

Crowded-leaved Pavonia. Fl. Oct. Shrub 4 to 5 feet.

47 P. MULTIFLÒRA (St. Hil. fl. bras. 1. p. 239. t. 47.) leaves long-lanceolate, acuminated, nearly entire, scabrous; flowers sub-terminal, rather corymbose, many-flowered; involucel many-leaved, in 2 series, a little longer than the calyx. ♄. S. Native of Brazil, in woods. Flowers greenish.

Many-flowered Pavonia. Fl. Oct. Shrub 5 to 6 feet.

48 P. LONGIFÒLIA (St. Hil. fl. bras. 1. p. 239.) leaves very long, elliptic-lanceolate, obsoletely-toothed, scabrous; flowers sub-terminal, crowded; involucel many-leaved, in 2 series, a little longer than the calyx. ♄. S. Native of Brazil, in woods. Flowers greenish.

Long-leaved Pavonia. Fl. Oct. Shrub 5 to 6 feet.

49 P. TRICALYCA'RIS (St. Hil. fl. bras. 1. p. 240.) leaves long, elliptic-lanceolate, entire; flowers terminal, crowded; involucel many-leaved, in 2 series, a little longer than the calyx, but the outer series is small. ♄. S. Native of Brazil, in woods.

Three-calyxed Pavonia. Shrub 5 to 6 feet?

50 P. ALNIFÒLIA (St. Hil. fl. bras. 1. p. 241.) leaves sub-

ovate, obtusely toothed, very smooth, shining, full of pellucid dots; flowers sub-terminal, solitary; involucel 5-leaved, connate at the base, a little longer than the calyx; genitals hardly exserted. ♄. S. Native of Brazil in the province of Rio Janeiro. Flowers yellowish, sometimes twin.

Alder-leaved Pavonia. Fl. Aug. Shrub 5-6 feet.

Cult. The greater part of the species of this genus are worth cultivating for the beauty of their blossoms. They are all free growing plants, for the most part ripening seed in abundance, and ripened cuttings of the shrubby and perennial herbaceous species will root freely if planted in sand under a hand-glass, placed in a moderate heat. The annual and biennial species require the same treatment as other stove annuals and biennials.

XI. MALVAVI'SCUS (from *malva*, mallow, and *viscus*, glue). Dill. elth. 210. Cav. diss. 3. p. 131. D. C. prod. 1. p. 445.—Achània, Swartz. prod. 2.

Lin. syst. *Monadélphia, Polyándria.* Calyx girded by a many-leaved involucel. Petals erect, convolute. Stigmas 10. Carpels 5, baccate, 1-seeded, sometimes distinct, but usually connected into a 5-celled fruit. Mallow-like shrubs, usually with scarlet campanulate flowers with the staminiferous column protruding beyond the corolla.

Sect. I. Acha'nia (from α priv. χαος, *chaos*, an opening, or αχανης, *achanes*, firm; because the corolla always appears half closed). D. C. prod. 1. p. 445. Petals eared at the base.

1 M. ca'ndidus (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. c.) leaves cordate, 5-cleft, rather acute, with the middle lobe longest; involucel 10 or 12-leaved, rather spreading. ♄. S. Native of Mexico. Flowers red.

White-leaved Malvaviscus. Shrub 12 feet.

2 M. arbòreus (Cav. diss. 3. t. 48. f. 1.) leaves cordate, 3-5-lobed, acuminated, roughish; leaflets of involucel erect. ♄. S. Native of Jamaica, NewGranada, and Mexico,on calcareous rocks. Achània Malvavíscus, Swartz, fl. ind. occ. 2. p. 1222. Sims, bot. mag. t. 2305. Hibíscus Malvavíscus, Lin. spec. 978.—Dill. elth. t. 170.—Sloan. hist. 1. p. 216. t. 136. f. 1. Flowers large, scarlet.

Tree Malvaviscus. Fl. year. Clt. 1714. Shrub 12 feet.

3 M. mo'llis (D. C. prod. 1. p. 445.) leaves cordate, somewhat 3-lobed, soft, tomentose; leaflets of involucel rather spreading. ♄. S. Native of Mexico. Achània móllis, Ait. hort. kew. ed. 1. vol. 2. p. 459. Ker. bot. reg. t. 11. Flowers scarlet.

Soft-leaved Malvaviscus. Fl. Aug. Sep. Clt. 1780. Sh. 12 ft.

4 M. pilo'sus (D. C. prod. 1. p. 445.) leaves cordate, crenated, obtuse or acuminated; branches and petioles pilose. ♄. S. Native of the south of Jamaica in bushy places. Achània pilòsa, Swartz. fl. ind. occ. 2. p. 1224. Lodd. bot. cav. 829. Flowers red.

Pilose Malvaviscus. Fl. Oct. Nov. Clt. 1780. Sh. 12 ft.

5 M. Balbi'sii (D. C. prod. 1. p. 445.) leaves cordate, acuminated, scabrous on both surfaces, with the nerves beneath as well as the petioles and branchlets hairy-tomentose; pedicels twice as long as petioles. ♄. S. Native of? M. cordàtus, Balb. herb. A very shewy plant with scarlet flowers and entire linear-acute leaflets of involucel.

Balbis's Malvaviscus. Shrub 10 feet.

6 M. penduliflòrus (Moc. et Sesse, fl. mex. icon. ind. D. C. prod. 1. p. 445.) leaves ovate, rather cordate, acute, serrated; pedicels slender, nodding inwards; involucels erectish. ♄. S. Native of Mexico. Flowers red.

Pendulous-flowered Malvaviscus. Shrub 10 feet.

7 M. pentaca'rpus (Moc. et Sesse. fl. mex. icon. ind. D. C. prod. 1. p. 445.) leaves cordate-ovate, acute, serrated, hardly 3-lobed; pedicels erect; leaflets of involucel linear; carpels 5, baccate, somewhat distinct from each other. ♄. S. Native of Mexico. Atlat-zopillin. Hern. mex. 117. icon. Flowers scarlet?

Five-fruited Malvaviscus. Shrub 10 feet.

8 M. cilia'tus (D. C. prod. 1. p. 445.) leaves ovate, acute, serrated; pedicels solitary; leaflets of involucel linear, ciliated; petals acutely auricled at the base. ♄. S. Native of the island of Tobago. Pavònia spiràlis, Cav. icon. 5. t. 434. Achània ciliàta, Spreng. Flowers scarlet. Leaves cordate.

Ciliated-involucred Malvaviscus. Shrub 8 feet.

9 M. conci'nnus (H. B. et Kunth, nov. gen. amer. 5. p. 286.) leaves ovate-oblong, acuminated, cordate, grossly crenate-serrated; puberulous on both surfaces; flowers 2 or 3 together, somewhat corymbose; pedicels shorter than the petioles; involucel 7-leaved, equal in length with the calyx. ♄. S. Native of Peru near Loxa. Achània concínna, Spreng. Flowers twin or tern. Petals fringed, scarlet. Branchlets downy.

Neat Malvaviscus. Shrub 10 feet.

10 M. grandiflòrus (H. B. et Kunth, nov. gen. amer. 5. p. 286.) leaves ovate-oblong, acute, rounded at the base or obsoletely cordate, somewhat 3-lobed, serrated, smoothish; peduncles solitary, longer than the petioles; involucel 8-leaved, shorter than the calyx. ♄. S. Native of Mexico, near Guanaxuato. Branches and petioles pilose. Flowers scarlet.

Great-flowered Malvaviscus. Shrub 10 feet.

11 M. Acapulce'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 286.) leaves ovate, somewhat acuminated, profoundly-cordate, coarsely toothed, pilose on both surfaces, soft and canescent beneath; peduncles solitary, longer than the petioles; involucel usually 7-leaved, about equal in length with the calyx. ♄. S. Native of Mexico near Acapulca. Flowers scarlet. Perhaps the same as *M. pilòsus*.

Acapulca Malvaviscus. Shrub 12 feet.

12 M. Poppi'gii (Spreng. syst. 3. p. 100. under *Achània*) leaves truncate at the base, ovate-oblong, acuminated, somewhat 3-lobed, toothed, hairy; involucels spreading; genitals exserted. ♄. S. Native of Cuba. Flowers scarlet.

Poppig's Malvaviscus. Shrub 6 to 8 feet.

Sect. II. Ano'tea (from α priv. and *notus*, known; not sufficiently known). D. C. prod. 1. p. 445. Petals not eared at the base. Species not sufficiently known. Distinct from *Hibíscus* in having 10 stigmas, from section *Achània* in the petals not being eared at the base, but the plants appear to agree with section *Malvaviscoìdeæ* of *Pavònia*.

13 M.? corda'tus (Nees. and Mart. nov. act. bonn. xi. p. 99. under *Achània*) leaves cordate, crenated, tomentose underneath; involucel 8 or 9-leaved, and is as well as the calyx beset with bristles; stamens not protruding beyond the flower. ♄. S. Native of Brazil. Flowers deep red.

Cordate-leaved Malvaviscus. Shrub 5 to 10 feet.

14 M.? fla'vidus (Moc. et Sesse, fl. mex. icon. ined.) leaves acutely 5-angled, toothed, cordate at the base; corolla cylindrical; column of stamens erect, twice the length of the petals. ♄. S. Native of Mexico. Flowers yellowish.

Yellow Malvaviscus. Shrub 6 feet.

15 M.? pleuro'gonus (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 446.) leaves palmately and acutely 5-7-lobed, toothed, cordate at the base; corolla somewhat campanulate; column of stamens very long, somewhat declinate; anthers for the most part secund. ♄. S. Native of Mexico.

Side-angled Malvaviscus. Shrub 6 feet.

16 M.? pleuranthe'rus (Moc. et Sesse, fl. mex. icon. ined.) leaves cordate at the base, acutely 3-5-lobed, palmatifid; lobes toothed, middle one longest; flowers somewhat cylindrical; column of stamens erect, equal in length to the petals; anthers secund. ♄. S. Native of Mexico. Flowers red?

Side-anthered Malvaviscus. Shrub 8 feet.

Cult. The greater part of the species of this genus bear bright scarlet flowers; therefore they are desirable in all collections. A mixture of loam and peat will suit them best, and cuttings will root readily in sand under a hand-glass; these should be taken off as near the stem of the plant as possible, not being so apt to rot as when taken off by the middle of the shoot. None of the leaves should be taken off or shortened above the sand. (Sweet.)

XII. LEBRETO'NIA (in honour of Manuel Le Breton, a French botanist.) Schrank, pl. rar. hort. mon. t. 90. D. C. prod. 1. p. 446.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-parted, girded by a rather shorter 5-parted involucel. Petals 5, in part protruding, twisted in the bud, with a spreading border. Styles 10. Carpels 5, or from abortion only 4, 1-seeded, indehiscent. Perhaps sufficiently distinct from the second section of *Pavònia.*

1 L. cocci'nea (Schrank. l. c.) leaves ovate, acuminated, serrated; pedicels axillary, 1-flowered, longer than the petioles; corolla twice as long as the involucel. ♄. S. Native of Brazil. Pavònia Schránkii, Spreng. syst. 3. p. 98. Trunk hispid. Flowers large, scarlet. Leaves pubescent above, tomentose beneath.

Scarlet-flowered Lebretonia. Fl. June, Aug. Clt. 1823. Shrub 4 feet.

2 L. latifòlia (Nees et Mart. nov. act. bonn. xi. p. 98.) leaves ovate, somewhat cordate, acutish, crenately-serrated, pubescent; pedicels 1-flowered; corolla almost equal in length with the involucel. ♄. S. Native of Brazil. Pavònia latifòlia, Spreng. syst. 3. p. 98. Flowers scarlet. Calyx greenish, as in *L. coccínea.* Leaves pubescent.

Broad-leaved Lebretonia. Shrub 4 feet.

3 L. semiserra'ta (D. C. prod. 1. p. 446.) leaves oblong, serrated at the apex, coriaceous, on long stalks; flowers terminal; calyx coloured, permanent. ♄. S. Native of Brazil. Schoùwia semiserràta, Schrad. gœtt. ann. 1821. p. 717. A doubtful plant.

Semiserrated Lebretonia. Shrub 4 feet?

Cult. These shrubs deserve to be cultivated in every collection on account of their shewy scarlet blossoms. They require to be treated in the same manner as recommended for *Malvavíscus.*

XIII. HIBI'SCUS (from *ἰβισκος, hibiscos,* one of the names given by the Greeks to *Mallow.* The *Hibiscus* of Pliny appears to be an umbelliferous plant, while that of Virgil is a plant with pliant branches, which was made into baskets. The name is said to be derived from *Ibis,* a stork, which is said to chew some species.) Lin. gen. no. 846. Lam. ill. t. 584. D. C. prod. 1. p. 446.

Lin. syst. *Monadélphia, Polyándria.* Calyx encompassed by a many-leaved, rarely by a few-leaved involucel, sometimes connected at the base. Petals not auricled. Stigmas 5. Carpels joined into a 5-celled, 5-valved capsule, with a dissepiment in the middle of each valve on the inside. Cells many-seeded, rarely 1-seeded. The bark of all the species is so tough that it may be made into ropes, or spun into thread of any description.

Sect. I. Cremóntia (from *cremo,* to burn; vivid colour of the flowers of some of the species.) Comm. ined. D. C. prod. 1. p. 446. Corolla (as in *Malvavíscus*) convolute, cylindrical, but the petals are not eared at the base as in that genus. Stigmas 5. Cells of capsule many-seeded.

1 H. liliiflòrus (Cav. diss. 3. p. 154. t. 57. f. 1.) leaves lanceolate-oblong, entire or rarely trifid; involucel 5-leaved; shorter than the 5-toothed calyx; petals rather velvety on the outside. ♄. S. Native of the island of Bourbon, in mountain woods. Malvavíscus puníceus, Bory, ined. Flowers scarlet, campanulate.

Var. β, hýbridus (Hook. bot. mag. 2891.) This is a splendid hybrid, produced from *H. liliiflòrus,* impregnated by the pollen of *H. mutábilis.* Flowers large. ♄. S. Raised in the Mauritius.

Lily-flowered Hibiscus. Fl. June, July. Clt. 1822. Tree 8 to 12 feet.

2 H. biflòrus (Spreng. syst. tent. suppl. p. 19.) leaves oblong-lanceolate, remotely toothed, pilose above, but tomentose and veiny beneath; peduncles axillary, straight, forked, 2-flowered; involucel 4-leaved, stellately-pubescent, with the leaflets broad and lanceolate, and drawn out at the base, longer than the woolly calyx, but equal in length to the conniving campanulate corolla. ♄. S. Native of the Cape of Good Hope. This is a very shewy species.

Two-flowered Hibiscus. Shrub 6 to 10 feet.

3 H. Borya'nus (D. C. prod. 1. p. 446.) leaves ovate, a little toothed, undivided, 5-nerved, smooth; involucel 5-7-leaved, a little longer than the 5-toothed calyx; petals oblong, rather velvety. ♄. S. Native of the island of Bourbon. Flowers white, on very short pedicels.

Bory de St. Vincent's Hibiscus. Shrub 10 feet.

4 H. fra'gilis (D. C. prod. 1. p. 446.) leaves ovate, hardly 3-lobed, toothed, smooth; pedicels 1-flowered, length of leaves; involucel 5-leaved. ♄. S. Native of Bourbon. Malvavíscus frágilis, Bory. ined. Flowers red.

Brittle Hibiscus. Shrub 4 to 8 feet.

5 H. pedunicula'tus (Cav. diss. 3. p. 163. t. 66. f. 2.) leaves 3 or 5-lobed, obtuse, crenated, hairy; pedicels twice as long as the leaves; involucel many-leaved; corolla rather campanulate. ♄. G. Native of the Cape of Good Hope. Ker, bot. reg. t. 231. Flowers small, bright red.

Pedunculated-flowered Hibiscus. Fl. May, Dec. Clt. 1812. Shrub 3 to 4 feet.

6 H. callòsus (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 649.) leaves half 3-lobed, acuminated, upper ones heart-shaped, stellately-pubescent beneath; peduncles sub-racemose; involucels very minute, callose at the tip; calyx toothed, smooth; capsules oval, pentagonal, 3 times larger than the calyx. ♄. S. Native of Java.

Callose-involucelled Hibiscus. Tree 15 feet.

7 H. la'mpas (Cav. diss. 3. p. 154. t. 56. f. 2.) leaves cordate, 3-lobed, smooth, dotted beneath; pedicels solitary, 1-flowered at the tops of the branches, longer than the petioles; involucel small, of 5 or 7 bristle-like leaves. ♄. S. Native of the Philippine islands and Java. Flowers large, yellowish.

Lamp Hibiscus. Clt. 1806. Shrub 10 feet.

8 H. membrana'ceus (Cav. diss. 3. p. 159. t. 57. f. 2.) leaves cordate, ovate-lanceolate, acuminated, toothed; pedicels twice as long as the petioles, 1-flowered; involucel of 10 lanceolate leaves, much shorter than the 5-cleft calyx, with 3-nerved segments. ♄. S. Native of? Flowers yellow.

Membranaceous Hibiscus. Fl. Ju. Jul. Clt. 1816. Sh. 10 ft.

9 H. spira'lis (Cav. icon. 2. p. 47. t. 162.) leaves ovate, acute, toothed, smooth, quite entire at the base; pedicels 1-flowered, twice the length of the petioles; involucel of 9-10-linear leaflets. ♄. S. Native of Mexico. Petioles villous. Flowers from yellow to flesh-coloured.

Spiral-flowered Hibiscus. Fl. June, July. Clt. 1823. Shrub 6 feet.

10 H. tubiflòrus (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 447.) leaves cordate, acute, somewhat scolloped, denticulately-serrated, villous; pedicels 1-flowered, twice as long as the petioles; involucel many-leaved. ♄. S. Native of Mexico on the mountains. Flowers from yellow to red.

Tube-flowered Hibiscus. Shrub 10 feet.

11 H. Senegale'nsis (Cav. diss. 3. p. 160. t. 68. f. 1.) leaves cordate, toothed, tomentose, lower ones angular; pedicels 1-flowered, shorter than the petioles; involucel of 10 bristle-like leaves, which are equal in length to the calyx. ♄. S. Native of Senegal. Flowers small, yellow with a dark centre.

Senegal Hibiscus. Fl. Ju. July. Clt. 1824. Shrub 4 feet.

12 H. tubulòsus (Cav. diss. 3. p. 161. t. 68. f. 2.) leaves cordate, unequally toothed, hoary-villous beneath, tomentose above, lower ones somewhat 5-lobed, upper ones acuminated; pedicels 1-flowered, very short; involucel of 8 linear-spatulate leaflets. ♄. S. Native of the East Indies and Senegal. Flowers somewhat campanulate, yellowish, with a purple base.

Tubular-flowered Hibiscus. Fl. July, Oct. Clt. 1796. Pl. 2 to 4 feet.

13 H. u'rens (Lin. suppl. 309.) leaves kidney-shaped, crenated, and are as well as the stem tomentose; pedicels 2-3-together, axillary; involucel 12-parted; corolla shorter than the calyx. ↄ. G. Native of the Cape of Good Hope. Cav. diss. 3. p. 161. t. 67. f. 1. Flowers purple.

Stinging Hibiscus. Pl. 4 feet.

Sect. II. Pentaspe'rmus (from πεντε, *pente*, five, and σπερμα, *sperma*, a seed; because the fruit is usually composed of 5 1-seeded cells or carpels.) D. C. prod. 1. p. 447. Corollas expanded. Valves of capsules bearing dissepiments in the middle, with 1-seeded cells, composed of 2 valves. This section does not appear to be generically distinct from *Pavònia*.

14 H. ova'tus (Cav. diss. 3. p. 143. t. 50. f. 3.) leaves ovate, quite entire, fringed, 3-nerved, villous beneath; pedicels 1-flowered, twice the length of the petioles. ♄. G. Native of the Cape of Good Hope. Pavònia ovàta, Spreng. syst. 3. p. 99.

Ovate-leaved Hibiscus. Shrub ?

15 H. hasta'tus (Cav. diss. 3. p. 144. t. 50. f. 1.) leaves halbert-shaped, oblong, serrated, narrow; pedicels 1-flowered, about the length of the leaves; fruit globose, downy. ♄. S. Native of the East Indies. Pavònia hastàta, Spreng.—Pluk. t. 127. f. 2. Flowers reddish.

Halbert-leaved Hibiscus. Shrub 2 feet.

16 H. acumina'tus (Cav. diss. 3. p. 144. t. 50. f. 2. exclusive of the synonyme of Pluk.) leaves cordate, acuminated, lower ones 3-lobed; pedicels 1-flowered, longer than the petioles; involucel 9-leaved; fruit downy, depressed. ♄. S. Native of? Pavònia acuminàta, Spreng. syst. 3. p. 99. Flowers large, reddish, purple.

Acuminated-leaved Hibiscus. Shrub 2 feet.

17 H. pentaca'rpos (Lin. spec. 981.) leaves cordate, oblong, toothed, bluntish, angular, somewhat 3-lobed, smooth; pedicels equal with or shorter than the petioles; flowers drooping; column of stamens nodding. ↄ. H. Native of Etruria and about Venice, in marshes. Jacq. icon. rar. 1. t. 143. Pavònia Venèta, Spreng. syst. 3. p. 98. Flowers small, pale-red.

Five-fruited Hibiscus. Fl. July, Sep. Clt. 1752. Pl. 3 ft.

18 H. Virgi'nicus (Lin. spec. 981.) leaves acuminated, unequally toothed, rather villous, lower ones cordate, undivided, upper ones ovate, cordate, 3-lobed; pedicels longer than the petioles; flowers drooping; pistils nodding. ↄ. H. Native of North America in salt marshes, from New Jersey to Carolina. Pavònia Virgínica, Spreng. syst. 3. p. 98. Flowers rose-coloured, about twice the size of those of *H. pentacárpos*, disposed in racemes at the tops of the branches. Jacq. icon. rar. 1. t. 142.—Pluk. phyt. t. 6. f. 4. Sweet. fl. gard. icon.

Virginian Hibiscus. Fl. July, Sept. Clt. 1798. Pl. 3 to 4 ft.

19 H. pentaspe'rmus (Bert. ined. D. C. prod. 1. p. 447.) whole plant hispid from spreading hairs; leaves cordate, acuminated, grossly toothed; pedicels axillary, 1-flowered, a little longer than the petioles; fruit 5-sided, hispid on the angles. ↄ. S. Native of Jamaica. Pavònia Bertèrii, Spreng. syst. 3. p. 99. Flowers small, yellow.

Five-seeded Hibiscus. Pl. 2 to 3 feet.

Sect. III. Ma'nihot (altered from the Brazilian word *Mandioka*, the *Cassava* or *Casada*; resemblance in some species.) D. C. prod. 1. p. 448. Cells of capsules many-seeded. Seeds smooth. Involucel 4-6-leaved. Calyx spathaceous, 5-toothed, ruptured longitudinally.

20 H. ma'nihot (Lin. spec. 980.) stem unarmed; leaves smoothish, palmately parted into 5 or 7 acuminated, coarsely-toothed lobes; involucel 4-6-leaved, hispid; pedicels when in flower, declinate. ↄ. S. Native of the East Indies. Cav. diss. 3. p. 172. t. 63. f. 2. Sims, bot. mag. t. 1702. Sab. hort. 1. t. 56.—Dill. elth. 189. t. 156. f. 189. Flowers sulphur-coloured, with a dark-purple centre. In Japan they use the mucilage of the root to give a consistence to paper as Thunberg informs us.

Var. β, *palmàtus* (Cav. diss. 3. p. 168. t. 63. f. 1.) leaves palmately parted; root thick, spongy. ↄ. F. Native of South America as well as in North America on the banks of the Mississippi. Flowers sulphur-coloured, with a purple centre. Fruit as in var. α, pyramidal, and very hairy.

Manihot Hibiscus. Fl. July, Sep. Clt. 1712. Pl. 3 feet.

21 H. Timorie'nsis (D. C. prod. 1. p. 448.) stem unarmed; leaves smooth, palmatifid, with 7 acuminated serrated lobes; involucel 5-leaved, smooth. ↄ. ♄? S. Native of the island of Timor. Resembles var. β, of *H. Mánihot*. Fruit somewhat globose, not pyramidal. Flowers yellow with dark claws.

Timor Hibiscus. Shrub 2 to 5 feet.

22 H. Pseu'do-ma'nihot (D. C. prod. 1. p. 448.) stem unarmed; leaves trifid, rather hairy; lobes ovate, acuminated, coarsely toothed; involucel 4-leaved, hispid. ↄ. ♄? S. Native of the island of Bourbon in grassy places on the banks of the river St. Denis. Fruit and flowers of *Hibiscus triònum*, but the leaves are trifid, not 5-7-parted.

False-Manihot Hibiscus. Pl. 1 to 2 feet.

23 H. ficu'lneus (Lin. spec. 978.) stem prickly from tubercles; leaves palmately 5-lobed, upper ones 3-lobed; lobes blunt, unequally toothed, narrowed at the base; involucel 5-leaved, caducous. ♄. S. Native of Ceylon.—Dill. elth. t. 157. f. 190. H. sinuàtus, Cav. diss. 3. t. 52. f. 2. Flowers yellow, purple at the bottom.

Fig-leaved Hibiscus. Fl. Ju. July. Clt. 1732. Shrub 4 ft.

24 H. ficulnoi'des (Lindl. bot. reg. t. 938.) stem shrubby, unarmed; leaves cordate, ovate, obtuse, deeply toothed, entire or 3-lobed, pubescent, as well as the 5-leaved involucel. ♄. S. Native of the East Indies and the Mauritius. H. Mauritiànus, Spreng. syst. append. p. 258.—Pluk. amalth. p. 11. t. 355. f. 4? Petal yellow, with purple claws.

Ficulneus-like Hibiscus. Fl. Ju. Aug. Clt. 1823. Sh. 1-3 ft.

25 H. tetraphy'llus (Roxb. ex Horn. hort. hafn. 561.) stem herbaceous; leaves 5-lobed, serrated; involucel 4-5-leaved. ⊙. S. Native of Bengal. Flowers yellow, with a purplish centre?

Four-leaved-involucelled Hibiscus. Fl. July, Aug. Clt. 1818. Pl. 1 foot.

Sect. IV. Ke'tmia (derived from the Arabic word *khethmy*, signifying a Malvaceous plant.) D. C. prod. 1. p. 448. Cells of capsules many-seeded. Seeds smooth. Corollas expanded. Involucel 5-7 cleft. Calyx 5-lobed, not ruptured longitudinally as in the preceding section.

26 H. mi'cans (Cav. diss. 3. p. 167. t. 60. f. 2.) stem unarmed; leaves cordate, 5-angled, toothed, acuminated; involucel 6-parted. ♄. S. Native of Java. Flowers yellow, with a dark centre. Leaves clothed with glittering tomentum.

Glittering Hibiscus. Shrub 6 to 10 feet.

27 H. CALYCI'NUS (Willd. spec. 3. p. 817.) stem unarmed; leaves cordate, angular, somewhat 3-lobed, repand; involucel 5-leaved, stipitate, longer than the petals. ♄. S. Native of the island of Bourbon. H. calyphýllus, Cav. diss. 5. p. 283. t. 140. Corolla yellow with a dark centre.

Large-calyxed Hibiscus. Shrub 3 to 6 feet.

28 H. COLUMNA'RIS (Cav. diss. 3. p. 166. t. 59. f. 2.) stem unarmed; leaves cordate, 5-angled, repand; involucel usually 6-cleft; column of stamens exceeding the campanulate corolla. ♄. S. Native of Bourbon. Flowers large, terminal, yellow.

Columnar-stamened Hibiscus. Shrub 6 feet.

29 H. ACERIFÒLIUS (D. C. prod. 1. p. 448.) stem unarmed; leaves cordate, 5-lobed, hairy; lobes acuminated, somewhat repand; involucel of 6-7 bristle-like leaves. ♄. S. Native of the East Indies. Pavònia platanifòlia, Willd. berl. mag. 1810. p. 220. Pavònia acerifòlia, Link, and Otto, abb. 1. p. 5. t. 1. Styles 5, therefore it cannot be a *Pavònia*.

Maple-leaved Hibiscus. Fl. March, June. Clt. 1798. Shrub 6 feet.

30 H. RÒSA-SINE'NSIS (Lin. spec. 977.) stem unarmed, arboreous; leaves ovate, acuminated, smooth, entire at the base, but coarsely toothed at the apex; pedicels length of leaves; involucel 7-leaved. ♄. S. Native of the East Indies. Flowers large, single or double, purple, red, white, yellow, and variegated. Cav. diss. 3. t. 69. f. 2. Curt. bot. mag. t. 165.—Rheed. mal. 2. t. 16. A very elegant plant, for some of the prominent varieties see Lodd. bot. cab. t. 513., double dark red; t. 963, double striped; t. 932, double yellow. In China they make these handsome flowers into garlands and festoons on all occasions of festivity, and even in their sepulchral rites. They are put to a use, which seems little consistent with their elegance and beauty, that of blacking shoes, whence their name of *Ròsæ-calceolàriæ*. The women also employ them to colour their hair and eye-brows black.

Chinese-rose Hibiscus. Fl. Jul. Aug. Clt. 1731. Tree 15 ft.

31 H. SYRÌACUS (Lin. spec. 978.) stem unarmed, arboreous; leaves ovate, wedge-shaped, 3-lobed, toothed; pedicels hardly longer than the leaves; involucel 6-7-leaved. ♄. H. Native of Syria and Carniola. Cav. diss. 3. t. 69. f. 1. Curt. bot. mag. 83. Flowers large, single or double, purple, white, red or variegated. This is one of our most ornamental hardy shrubs.

Syrian Hibiscus or Althæa frutex. Fl. Aug. Sep. Clt. 1596. Shrub 6 feet.

32 H. PRU'RIENS (Rox. hort. beng. p. 51.) stem herbaceous, hairy; leaves on long stalks, ovate, somewhat 3-lobed, serrated, membranaceous, smoothish; pedicels very short; involucel and calyx very hairy at the base, equal in length to the corolla, both 5-parted, acuminated. ♂. S. Native of the East Indies. Flowers yellow with a dark centre?

Prurient Hibiscus. Pl. 2 to 6 feet.

33 H. SCA'NDENS (Roxb. hort beng. p. 51.) shrubby, scandent; leaves cordate, 3-lobed, downy beneath; stems, petioles, and panicles pilose; involucel 6-cleft, equal in length to the calyx, tomentose; flowers disposed in racemose, terminal, spreading panicles. ♄. S. Native of the East Indies. Flowers apparently red.

Scandent Hibiscus. Shrub cl.

Sect. V. FURCA'RIA (from *furca*, a fork; in allusion to the leaflets of the involucel being forked.) D. C. prod. 1. p. 449. Cells of capsule many-seeded. Seeds smooth. Leaflets of involucel 2-forked or appendiculated, with teeth. Calyx glandular.

34 H. SURATTE'NSIS (Lin. spec. 979.) stem herbaceous, scabrous from recurved prickles; stipulas semi-cordate; leaves palmately 3-5-lobed; pedicels length of petioles; leaflets of involucel 11, spatulate, appendiculated. ⊙. S. Native of the East Indies and Guinea. Cav. diss. 3. t. 53. f. 1. Sims, bot. mag. t. 1356.—Rumph. amb. 4. t. 16. Flowers yellow, with a dark purple centre. The leaves of this species are gratefully acid, and are eaten. In cataplasms they assist in dissolving hard tumours, &c. for which purpose the root is esteemed to be more efficacious. The whole plant is prickly.

Surat Hibiscus. Fl. July, Sep. Clt. 1731. Pl. straggling.

35 H. RADIA'TUS (Cav. diss. 3. p. 150. t. 54. f. 2.) stem suffruticose, scabrous from stiff prickles; stipulas lanceolate; leaves 5-7-parted into lanceolate, acuminated, serrated lobes; pedicels very short; leaflets of involucel 10, ciliated, with bristles appendiculated. ⊙. S. Native of the East Indies. Sims, bot. mag. 1911. Flowers yellow with a dark centre.

Rayed Hibiscus. Fl. July, Aug. Clt. 1790. Pl. 2 to 4 feet.

36 H. LINDLE'I (Wall. pl. asiat. rar. p. 4. t. 4.) suffruticose; petioles and peduncles scabrous and prickly; leaves roundish, cordate, palmately 3-7-parted; lobes lanceolate, acuminated, serrated; flowers axillary, solitary; involucel of 8-10, linear, hispid, ciliated leaflets, which are 2-lobed at the apex; corolla spreading; capsule clothed with silky hairs, but at length it becomes smooth. ♄. S. Native of the Burman empire near Ava on mount Taong-Dong. Flowers purple, with a darker centre.

Lindley's Hibiscus. Fl. Nov. Shrub 3 to 4 feet.

37 H. U'NIDENS (Lindl. bot. reg. 878.) stem prickly and pilose; leaves smoothish, coarsely toothed, sometimes palmately 5-lobed, sometimes roundish; flowers stalked, solitary; leaflets of involucel shorter than the calyx, with a tooth-like appendage on the inside of each. ⊙. S. Native of Brazil. Flowers large, yellow, with a dark purple centre.

One-toothed-involucelled Hibiscus. Fl. July, Aug. Clt. 1822. Pl. 2 to 4 feet.

38 H. FURCA'TUS (Roxb. hort. beng. p. 31.) stem herbaceous, and is as well as petioles and calyx covered with tubercles; leaves rather ovate, trifid, lower ones quinquefid, with acuminated serrated lobes; involucel of 9 bifid leaflets. 4. S. Native of Bengal. Flowers yellow, with a purple centre.

Forked-involucelled Hibiscus. Fl. July, Sep. Clt. 1816. Pl. 2 feet.

39 H. COLLI'NUS (Roxb. hort. beng. p. 31.) leaves smooth, 3-5-lobed, on long footstalks, cuneate at the base; peduncles solitary, axillary, short, 1-flowered; leaflets of involucel numerous, forked, hairy as well as the stem. ⊙. S. Native of the East Indies. Flowers yellow with a dark centre.

Hill Hibiscus. Pl. 2 to 3 feet.

40 H. SCA'BER (Michx. fl. bor. amer. 2. p. 45.) stem herbaceous, scabrous; leaves rough, roundish, truncated at the base, upper ones palmately-lobed, with the lobes dilated and crenate at the apex; flowers sessile; calyxes very hispid; leaflets of involucel forked. 4. F. Native of North America in marshes near the sea coast, from Carolina to Florida. Flowers large, yellow, with a dark purple centre. H. aculeàtus, Walt. fl. Car. 177.

Scabrous Hibiscus. Fl. July, Sep. Clt. 1810. Pl. 2 feet.

41 H. KITAIBELIFÒLIUS (St. Hil. fl. bras. 1. p. 248. t. 48.) hairy; leaves cordate, 3-5-lobed, dentately-serrated, hispid; involucel of 10-11-bifurcate leaflets, much shorter than the calyx, which is 5-glanded; cells of ovary 10-ovulate. ♄. S. Native of Brazil in the province of Minas Geraes, on the banks of rivulets. Flowers violet.

Kitaibelia-leaved Hibiscus. Shrub 7 to 8 feet.

42 H. FURCELLA'TUS (Desrous. dict. enc. 3. p. 358.) stem shrubby; branches and leaves downy; leaves cordate, rather angular; involucel of 10 cylindrical, forked leaflets; calyxes

hispid. ♄. S. Native of Guiana. Flowers large, purplish, with a brown centre.

Small forked-involucelled Hibiscus. Shrub 3 to 10 feet.

43 H. DI'ODON (D. C. prod. 1. p. 449.) stem shrubby; branches and leaves downy; leaves cordate, 3-5-cleft, with the middle lobe acuminated; involucel of 10 cylindrical forked leaflets; calyxes hispid. ♄. S. Native of Cayenne. Flowers yellow, with a purple bottom?

Two-toothed-involucelled Hibiscus. Shrub 3 to 4 feet.

44 H. FLAGELLIFO'RMIS (St. Hil. fl. bras. 1. p. 243.) stem suffruticose, prostrate, rough; leaves kidney-shaped, 5-angled, toothed, rough; involucel of 8 bifurcate leaves, much shorter than the calyx, which is 5-glanded; ovary with 4-seeded cells. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers axillary, and as if they were racemose at the tops of the branches, rose-coloured. Stipulas linear.

Whip-formed-stemmed Hibiscus. Shrub prostrate.

45 H. MULTIFO'RMIS (St. Hil. fl. bras. 1. p. 246.) stem herbaceous, tomentose; leaves cordate or cordate-3-lobed, dentately serrated, scabrous; involucel of 10 bifurcate leaves, much shorter than the calyx; ovary with 8-seeded cells. ♃. S. Native of Brazil, in marshes. Flowers rose-coloured, with a darker centre.

Many-formed Hibiscus. Pl. 5 to 7 feet.

46 H. DECÍPIENS (St. Hil. fl. bras. 1. p. 247.) shrubby, scabrous from prickles; leaves cordate or cordate-3-lobed, denticulately-serrated, rather scabrous; involucel of 8-10 bifurcate leaflets, longer than the calyx, which is 5-glanded; ovary with 9-seeded cells. ♄. S. Native of Brazil in the province of Rio Janeiro, in hedges. Flowers rose-coloured.

Deceiving Hibiscus. Fl. Sept. Shrub 5 to 6 feet.

47 H. UNCINE'LLUS (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 449.) stem shrubby; branches clothed with reflexed hairs; leaves palmately 3-5-lobed, cordate at the base, toothed; involucel of 10 leaflets each, furnished with a hooked appendage on the back. ♄. S. Native of Mexico. Flowers large, hardly open, of a violet-purple colour.

Hooked-appendaged Hibiscus. Shrub 5 to 6 feet.

48 H. BICÓRNIS (Meyer. esseq. 231.) stem shrubby, and is as well as the petioles prickly; leaves 3-5-lobed; lobes auriculated, lanceolate, serrated; leaflets of involucel 2-lobed, longer than the calyx. ♄. S. Native of Guiana in pastures and woods. Corolla rose-coloured, with a purple centre, six times smaller than the calyx.

Two-horned-involucelled Hibiscus. Shrub 2 to 4 feet.

49 H. BIFURCA'TUS (Cav. diss. 3. p. 146. t. 51. f. 1.) stem shrubby, prickly towards the top of the branches; peduncles and nerves of leaves furnished with reflexed prickles beneath; leaves of 3-5 acuminated-serrated lobes; involucel of 10-17 hairy bifid leaflets. ♄. S. Native of Brazil and Porto-Rico. Flowers large, red.

Two-forked-involucelled Hibiscus. Fl. June, July. Clt. 1825. Shrub 3 feet.

Sect. VI. Abelmóschus (latinized from the Arabic name *kabb-el-misk*, which signifies musk-seed. The seeds of *H. Abelmóschus* exhale a scent like musk.) Med. malv. p. 45. D. C. prod. 1. p. 449. Cells of capsule many-seeded. Seeds usually smooth, seldom with a villous line on the back. Corolla expanded. Involucel of 8 to 15, entire, narrow leaflets or segments. Stigmas 5.

§ 1. *Stem prickly from tubercles.*

50 H. Lambertia'nus (H. B. et Kunth, nov. gen. amer. 5. p. 291. t. 478.) stem prickly, simple, herbaceous; leaves ovate-lanceolate, acuminated, rounded at the base, serrate, hairy above, hoary and tomentose beneath; involucel of 11 leaflets. ⊙? S. Native of Caraccas in humid places. Flowers large, purple, with a blood-coloured centre. Stigmas peltate, convex.

Lambertian Hibiscus. Fl. July, Sept. Pl. 6 feet.

51 H. TRI'LOBUS (Cav. diss. 3. p. 147. t. 53. f. 2. exclusive of the synonyme of Rheed). Stem arboreous, prickly; pedicels unarmed; leaves cordate, with 3 serrated lobes, middle lobe longest; involucel of 12 linear leaflets. ♄. S. Native of St. Dominique, in marshes.—Plum. ed. Burm. t. 159. Corolla pale scarlet, the size of those of *H. Syríacus*.

Three-lobed-leaved Hibiscus. Fl. July, Aug. Clt. 1818. Shrub 10 feet.

52 H. DIVERSIFÒLIUS (Jacq. icon. rar. 3. p. 551.) stem and petioles prickly; pedicels short, unarmed, hairy; leaves of 3-5 obtuse, toothed lobes; upper ones oblong-lanceolate, undivided; involucel of 9 linear leaflets. ♄. S. Native of the East Indies. Ker. bot. reg. t. 381. H. ficùlneus, Cav. diss. 3. t. 51. f. 2. Flowers yellow with a dark violet centre.

Different-leaved Hibiscus. Fl. June, July. Clt. 1798. Sh. 10 feet.

53 H. MACULA'TUS (Desrous. in dict. ency. 3. p. 349.) stem and petioles prickly; lower leaves palmate-parted, toothed; upper ones ovate, somewhat 3-lobed; involucel many-leaved; calyx hispid, spotted. ♄. S. Native of St. Domingo. Flowers dark red.

Spotted-calyxed Hibiscus. Shrub 6 feet.

54 H. Cisplate'nsis (St. Hil. fl. bras. 1. p. 250.) stem shrubby, prickly; leaves cordate, acute, or cordate 3-lobed, nearly smooth; involucel of 12 linear, acute leaflets, which are 3-times shorter than the calyx. ♄. S. Native of Brazil in the western part of the province of Cisplatine. Flowers purplish.

Cisplatine Hibiscus. Fl. Dec. Shrub 3 to 4 feet.

55 H. SPLE'NDENS (Fraser, mss. Graham. in edinb. phil. journ. p. 175. Hook. bot. mag. t. 3025.) stem beset with straight prickles and tubercles at the base; corolla expanded, tomentose on the ribs beneath; segment of the calyx 3-nerved, keeled; leaflets of involucel numerous, linear, awl-shaped, a little shorter than the calyx; peduncles axillary, 1-flowered, much longer than the petioles; leaves palmately 3-5-lobed; lobes lanceolate. ♄. S. Native of New Holland. Flowers large, rose-coloured. Style protruding beyond the stamens.

Splendid Hibiscus. Fl. May, July. Clt. 1828. Shrub 5 to 20 feet.

56 H. HETEROPHY'LLUS (Vent. malm. t. 103.) stem shrubby, prickly; leaves lanceolate, acuminated, for the most part 3-lobed, with prickly serratures; involucel 10-leaved. ♄. G. Native of New Holland. Ker. bot. reg. t. 29. Flowers large, reddish-white, with a purple centre. H. grandiflòrus, Sal. par. t. 22.

Various-leaved Hibiscus. Fl. Aug. Sept. Clt. 1803. Sh. 6 ft.

57 H. CANNA'BINUS (Lin. spec. 979.) stem prickly; leaves palmately 5-parted, deeply serrated, with 1 gland beneath on the principal nerve; flowers almost sessile; calyx beset with glandular hairs. ⊙. S. Native of the East Indies. Flowers large, yellow, with a dark brown bottom. Cav. diss. 3. p. 148. t. 52. f. 1. Roxb. cor. 2. t. 190. H. vitifòlius, Mill. The bark of this species as well as that of *H. sabdaríffa* is full of strong fibres, which the inhabitants of the Malabar coast prepare and make into cordage; and it seems as if it might be wrought into fine strong thread of any size.

Hemp Hibiscus. Fl. June, July. Clt. 1759. Pl. 2 to 5 ft.

58 H. VITIFÒLIUS (Lin. mant. 569.) stem rather prickly; leaves villous, toothed, 5-angled, acuminated; flowers drooping; capsule 5-winged, hairy; involucels 12-leaved. ⊙. S. Native of the East Indies. Cav. diss. 3. p. 145. t. 58. f. 2. Rheed. mal. 6. t. 46. Flowers yellow, with a dark purple centre. Stamens probably purple.

Vine-leaved Hibiscus. Fl. Jul. Oct. Clt. 1690. Pl. 1 to 3 ft.

59 H. divarica'tus (Graham, in edinb. phil. journ. for July, Oct. 1830.) corolla campanulate; involucel 10-parted, glandularly-muricated, shorter than the calyx; stem prickly; leaves roundish, cordate, rather lobed, unequally serrate-toothed, concave, stiff, pubescent on both surfaces. ♄. G. Native of Morton Bay, New Holland. Flowers sulphur-coloured, with a large fine crimson centre. Peduncles axillary, collected at the tops of the branches.

Divaricate-branched Hibiscus. Fl. June, Aug. Clt. 1829. Shrub 3 feet.

60 H. obtusifòlius (Willd. spec. 3. p. 829.) stem rather prickly; leaves tomentose beneath, crenated, cordate, lower ones roundish, upper ones acuminated, 3-lobed, blunt; capsules hairy, 5-winged. ⊙. S. Native of the East Indies. Flower large, yellow, with a purple centre. Resembles *H. vitifòlius*, and with it perhaps will constitute a distinct section, on account of their 5-winged capsules.

Blunt-leaved Hibiscus. Fl. July, Aug. Cl. 1820. Pl. 2 ft.

61 H. pseu'do-abelmo'schus (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 649.) stem perennial, beset with retrograde hispid hairs; leaves palmately 5-lobed, toothed, acuminated, upper ones acuminated, sagittate, pilose on both surfaces as well as the capsule; peduncles shorter than the petiole; involucel 6-10-leaved; calyx cleft longitudinally. ♄. S. Native of Java. Flowers yellow with a dark base.

False-Abelmoschus Hibiscus. Shrub 6 feet.

62 H. cancella'tus (Roxb. hort. beng. p. 31.) stem shrubby, hispid, prurient; leaves 5-lobed, on long petioles, cordate, rather serrated, tomentose; racemes terminal; involucel 12-leaved. ♄. S. Native of Nipaul. H. racemòsus, Lindl. bot. reg. 917. Flowers yellow with a dark purple centre. Very like *H. prùriens*, Roxb.

Latticed-involucelled Hibiscus. Fl. July, Aug. Clt. 1826. Shrub 2 to 4 feet.

63 H. crinìtis; plant setosely hispid; leaves roundish, cordate, acuminated, toothed, obtusely 5-angled, upper ones sagittate; raceme few-flowered; involucel 12-parted, ciliated; segments and stipulas linear, filiform; seeds smooth. ⊙. S. Native of the East Indies on mountains at Prome. Abelmóschus crinìtis, Wall. pl. asiat. rar. t. 44. Flowers large, yellow, with a dark purple centre.

Hairy Hibiscus. Fl. Sept. Oct. Pl. 3 feet.

64 H. hetero'trichus (D. C. prod. 1. p. 450.) stem hairy, intermixed with bristles; leaves cordate, acutely 5-lobed, toothed; upper ones 3-lobed, and are as well as calyxes hairy; pedicels shorter than the petioles; flowers drooping. ♂. S. Native of? Flowers like those of *H. cannábinus*.

Variable-haired Hibiscus. Pl. 2 feet.

65 H. aculea'tus; the whole plant prickly; leaves deeply 3-lobed; lobes serrated; stipulas kidney-shaped; peduncles long, 1-flowered, axillary; leaves of involucel falcate; calyxes ovate, acuminated, pilose. ⊙. S. Native of Sierra Leone in cultivated places. Flowers yellow with a purple centre. Perhaps belonging to this section.

Prickly Hibiscus. Pl. 1 foot.

§ 2. *Stem unarmed.*

* *Annual plants.*

66 H. escule'ntus (Lin. spec. 980.) leaves cordate, deeply 5-lobed, bluntish, toothed; petioles longer than the flowers; involucel of 10-12-linear, ciliated, deciduous leaves; calyxes bursting lengthwise; capsule pyramidal. ⊙. S. Native of both Indies as well as being cultivated in all parts of the world within the tropics and in some parts of France. Cav. diss. 3. t. 61. f. 2. F.—Sloane, hist. 1. p. 223. t. 133. f. 3. Flowers sulphur-coloured with a dark centre. Capsule pyramidal, furrowed, eatable. The young pods of the *okro* are gathered green and used in soups, or pickled like capers. They are full of nutritive mucilage, and buttered and spiced make a very rich dish. The seeds may be boiled like barley. There are several species of *Hibiscus* cultivated under the name of *Okro* differing much in the shape of their pods.

Esculent Okro. Fl. June, July. Clt. 1692. Pl. 2 to 4 feet.

67 H. Ba'mmia (Link. enum. 2. p. 227.) leaves 5-lobed, crenated; petioles longer than the flowers; involucel of 10-12 linear deciduous leaves; calyx bursting lengthwise; capsule long; stigmas 6-10. ⊙. S. Native of Africa, where we have seen it cultivated with the *okro* or *H. esculéntus*; it is called *the autumnal okro*, and the young pods are used to make okro soup. Cav. diss. 3. p. 168. t. 61. f. 3. Toz. mus. fir. 2. p. 57. t. 7. Bámmia, Alp. ægyp. p. 28. Flowers sulphur-coloured with a dark centre. It differs from *H. esculéntus* in the leaves not being so deeply lobed, and in the pods being much longer.

Bammia or African Okro. Fl. June, July. Clt. 1818. Pl. 2 to 4 feet.

68 H. longiflòrus (Willd. spec. 3. p. 827.) leaves palmately 3-5-parted, with deeply toothed lanceolate lobes; petioles longer than the flower; involucels usually 10-leaved, deciduous; calyxes bursting lengthwise. ⊙. S. Native of the East Indies. Flower yellow, with a dark centre.

Long-flowered Hibiscus. Fl. July, Oct. Clt. 1817. Pl. 4 ft.

* *Perennial herbaceous plants.*

69 H. moscheu'tos (Lin. spec. 975.) leaves ovate, acuminated, serrated, downy beneath; petioles and peduncles joined together; involucels and calyxes downy; capsules smooth. ♃. H. Native of North America in swamps and salt-marshes, from New York to Carolina; plentifully in the marshes round the salt lake Onondago, New York. Flowers large, white, with a purplish centre, or sometimes pale purple. Cav. diss. 3. t. 65. f. 1. Sweet, fl. gard. t. 286. H. palústris, Sims, bot. mag. t. 882.

Mallow Rose or *Musk* Hibiscus. Fl. Aug. Oct.? Pl. 3 feet.

70 H. palu'stris (Lin. spec. 976.) leaves ovate, toothed, somewhat 3-lobed, hoary with down beneath; pedicels axillary, free from the petioles, jointed above the middle. ♃. H. Native of North America in swamps and marshes, from Canada to Carolina. Cav. diss. 3. t. 65. f. 2. Flowers large, rose-coloured, white, and yellowish.

Marsh Hibiscus. Fl. Aug. Oct. Clt. 1759. Pl. 2 to 3 ft.

71 H. ròseus (Thor. in Lois. fl. gall. 2. p. 434.) leaves cordate, toothed, somewhat 3-lobed, hoary from down beneath; pedicels axillary, free from the petioles, 1-flowered, and jointed above the middle. ♃. H. Native of France on the banks of the river Adour. Sweet, fl. gard. 277. Flowers rose-coloured.

Rose-coloured-flowered Hibiscus. Fl. July, Oct. Pl. 2 to 4 ft.

72 H. aqua'ticus (D. C. fl. fr. suppl. 627.) leaves ovate, toothed, somewhat 3-lobed, hoary from down beneath; pedicels axillary, 1-flowered, free from the petioles, jointed near the base. ♃. H. Native of Etruria in marshes. Flowers white. H. palústris, Sav. cent. 1. p. 126.

Water Hibiscus. Fl. July, Sep. Clt. 1819. Pl. 2 to 3 feet.

73 H. inca'nus (Willd. spec. 3. p. 807.) leaves ovate, acuminated, bluntly serrated, hoary from down on both surfaces; pedicels axillary, 1-flowered, free from the petioles, jointed about the middle. ♃. H. Native of Carolina. Wendl. hort. herrench. 4. t. 24. Flowers very large, sulphur-coloured.

Hoary Hibiscus. Fl. Sep. Clt. 1806. Pl. 2 to 4 feet.

74 H. milita'ris (Cav. diss. 6. p. 352. t. 198. f. 2.) leaves 3-lobed, halbert-shaped, acuminated, serrated, smooth on both surfaces; pedicels jointed in the middle; corolla rather campanulate; capsules ovate, acuminated, smooth; seeds silky. ♃.

F. Native of North America on the banks of rivers in Louisiana and the western parts of Pennsylvania and Carolina. Sims, bot. mag. t. 2385. Cav. diss. 6. t. 198. f. 2. H. læ'vis, Scop. del. 3. t. 17. H. Virgínicus, Walt. fl. carol. 177. H. hastàtus, Mich. fl. bor. amer. 2. p. 45. H. ripàrius, Pers. ench. 2. p. 254. Flowers large, purple. Perhaps this plant belongs to section *Bombicélla*, on account of the seeds being silky.

Military Hibiscus. Fl. Aug. Sep. Clt. 1804. Pl. 3 to 4 ft.

75 H. speciòsus (Ait. hort. kew. ed. 2. p. 456.) leaves smooth, palmately 5-parted, with lanceolate-acuminated lobes, which are serrated at the apex; pedicels jointed under the apex; corolla spreading; capsule ovate, smooth, 5-angled. ♃. F. Native of North America on the banks of rivers in South Carolina and Florida. Curt. bot. mag. t. 360. Wendl. hort. herrench. t. 11. H. coccíneus, Walt. fl. car. p. 177. Flowers very large, scarlet.

Handsome Hibiscus. Fl. Aug. Sept. Clt. 1804. Pl. 2 to 8 ft.

76 H. grandiflòrus (Michx. fl. bor. amer. 2. p. 46.) leaves triangular, cordate, 3-lobed, coriaceous, clothed with fine tomentum on both surfaces, hoary beneath; capsules tomentose, very hairy, somewhat truncate. ♃. F. Native of North America in salt marshes in Georgia and Florida, and on the banks of the Mississippi. Flowers very large, flesh-coloured, with a darker centre. The fruit is yellow.

Great-flowered Hibiscus. Fl. Aug. Oct. Clt. 1778. Pl. 3 to 4 feet.

77 H. unicau'lis (D. C. ex Spreng. syst. app. p. 258.) stem simple, very villous; leaves cordate, roundish, angular, sinuately-denticulated, hairy above, but white from villi beneath; peduncles solitary, shorter than the petioles; leaflets of involucel spatulate, equal with the calyx; capsule very hispid. ♃. G. Native of? Perhaps shrubby.

One-stemmed Hibiscus. Pl. 2 to 3 feet?

78 H. fu'gax (Mart. ex Spreng. syst. 2. app. 258.) leaves almost sessile, oblong, acuminated, tomentose beneath, as well as the branches; peduncles 1-flowered, shorter than the leaves. ♃? ♄? S. Native of Brazil.

Fugacious Hibiscus. Pl. 2 to 4 feet.

* * * *Shrubby species.*

79 H. si'mplex (Roxb. hort. beng. p. 51.) arboreous, smooth; leaves 3-lobed, acuminated; middle lobe longest; peduncles axillary, solitary, longer than the petioles; involucel 8-9-leaved, shorter than the calyx; leaflets lanceolate; capsule hispid; globose. ♄. S. Native of the East Indies. Flowers shewy, red.

Simple Hibiscus. Tree.

80 H. lasioca'rpus (Cav. diss. 3. p. 159. t. 70. f. 1.) leaves ovate-lanceolate, acute, serrated, tomentose; pedicels axillary; calyx tomentose; involucel ciliated; capsule bristly. ♄. S. Native of? Involucel usually of 13 leaflets.

Hairy-fruited Hibiscus. Shrub 10 feet.

81 H. ferrugi'neus (Cav. diss. 3. p. 162. t. 60. f. 1.) leaves cordate, obtuse, toothed, scabrous; pedicels axillary, longer than the petioles; stem clothed with rusty down; capsule setose. ♄. S. Native of Madagascar. Flowers reddish, about the size of those of *H. Triònum*.

Rusty-stemmed Hibiscus. Clt. 1824. Shrub 10 feet.

82 H. sulphu'reus (H. B. et Kunth, nov. gen. amer. 5. p. 289.) leaves oblong, blunt at both ends, quite entire, smoothish above, hoary from tomentum beneath; involucel 10-leaved, shorter than the calyx; cells of ovary usually 5-seeded; stigmas many, capitate. ♄. S. Native of Caraccas. Flowers sulphur-coloured, with a purple centre.

Var. β, *acutifòlius* (D. C. prod. 1. p. 451.) leaves larger, acute; capsules somewhat globose, acute, clothed with silky hairs. ♄. S. Native of New Andalusia on mount Cocollar.

Sulphur-coloured-flowered Hibiscus. Shrub 4 to 8 feet.

83 H. affi'nis (H. B. et Kunth, l. c.) leaves oblong, acute, blunt at the base, quite entire, hairy above, but hoary from tomentum beneath; involucel 9 or 10-leaved, equal in length to the calyx; cells of ovary 4 or 5-seeded. ♄. S. Native of South America between Angustura and Trapiche de Farreras. Flowers sulphur-coloured, with a purple centre. Style 3-5 cleft.

Allied Hibiscus. Shrub 3 to 6 feet.

84 H. Cavanillesia'nus (H. B. et Kunth, l. c.) leaves somewhat rhomboidal, ovate-oblong, acuminated, acute at the base, coarsely serrated, hairy on both surfaces from starry down; cells of ovary usually 4-seeded; style 5-cleft. ♄. S. Native on the banks of the river Amazon near Tomependa. Flowers violet-coloured. Capsules depressed, ovate.

Cavanilles's Hibiscus. Shrub 3 to 6 feet.

85 H. lunarifòlius (Willd. spec. 3. p. 811.) leaves roundish, cordate, acuminated, sharply toothed, hairy beneath; pedicels thickened, villous; involucel length of calyx. ♃. S. Native of the East Indies. Flowers the size and colour of those of *H. Mánihot*. Involucel of 10 linear leaves.

Lunaria-leaved Hibiscus. Pl. 3 to 6 feet.

86 H. Brasilie'nsis (Lin. spec. 977.) leaves cordate, toothletted; branches, petioles, pedicels, and calyxes hairy; involucel twice as long as the calyx. ♄. S. Native of Brazil. Resembles *H. mutábilis*. Flowers yellow. Involucel 8-leaved.

Brazilian Hibiscus. Shrub 3 feet.

87 H. Æthio'picus (Lin. mant. 258.) leaves wedge-shaped, generally 5-toothed, covered with starry hairs; pedicels longer than the leaves; involucel 8 or 10-leaved, hispid. ♄. G. Native of the Cape of Good Hope. Cav. diss. 3. t. 6. f. 1. Plant smelling of musk. Flowers about the size of those of a strawberry, perhaps purple.

Æthiopian Hibiscus. Fl. June, July. Clt. 1774. Shrub 1 ft.

88 H. microphy'llus (Vahl. symb. 1. p. 50.) leaves oval, hairy, serrated in front, somewhat 5-nerved; pedicels length of leaves; involucel of 9-10 setaceous leaflets, longer than the calyx. ♄. G. Native of Arabia Felix. H. flàvus, Forsk. descr. 126. Stamens 10-16. Stigmas 10. Flowers yellow.

Small-leaved Hibiscus. Shrub 1 foot.

89 H. velutìnus (D. C. prod. 1. p. 452.) leaves cordate, bluntly-toothed, soft, hoary and velvety on both surfaces; stem suffruticose; pedicels a little longer than the petioles; involucel of 8-10 linear leaflets, which are rather broadest at the apex; capsules roundish, hispid. ♄. S. Native of the island of Timor.

Velvety-leaved Hibiscus. Clt. 1818. Shrub 4 to 6 feet.

90 H. soròrius (Lin. fil. suppl. 311.) leaves cordate, crenated, scabrous; stem suffruticose, hairy; involucel of 10 terete leaflets, which are dilated at the apex. ♄. S. Native of Surinam. Corolla as in *H. Mánihot*.

Sister Hibiscus. Shrub 3 feet.

91 H. Guinee'nsis; stem erect, branched, pilose; leaves trifid or 5-lobed, serrated, subcordate, beset with forked hairs beneath; flowers racemose; peduncles short, pilose. ♄. S. Native of Guinea. Corolla large, yellow. Perhaps belonging to this section.

Guinea Hibiscus. Fl. June, Aug. Shrub 6 feet.

92 H. muta'bilis (Lin. spec. 977.) leaves cordate, angular, 3-5-lobed, acuminated, toothed, and are as well as the branches rather downy; pedicels almost the length of the leaves; involucel 7-10-leaved; lobes of calyx elongated, 5-nerved. ♄. S. Native of the East Indies. Cav. diss. 3. t. 62. f. 1. And. bot. rep. 228. H. Sinénsis, Mill. dict. no. 2.—Rumph. amb. 4. p. 27. t. 9.—Rheed. mal. 6. p. 66. t. 38—41. Flowers white in the morning, changing to a flesh-colour towards noon, but becoming rose-coloured towards the evening, usually double, resembling

those of a *Hollyhock*. This plant is often cultivated in gardens within the tropics for the beauty of its flowers.

Changeable-flowered Hibiscus. Fl. Oct. Dec. Clt. 1690. Shrub 12 feet.

93 H. ADSCE'NDENS; suffruticose; branches ascending, pilose; leaves 3-5-lobed; lobes acute, serrated, tomentose beneath; peduncles solitary, long; calyx pilose. ♄. S. Native of Guinea. Flowers large, yellow. Perhaps belonging to section *Furcària*, but the involucel is unknown.

Ascending Hibiscus. Shrub 3 feet, straggling.

94 H. CUCURBITA'CEUS (St. Hil. fl. bras. 1. p. 244.) shrubby, hairy, unarmed; leaves roundish, cordate, dentately-serrated, stellately-pubescent; involucel of 12 awl-shaped leaflets, much shorter than the calyx, which is 5-glanded; cells of ovary 4-ovulate. ♄. S. Native of Brazil in the western part of the province of Minas Geraes. Flowers rose-coloured.

Var. β, cuneifòlius (St. Hil. l. c.) leaves cuneated at the base.

Gourd-like Hibiscus. Fl. Sept. Shrub 1 to 2 feet.

95 H. LAXIFLÒRUS (St. Hil. fl. bras. 1. p. 245.) stem herbaceous? scabrous, unarmed; leaves cordate, roundish or cuneate-ovate, denticulated, rough; involucel 8-9-leaved, awl-shaped, much shorter than the calyx, which is 5-glanded; cells of ovary 7-ovulate. ♄. S. Native of Brazil in the province of Goyaz. Flowers purplish, but with a pale flesh-coloured centre.

Lax-flowered Hibiscus. Fl. June. Shrub 4 to 6 feet.

96 H. CLYPEA'TUS (Lin. spec. 980.) leaves cordate, angular, sparingly toothed, smoothish; branches velvety; pedicels longer than the petioles; involucel 8-9-leaved; lobes of calyx oval-oblong, 3-nerved; capsules turbinate, truncated, hispid. ♄. S. Native of Jamaica in bushy places, and of St. Domingo. Cav. diss. 3. t. 58. f. 1.—Sloan. jam. hist. 1. t. 135. f. 1. Flowers dusky-yellowish. This plant is called by the negroes in Jamaica *Congo-Mahoe*. Perhaps originally from Africa.

Shield-capsuled Hibiscus. Fl. July, Aug. Clt. 1759. Shrub 8 feet.

97 H. ABELMÓSCHUS (Lin. spec. 980.) leaves somewhat peltate, cordate, 5-7-angled, acuminated, serrated; stem hispid; pedicels usually longer than the petioles; involucel 8-9-leaved; capsules conical, covered with bristles. ♄. S. Native of the East Indies and South America. Cav. diss. 3. t. 62. f. 2.—Margr. bras. 45. t. 45.—Mer. surin. 42. t. 42.—Rumph. amb. 4. p. 38. t. 15. Rheed. mal. 2. p. 71. t. 38. Flowers sulphur-coloured, with a dark-purple centre. *Abelmoschus* is derived from the Arabic *Kabb-el-Misk*, grain or seed of musk. It has large seeds of a very musky odour, which are frequently used as a substitute for animal musk in scenting powders and pomatums. In Arabia and Egypt they are ground and mixed with coffee to render it more agreeable to the palate.

Musk Okro Hibiscus. Fl. July, Sep. Clt. 1640. Shrub 6 to 8 feet.

98 H. ERIOCA'RPUS (D. C. prod. 1. p. 452.) leaves smooth, ovate at the base, 5-nerved, 3-lobed; lobes acuminated, entire; pedicels longer than the petioles; involucel of 8 or 9 oblong, waved, somewhat toothed, leaflets; capsules sub-globose, very hispid both on the inside and outside. ♄. S. Native of Bengal. Flowers yellow, with a dark centre?

Woolly-fruited Hibiscus. Fl. July, Aug. Clt. 1823. Shrub 6 to 10 feet.

99 H. QUINQUE'LOBUS; leaves cordate, 5-lobed, rough; lobes acuminated, toothed, on long petioles; flowers in terminal spiked racemes. ♄. S. Native of Sierra Leone. Habit of *H. mutábilis*. Flowers yellow. Perhaps belonging to this section, but the involucel and seeds are unknown.

Five-lobed-leaved Hibiscus. Shrub 6 feet.

100 H. DOMINGE'NSIS (Jacq. icon. rar. 3. t. 550.) leaves 3-5-lobed, toothed; stem arboreous, prickly; pedicels unarmed, hairy; involucel usually of 12 setaceous leaflets; calyx flattened at the base. ♄. S. Native of St. Domingo. Flowers large, rose-coloured, with a darker centre.

St. Domingo Hibiscus. Shrub 10 feet.

101 H. STRIA'TUS (Cav. diss. 3. p. 146. t. 54. f. 1.) leaves 3-lobed, halbert-shaped, serrated, smooth; stem and pedicels prickly; involucel of 8-10 setaceous leaflets; calyx ovate at the base. ♄. S. Native of? Flowers yellow. H. Domingénsis var. striàtus, Willd. spec. 3. p. 820.

Striated-stemmed Hibiscus. Shrub 6 feet.

102 H. VENU'STUS (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 650.) shrubby; leaves roundish-cordate, half-3-lobed, acute, grossly toothed, velvety above from stellate hairs, tomentose beneath, as well as the branches, and mixed with stellate bristles; peduncles shorter than the petioles; involucel usually 5-leaved; leaflets ovate, acute, equal in length to the capsule; capsule ovate-globose, 5-angled, hispid. ♄. S. Native of Java. Flowers single or double, white or yellow, changeable? Like *H. mutábilis*.

Beautiful Hibiscus. Shrub 12 feet.

SECT. VII. BOMBICE'LLA (from *βομβυξ, bombyx*, one of the Greek names of cotton; in allusion to the cottony seeds.) D. C. prod. 1. p. 452. Bómbyx, Medik. malv. p. 44. Cells of capsule many-seeded. Seeds woolly or cottony. Corollas usually expanded. Involucel 5 to 12-leaved.

103 H. SALVIÆFÒLIUS (St. Hil. fl. bras. 1. p. 249.) shrubby, pruinosely-pubescent, unarmed; leaves ovate-lanceolate, dentately-serrated, hoary-tomentose beneath; involucel of 12-linear-acute leaflets, 3-times shorter than the calyx; cells of ovary many-ovulate. ♄. S. Native of Brazil. Flowers rose-coloured. Seeds woolly.

Sage-leaved Hibiscus. Fl. May. Shrub 6 feet.

104 H. PHŒNI'CEUS (Lin. fil. suppl. 310. Willd. spec. 3. p. 813.) leaves ovate, acuminated, serrated, lower ones somewhat cordate, 3-lobed; pedicels jointed under the middle; involucel 10-leaved, shorter than the calyx. ♄. S. Native of the East Indies. Flowers purplish. Ker, bot. reg. t. 230. Jacq. vind. t. 4. Cav. diss. 3. t. 67. f. 2. Serratures of leaves bristly.

Purple-flowered Hibiscus. Fl. July, Aug. Clt. 1796. Shrub 6 feet.

105 H. BETULI'NUS (H. B. et Kunth, nov. gen. amer. 5. p. 292.) plant herbaceous, branched; leaves deltoid-ovate, acute, rounded at the base, crenately-serrated, a little hairy on both surfaces; involucel 9-11-leaved; capsules rather globose, with few-seeded cells. ♃. S. Native near Cumana in South America. Flowers white.

Birch-like Hibiscus. Pl. 2 to 3 feet.

106 H. UNILATERA'LIS (Cav. diss. 3. p. 158. t. 67. f. F. c.) leaves ovate, acuminated, toothed; pedicels longer than the leaves, jointed above the middle; involucel 9-leaved; stamens unilateral. ♄. S. Native of St. Domingo. Plum. ed. Burm. t. 160. f. 1. Flowers scarlet. H. columbìnus, Moc. et Sesse, fl. mex. icon. ined. is the same in every particular, but the stamens are not unilateral.

Unilateral-stamened Hibiscus. Shrub 4 feet.

107 H. RHOMBIFÒLIUS (Cav. diss. 3. p. 156. t. 69. f. 3.) leaves, rhomboidal-ovate, undivided, crenated at the apex, acuminated; pedicels very short; involucel 7-leaved. ♄. S. Native of the East Indies. Flowers purple.

Rhomb-leaved Hibiscus. Fl. June, Aug. Clt. 1823. Sh. 6 ft.

108 H. GOSSYPI'NUS (Thunb. prod. 118.) leaves ovate, serrated; petioles and stems hispid; pedicels jointed above the middle, hairy, a little longer than the leaves; involucel small, 7-leaved. ♄. S. Native of the Cape of Good Hope. Burch. cat. no. 2364.? Flowers purple?

Cottony-seeded Hibiscus. Fl. Jul. Aug. Clt. 1818. Sh. 4 ft.

109 H. ROSA-MALABA'RICA (Kon. ex Spreng. syst. 3. p. 105.) branches hairy; leaves cordate, somewhat 3-lobed, serrated; peduncles elongated, equal; leaflets of involucel 5-6, linear, equal in length to the calyx. ♄. S. Native of Malabar. Ker. bot. reg. t. 337. H. hírtus, Lin. spec. 977. Cav. diss. 3. t. 67. f. 3. Flowers bright red, and also white.

Malabar-rose. Shrub 2 to 4 feet.

110 H. MICRA'NTHUS (Cav. diss. 3. p. 155. t. 66. f. 1.) leaves ovate or roundish, undivided, serrated, scabrous; pedicels longer than the leaves; corollas reflexed; involucel 7-leaved. ♄. S. Native of the East Indies. H. micránthus and H. rígidus, Lin. fil. suppl. 308 and 310. according to Ait. hort. kew. ed. 2. vol. 4. p. 226. Flowers yellow, small.

Small-flowered Hibiscus. Fl. Ju. Jul. Clt. 1794. Sh. 1 to 2 ft.

111 H. SPATHA'CEUS (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 650.) leaves orbicularly-cordate, acuminated, denticulated, clothed with stellate villi beneath; branches covered with fascicles of hairs; involucel 8-10-parted. ♄. S. Native of Java.

Spathaceous Hibiscus. Shrub 2 feet.

112 H. CLANDESTI'NUS (Cav. icon. 1. p. 1. t. 2.) leaves ovate, somewhat cordate, toothed, roughish; lower ones obsoletely 3-lobed; pedicels jointed under the apex, length of leaves; involucel 6-leaved; calyx enclosing the petals. ♄. S. Native of Senegal. Flowers whitish, becoming violet as they wither.

Clandestine Hibiscus. Fl. July, Aug. Clt. 1823. Sh. 3 ft.

113 H. OVALIFÒLIUS (Vahl. symb. 1. p. 50.) leaves oval and rather angular, hispid; stem scabrous from starry hairs; involucel 5-leaved. ♄. G. Native of Arabia Felix on mountains. Urèna ovalifòlia, Forsk. descr. 124. Flowers yellow, with a dark centre, about the size of those of *H. vitifòlius*.

Oval-leaved Hibiscus. Shrub 6-10 feet.

114 H. VIRGA'TUS (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 650.) leaves linear-lanceolate, acuminated, remotely-toothed above, lower ones cuneiform-ovate, 3-lobed; peduncles shorter than the leaves, jointed above the middle; involucel 8-10-leaved. ♄. S. Native of Java. Flowers yellow?

Twiggy Hibiscus. Shrub 4 feet.

SECT. VIII. TRIO'NUM (*τριονον, trionon*, a name applied by Theophrastes to a Malvaceous plant, said to be derived from *τρεις, treis*, three; from the 3 divisions of the leaf or from the 3 colours of the flowers). Medik. malv. p. 46. D. C. prod. 1. p. 453. Cells of capsule many-seeded. Seeds smooth. Corolla expanded. Involucel many-leaved. Calyx bladdery, inflated, full of nerves.

115 H. TRIO'NUM (Lin. spec. 981.) leaves toothed, lower ones almost undivided, upper ones 3-parted; lobes lanceolate, with the middle one very long; calyx inflated, membranaceous, full of nerves. ⊙. H. Native of Italy and Carniola. Flowers cream-coloured with a dark-purple centre. Cav. diss. 3. t. 64. f. 1. Curt. bot. mag. t. 209.

Three-coloured-flowered or Bladder Ketmia. Fl. June, Sept. Clt. 1596. Pl. $\frac{1}{2}$ to $1\frac{1}{2}$ foot.

116 H. HI'SPIDUS (Mill. dict. no. 21.) leaves toothed, lower ones 3-lobed, upper ones 5-parted, blunt; lobes lanceolate, with the middle one longest; calyxes inflated, membranaceous, full of nerves; stem hispid. ♄. G. Native of the Cape of Good Hope. Ker. bot. reg. t. 806. H. Triònum, var. *γ*, híspidus, D. C. prod. 1. p. 453. Flowers yellow, with a dark-brownish purple centre.

Var. β, ternàtus (Cav. diss. 3. p. 172. t. 64. f. 3.) leaves nearly all 3-parted, with coarsely-toothed lobes; pedicels scarcely longer than the petioles; stem dwarf. Native of the Cape of Good Hope

Var. δ, cordifòlius (Mœnch. suppl. 202. under *Triònum*,) radical leaves cordate, roundish, upper ones 3-parted. H. Africànus, Roth. beitr. 1. p. 43.

Hispid-stemmed Ketmia. Fl. Jul. Oct. Clt. 1713. Sh. 1 to 2 ft.

117 H. TRIONOÌDES; stem shrubby, hispid; leaves 3-5-lobed, middle lobe very long, all unequally toothed; calyx inflated. ♄. G. Native of New Holland (Caley). Flowers yellowish with a dark centre. A weak shrub.

Trionum-like Ketmia. Shrub 1 foot.

118 H. HUMBO'LDTII (Mart. mss. Coll. hort. rip. p. 350.) radical leaves almost undivided and cordate, upper ones more or less parted. ♄. G. Native of the Cape of Good Hope. Perhaps H. hispídus var. *δ*, cordifòlius, D. C. prod. 1. p. 453. Flowers sulphur-coloured, with a dark centre.

Humboldt's Ketmia. Pl. 3 to 4 feet.

119 H. VESICA'RIUS (Cav. diss. 3. p. 171. t. 62. f. 2.) leaves toothed, lower ones undivided, upper ones 5-cleft with oblong, blunt lobes; calyx inflated, membranaceous, full of nerves. ⊙. H. Native of Africa. H. Africànus, Mill. dict. no. 20. Flowers yellow with a dark-brownish purple centre.

Bladdery-calyxed Ketmia. Fl. June, Sept. Clt. 1713. Pl. $\frac{1}{2}$ to $1\frac{1}{2}$ foot.

120 H. RICHARDSÒNII (Sweet, hort. brit. 1. p. 51. Lindl. bot. reg. t. 875.) suffruticose; leaves hairy, 5-lobed; lobes linear-oblong, coarsely toothed; calyx villous, longer than the involucrum; peduncles axillary, 1-flowered, shorter than the leaves, or in terminal racemes. ♄. G. Native of New South Wales. Corolla yellow, with a purple bottom.

Richardson's Ketmia. Fl. June, Aug. Shrub 3 to 4 feet.

SECT. IX. SABDARI'FFA (a name given by the Turks to *H. sabdaríffa*). D. C. prod. 1. p. 453. Cells of capsule many-seeded. Seeds smooth. Involucel 1-leaved, many-toothed, joined together at the base, or even to the middle and with the calyx. Annual plants with smooth, thickish leaves. This section nearly agrees in character with the following genus *Parítium*.

121 H. SABDARI'FFA (Lin. spec. 978.) leaves fleshy, toothed, lower ones ovate, undivided, middle ones 3-lobed, cuneated at the base; flowers almost sessile; involucel 10-12-lobed. ⊙. S. Native of the East Indies. Cav. diss. 3. t. 198. f. 1. Bonpl. nav. t. 29. Lois. herb. amat. t. 296. Stems unarmed, smooth, red. Flowers sulphur-coloured with a dark-red centre. The name of this plant in the West Indies is *Red-sorrel*. The calyxes and the capsules, freed from the seeds, make very agreeable tarts; and a decoction of them, sweetened and fermented, is commonly called sorrel cool-drink. It is a small diluting liquor much used in our sugar colonies, and reckoned very refreshing in those sultry climates. The leaves are used in salads. *Sabdariffa* is the Turkish name for this plant.

Sabdariffa or Red-sorrel. Fl. June, Sept. Clt. 1596. Pl. 1 to 3 feet.

122 H. DIGITA'TUS (Cav. diss. 3. p. 151. t. 70. f. 2.) leaves palmately 5-parted, with lanceolate serrated lobes; petioles muricated; flowers almost sessile, solitary; involucel 7-cleft. ⊙. S. Native of Brazil. Flowers white, with a dark-red centre.

Var. β, Kerriànus (D. C. prod. 1. p. 453.) leaves variable, some of them 3-5-cleft, others ovate, undivided, toothed. ⊙. S. Native of Brazil at Rio Janeiro. H. digitàtus, Ker. bot. reg. t. 608. Flowers white with a red centre as well as being red on the outside. Perhaps a distinct species from the plant of Cavanilles.

Digitate-leaved Hibiscus. Fl. Jul. Sept. Clt. 1816. Pl. 2 ft.

† *Species not sufficiently known.*

123 H. DIGITIFÓRMIS (D. C. prod. 1. p. 454.) leaves digitate, usually of 9 equal very narrow lobes, somewhat pubescent; petioles clothed with cinereous down. ♄. S. Native of? H.

digitàtus, Poir. suppl. 3. p. 220. but not of Cav. Flowers yellow with a purple centre.

Finger-shaped-leaved Hibiscus. Shrub 3 feet.

124 H. flabella'tus (Poir. suppl. 3. p. 220.) shrub spiny; leaves fan-shaped, 5-parted, very smooth; lobes lanceolate, serrated. ♄. G. Native of New Holland. Flowers yellow?

Fan-leaved Hibiscus. Shrub.

125 H. spica'tus (Cav. diss. 3. p. 163. t. 59. f. 1.) leaves 5-lobed, obtuse, downy; flowers sessile, disposed in a long terminal spike. ♄. S. Native of? Perhaps a species of *Althæ'a*.

Spike-flowered Hibiscus. Shrub.

126 H. flave'scens (Cav. diss. 3. p. 164. t. 70. f. 3.) leaves 5-lobed, palmate, unequally toothed, hairy; stems and petioles unarmed. ♄. S. Native of Pondicheri. Flowers yellowish.

Yellowish-flowered Hibiscus. Shrub 3 to 6 feet.

127 H. fascicula'tus (Moc. et Sesse, fl. mex. icon. ined. D.C. prod. 1. p. 454,) leaves villous, palmately 5-cleft with toothed lobes, ultimate one longest; pedicels crowded in the axillæ of the leaves, one of which is longer than the others. ♄. S. Native of Mexico.

Bundled-pedicelled Hibiscus. Shrub 3 to 4 feet.

128 H. tripartìtus (Forsk. descr. p. 126.) leaves 3-parted, with lanceolate, serrated lobes; peduncles axillary, 4-times shorter than the fruit; stem and calyx prickly; capsules hairy. ♄. G. Native of Arabia and Egypt.

Three-parted-leaved Hibiscus. Shrub?

129 H. acetosæfòlius (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 455.) hispid; leaves deeply 3-parted with oblong, acute, toothed lobes, 2 lateral ones short, erect, middle one very long; pedicels axillary, 1-flowered. ⊙. S. Native of Mexico.

Sorrel-leaved Hibiscus. Fl. June, July. Pl. 2 feet.

130 H. frate'rnus (Lin. fil. suppl. 311.) shrub smooth; leaves 3-lobed; rays of involucel terete, mucronate-concave at the apex; capsules pubescent. ⊙. S. Native of Surinam. Flowers yellow. Merian. Surin. t. 37. Perhaps the same as *H. sabdaríffa*.

Brotherly Hibiscus. Pl. 1 to 2 feet.

131 H. Borbo'nicus (Link. enum. 2. p. 216.) leaves cordate-roundish, somewhat lobed, unequally and sharply toothed, tomentose beneath; involucel of 5 oblong, long-pointed leaflets, which taper towards the base. ♄. S. Native of the Island of Bourbon. Flowers large, yellow.

Bourbon Hibiscus. Fl. July, Aug. Clt. 1820. Shrub 10 ft.

132 H. tomentòsus (Mill. dict. no. 5.) leaves cordate, angled, serrated, tomentose; stem arboreous; capsules hairy, 5-horned. ♄. S. Native of the West Indies. Flowers yellow, but becoming purplish as they decay. Perhaps a species of *Parítium*.

Tomentose-leaved Hibiscus. Tree 80 feet.

133 H. bracteo'sus (Moc. et Sesse, fl. mex. icon. ined. D.C. prod. 1. p. 455.) leaves cordate, somewhat orbicular, mucronate, entire; stipulas large, ovate, upper ones in the form of bracteas; involucel 5-leaved. ♄. S. Native of Mexico. Flowers yellow. Resembles *H. tiliàceus*. Perhaps a species of *Parítium*.

Large-bracted Hibiscus. Tree 30 feet.

134 H. oxyphy'llus (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 455.) smooth; leaves cordate, toothed, acuminated; involucel of 5 spreading, linear leaflets, which are dilated at the apex, longer than the calyx. ♄? S. Native of Mexico on the mountains of Xochipico. Flowers white, with a flesh-coloured centre.

Sharp-leaved Hibiscus. Shrub.

135 H. cyano'gynus (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 455.) hispid; leaves cordate, acute, toothed; peduncles axillary, many-flowered, upper ones rather panicled; involucel many-leaved, spreading. ♄? S. Native of Mexico.

Blue-stigmaed Hibiscus. Shrub.

136 H. Bahame'nsis (Mill. dict. no. 14.) leaves smooth, hoary beneath, oblong, cordate, toothed, on long petioles; flowers subterminal, very large, pale-purple. ♃. G. Native of the Bahama islands.

Bahama Hibiscus. Pl. 2 feet.

137 H. purpu'reus (Forsk. descr. p. 126.) leaves cordate, oblong, acute, serrated; stigmas 5, long, capitate; capsules globose, 7-winged. ♄? G. Native of Arabia. Flowers purple.

Purple-flowered Hibiscus. Shrub.

138 H. panduræfo'rmis (Burm. ind. p. 151. t. 47. f. 2.) leaves cordate, lanceolate, toothletted, tomentose; stem herbaceous, hairy; involucel 8-leaved. ♄. S. Native of the East Indies. Flowers sulphur-coloured. Perhaps *H. tubulòsus*.

Fiddle-shaped-leaved Hibiscus. Shrub.

139 H. parvifo'rus (Weinm. in flora. 1820. p. 610.) stem shrubby, hispid; leaves cordate, angular, crenated, tomentose beneath; involucel 9-leaved; leaflets dilated at the apex. ♄. S. Native of America. Petals small, hispid on the outside, of a dirty-yellowish colour with 5 reddish spots. Resembles *H. Senegalénsis* and *H. tubulòsus*.

Small-flowered Hibiscus. Fl. July, Aug. Clt. 1823. Shrub 4 feet.

140 H. Chine'nsis (D. C. prod. 1. p. 455.) smooth; leaves ovate, acuminated, toothed; pedicels axillary, 1-flowered, longer than the petioles; involucel of 6-8 bristle-like leaves. ♄. G. Native of China. Braam. icon. chin. 1821. t. 24. Flowers white. Resembles *H. phœníceus*.

Chinese Hibiscus. Shrub 4 feet.

141 H. cucurbiti'nus (Burch. cat. geogr. no. 1481. voy. 1. p. 278.) plant trailing, tomentose; leaves roundish, repand, less downy above; flowers crowded, racemose, axillary. ⊙? G. Native of the Cape of Good Hope near Dwaal river. Corolla brown, campanulate, hardly longer than the calyx. It is called by the Hottentots *Wilde Kalebas*.

Gourd-like Hibiscus. Pl. trailing.

There are several other species of *Hibíscus* which are only known by name, viz. *H. setòsus*, Roxb. *H. tortuòsus*, Roxb. *H. truncàtus*, Roxb. *H. Chinénsis*, Roxb. *H. stríctus*, Roxb. *H. pentaphýllus*, Roxb. *H. fràgrans*, Roxb. *H. tetraloculàris*, Roxb. and *H. pùmilis*, Roxb.

Cult. The species are all showy-flowering plants. The shrubby stove kinds thrive best in a mixture of loam and peat. Cuttings will strike root readily in sand or mould under a hand-glass, in heat. The green-house shrubby species require nearly the same treatment as the stove kinds. The annual stove species should be sown in pots and placed in a hot-bed frame, and when the plants are of sufficient size they should be separated and planted singly in pots, in a mixture of loam and peat; and after they have recovered this shifting they should be removed to the stove, where they may remain until they have ripened their seed. The *H. Syrìacus* or *Althæ'a frutex* is the only hardy shrubby species. It will thrive well in any common garden-soil, and may be either raised in abundance from seeds or layers. The different varieties of this plant may be grafted on each other, and cuttings planted under a hand-glass will strike root freely. The hardy herbaceous species, which are very showy, chiefly belong to section *Abelmóschus*, thrive best in a moist soil, but being rather tender most of them require protection in severe winters; they are only to be increased by dividing the plants at the root in spring.

XIV. PARI'TIUM (*Pariti* is the Malabar name of *P. tiliàceum*). St. Hil. fl. bras. 1. p. 255. Paríti, Adans. Hibíscus, sect. x. Azánza, D. C. prod. 1. p. 454.

Lin. syst. *Monadélphia, Polyándria*. Calyx girded by a 10-

14-toothed or 10-14-cleft involucel, shorter than the calyx. Staminiferous tube 5-toothed, naked. Style 5-cleft exserted above the staminiferous tube. Capsule 5-celled, 5-valved; valves with dissepiments in the middle, appearing as if the capsule was 10-celled. Seeds kidney-shaped. Trees or shrubs. Leaves entire, crenated or lobed, glandular at the base on the nerves. Stipulas twin, broad, ovate. Peduncles 1-flowered, axillary, or terminal and bibracteolate. Flowers yellow or purplish. This genus has been separated from *Hibiscus*, we shall therefore retain the authorities for the species under that genus.

1 P. TRICU'SPIS (Cav. diss. 3. p. 152. t. 55. f. 21. under *Hibiscus*,) leaves hoary, 3-lobed; lobes lanceolate, a little toothed; peduncles axillary, usually 2-flowered, disposed in racemes at the top of the branches; involucel 9-toothed. ♄. S. Native of the Society Islands. H. hastàtus, Lin. fil. suppl. 310. Corolla yellow, with a brown centre, changing to red as they fade, as in *P. tiliàceum*.

Three-pointed-leaved Paritium. Clt. 1820. Tree 25 feet.

2 P. AZA'NZÆ (D. C. prod. 1. p. 454. under *Hibiscus*,) leaves smooth, lower ones palmately-lobed, middle ones cordate, upper ones ovate, entire; involucel 10-12-toothed. ♄. S. Native of Mexico. Azánza insígnis, Moc. et Sesse, fl. mex. icon. ined. Flowers large, scarlet.

Azánza's Paritium. Tree 20 feet.

3 P. CIRCINNA'TUM (Willd. enum. 735. under *Hibiscus*,) leaves orbicular, cordate, acuminated, very entire, hoary-pubescent beneath; involucel 10-toothed. ♄. S. Native of Caraccas. Flower purplish? Like *P. elàtum*.

Round-leaved Paritium. Clt. 1820. Tree 30 feet.

4 P. TILIA'CEUM (St. Hil. fl. bras. 1. p. 156.) leaves crenulated, cordate, acuminated, smooth above and hoary from down beneath, 9-11-nerved; involucel 10-lobed. ♄. S. Native of the East Indies and Brazil. H. tiliàceus, Lin. spec. 976. Cav. diss. 3. t. 55. f. 1. Ker. bot. reg. t. 232. Paríti, Rheed. mal. 1. t. 30.—Rumph. amb. 2. p. 218. t. 73. Leaves furnished at the nerves beneath with 1-3 linear pores. Flowers sulphur-coloured, with a large purplish-brown spot at the base of each petal.

In the island of Otaheite they make matting of the bark of this tree as fine as our coarse cloth. Also ropes and lines, from the size of an inch to that of a small packthread; and fishing nets. Forster informs us they also suck this bark for food, when the bread-fruit fails them; and in New Caledonia the inhabitants frequently subsist on it, though it is an insipid food, affording very little nourishment.

Lime-tree-like Paritium. Fl. Jul. Aug. Clt. 1739. Tree 40 ft.

5 P. ELA'TUM (Swartz. fl. ind. occid. 2. p. 1218. under *Hibiscus*,) leaves roundish-cordate, quite entire, white from down beneath; peduncles very short, 1-flowered; involucel 10-cleft. ♄. S. Native of Jamaica, Porto-Rico, French Guiana, &c. Leaves furnished on the middle nerve beneath with a linear pore. The bark of this tree is very pliable and is made into cordage of various descriptions. It is called in Jamaica *umbrella tree*. Flowers large, of a purplish-copper colour.

Tall Paritium. Clt. 1790. Tree 50 feet.

6 P. GUINEE'NSE (D. C. prod. 1. p. 454. under *Hibiscus*,) leaves roundish, cordate, quite entire, hoary from pubescence beneath; peduncles 1-flowered, longer than the petioles; involucel very short, 10-toothed. ♄. S. Native of Guinea. Resembles *P. tiliàceum*, but the flowers are twice the size. It is called in our colonies on the coast of Guinea *umbrella tree*, from the shade it affords. Flowers at first yellow, but become purplish as they fade, like those of *P. tiliàceum*.

Guinea Paritium. Fl. April. Clt. 1822. Tree 40 feet.

7 P. SI'MILE (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 651. under *Hibiscus*,) leaves orbicularly-cordate, acuminated, crenulated, covered with white stellate tomentum beneath; involucel 10-cleft. ♄. S. Native of Java. Flowers sulphur-coloured, with a purplish-brown centre. Leaves with 3-5 linear pores on the nerves beneath.

Similar Paritium. Tree 40 feet.

8 P. GANGE'TICUM; leaves ovate, cordate, sometimes slightly 3-lobed, rufescent beneath; involucel connate at the base; branches and petioles rufescent; peduncles long or short, axillary and terminal. ♄. S. Native of the East Indies. Flowers yellow with a dark-purple bottom? Hibíscus Gangéticus, Roxb.

Gangetic Paritium. Clt. 1800. Tree 30 feet.

9 P. MACROPHY'LLUM (Roxb. hort. beng. under *Hibiscus*,) villous; leaves large, roundish-cordate, acuminated, crenulated, pale and glandular beneath; petioles and peduncles hairy-tomentose; involucel 12-14-cleft; capsules many-seeded; seeds bearded on the margins. ♄. S. Native of Bengal, Chittagong, and Silhet. H. macrophýllus, Roxb. hort. beng. p. 51. Wall. pl. asiat. rar. p. 44. t. 51. Flowers terminal and axillary, solitary or twin, large, yellow, with a purple centre. There is a large single spatha which incloses the flower-bud and a 2-leaved spatha which incloses the leaf-bud. Stigmas 5-6.

Large-leaved Paritium. Clt. 1810. Tree 40 feet.

10 P. ABUTILOI'DES (Willd. enum. 736. under *Hibiscus*,) leaves roundish, cordate, acuminated, crenate, green, and smooth on both surfaces; stipulas cordate-ovate. ♄. S. Native of South America.—Sloan. jam. hist. 1. t. 134. f. 4. exclusive of the synonymes. Flowers the colour of the preceding. The bark of this species being very pliable is made into cordage.

Mulberry-like Paritium. Clt. 1820. Tree 30 feet.

11 P. PERNAMBUCE'NSE (Bertol. exc. p. 13. under *Hibiscus*,) leaves profoundly cordate, roundish, acuminated, crenated; older ones very smooth on both surfaces; stipulas lanceolate-falcate. ♄. S. Native of Brazil and Guadaloupe. Flowers unknown but probably yellow, with a dark centre.

Pernambuco Paritium. Tree 40 feet.

Cult. The species of *Paritium* will grow well in loam and sand, and half-ripened cuttings will root readily in sand, under a hand-glass, in heat. As all the species grow to considerable-sized trees before they flower, it is not likely that any of them can be brought to flower in our stoves.

XV. LAGUNA'RIA (a name given to this genus from its similarity to *Lagunæ'a*, which see). Hibíscus, sect. xi. Lagunària, D. C. prod. 1. p. 454.

LIN. SYST. *Monadélphia*, *Polyándria*. Calyx 5-cleft, girded by a hardly evident, entire, or toothed involucel or margin. Stigmas 5, adglutinate. Capsule 5-valved, 5-celled, many-seeded. Trees with entire lanceolate leaves, and large reddish flowers rising singly from the axillæ of the leaves.

1 L. PATERSO'NII (Ait. hort. kew. 4. p. 224. under *Hibiscus*) leaves lanceolate-oblong, quite entire, covered with whitish scales beneath. ♄. G. Native of Norfolk Island. Hibíscus Patersònius, Andr. bot. rep. 286. Lagunæ'a Patersònia, Sims. bot. mag. t. 769. Lagunæ'a squàmea, Vent. malm. t. 42. Flowers large, pale-red, or nearly white, solitary, axillary.

Paterson's Lagunaria. Fl. June, Aug. Clt. 1792. Tree 20 ft.

2 L. CUNEIFO'RMIS; leaves oblong, cuneated, obtuse, smooth, quite entire. ♄. G. Native of New Holland on the western coast. Pedicels length of calyx; involucel very minute, toothed; calyx cleft beyond the middle into 5 acuminated lobes. Stem and leaves resembling those of *Candóllea cuneifórmis*. Flowers pale-red?

Wedge-shaped-leaved Lagunaria. Fl. June, Aug. Clt.? Tree 15 feet.

Cult. Elegant shrubs, well adapted for conservatories. They will grow in a mixture of sand and loam, and cuttings will root in sand under a hand-glass.

XVI. THESPE'SIA (from θεσπεσιος, *thespesios*, divine; because the *T. populnea* is usually planted about churches within the tropics). Corr. ann. mus. 9. p. 290. D. C. prod. 1. p. 455. Malvavíscus, Gært. fruct. 2. t. 135.

Lin. syst. *Monadélphia*, *Polyándria*. Calyx truncate, girded by a 3-leaved deciduous involucel. Capsules 5-celled; cells semi-parted, 4-seeded at the base, with an incomplete dissepiment. Albumen sparing. Trees with entire leaves.

1 T. popu'lnea (Cor. l. c.) leaves roundish, cordate, acuminated, 5-7-nerved, with dot-like scales beneath; peduncles equal in length to the petioles. ♄. S. Native of the East Indies, Guinea, and the Society Islands. Hibíscus popúlneus, Lin. spec. 976. Cav. diss. 3. p. 152. t. 56. f. 1.—Rheed. mal. 1. p. 51. t. 29. Pedicels 1-2 inches long. Flowers large, yellowish, with a dark-red centre, inclining to green, becoming reddish as they decay. This tree is very commonly cultivated about convents and monasteries within the tropics. It is called *umbrella tree* in some of our colonies.

Var. β, Guadalupénsis (D. C. prod. 1. p. 456.) pedicels an inch long; petals narrower, and evidently fringed at the base. ♄. S. Native or cultivated in the island of Guadaloupe. Perhaps a distinct species.

Poplar-like Thespesia. Fl.? Clt. 1770. Tree 40 feet.

2 T. Brasilie'nsis (Spreng. syst. 3. p. 96.) leaves ovate-oblong, acuminated, subtrifid, serrulated, tomentose beneath; peduncles panicled, floccose. ♄. S. Native of Brazil. Flowers yellowish, with a dark centre?

Brazilian Thespesia. Tree 40 feet.

3 T. grandiflòra (D. C. prod. 1. p. 456.) leaves ovate, rather cordate, somewhat acuminated. ♄. S. Native of Porto-Rico. Hibíscus grandiflòrus, Juss. ined. Flowers red, 4 or 5 inches in diameter. Pedicels 4 inches long. Fruit unknown. Habit of *T. populnea*.

Great-flowered Thespesia. Clt. 1327. Tree 30 feet.

4 T. macrophy'lla (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 651.) leaves cordate, acuminated, 5-nerved; peduncles shorter than the petioles. ♄. S. Native of Java.—Rumph. amb. 2. p. 224. t. 47. Flowers large, yellowish, with a dark centre, becoming reddish as they decay.

Large-leaved Thespesia. Tree 30 feet.

5 T.? alti'ssima (Spreng. syst. app. 3. p. 257.) leaves oblong, retuse, entire; peduncles lateral, many-flowered; stamens nearly free. ♄. S. Native of Java. Esenbéckia altíssima, Blum. bijdr.

Tallest Thespesia. Tree 60 feet.

Cult. These trees will thrive well in a mixture of loam and sand, and half-ripened cuttings will root freely in sand or mould under a hand-glass, in heat.

XVII. GOSSY'PIUM (*qoz* or *qothn* in Arabic signifies a soft substance; hence both the Latin and English name of the genus. In Egypt the name of the cotton-tree is *Gotsnenseigiar*). Lin. gen. no. 845. Lam. ill. t. 586. D. C. prod. 1. p. 465.—Xylon, Tourn. inst. t. 27.

Lin. syst. *Monadélphia*, *Polyándria*. Calyx cup-shaped, obtusely 5-toothed, girded by a 3-parted, or 3-leaved involucel, with the leaflets joined at the base, cordate, deeply toothed. (f. 83. *a*.). Stigmas 3 (f. 83. *e*.) or 5. Capsules 3-5-celled (f. 83. *f*.), many-seeded. Seeds imbedded in the cotton (f. 83. *g*.). The species are little known. This is an important genus as furnishing the down used in the cotton manufacture. This down is found lining the capsules. There are several species cultivated for cotton in different parts of the world.

1 G. herba'ceum (Lin. spec. 975.) leaves 5-lobed, with 1 gland beneath; lobes rounded, mucronate; involucel serrated; stem even, smooth. ⊙. (Lin.) S. ♂. (Par.) S. 4. (Roxb.) S. Native of India, Africa, and Syria. Petals yellow with a purple spot on each claw. Cav. diss. 6. t. 164. f. 2.—Blackw. icon. t. 354. This is the only species cultivated in Europe, especially in the Levant, Malta, Sicily, and Naples; it is also grown in many parts of Asia. In the Levant this species of cotton is sown in well prepared land in March in lines at 3 feet distance, and the patches of seeds 2 feet apart in the lines. The plants are thinned out to 2 or 3 in a place, and the earth is stirred by a one-horse plough or by manual labour with hoes, and irrigated once or twice a-week by directing the water along the furrows between the rows. The flowering season is usually over about the middle of September, and then the ends of the shoots are pinched off to determine the sap to the capsules. The capsules are collected by hand as they ripen by a tedious process which lasts till the end of November. The cotton and the seeds are then separated by manual labour, and the former packed in bales or bags for sale. The seeds are bruised for oil or eaten, and a portion kept for sowing; they are esteemed wholesome and nutritive. The most extensive cotton farmers are in the vale of Lorento, in the vicinity of Mount Vesuvius. There the rotation of crops are 1, maize; 2, wheat, followed by beans which ripen next March; 3, cotton; 4, wheat, followed by clover; 5, melons, followed by French beans. Thus in 5 years are produced 8 crops. In this district, wherever water can be commanded, it is distributed as in Tuscany and Lombardy to every kind of crop.

Herbaceous or Common Cotton. Fl. July. Clt. 1594. Pl. 3 to 4 feet.

2 G. Java'nicum (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 651.) leaves roundish-cordate, half 3-lobed, never entire, quite smooth, with 1 gland beneath; involucel jagged, 3-leaved; calyx unequally 5-toothed; petioles and branches covered with black dots. ♄. S. Native of Java, where it is cultivated for its cotton. Flower yellow, with purple claws.

Java Cotton Tree. Shrub 5 feet.

3 G. I'ndicum (Lam. dict. 2. p. 134.) leaves 3-5-lobed, obtuse, glandless; involucel rather cut at the apex; stem herbaceous, hairy. ⊙. ♂. S. Native of the East Indies.—Rumph. amb. 4. p. 38. t. 12. Cav. diss. 6. t. 169. Flowers yellow, with purple claws. This species is cultivated in Amboyna for its cotton.

Indian Cotton. Fl. July, Aug. Clt. 1800. Pl. 3 to 6 feet.

4 G. micra'nthum (Cav. diss. 6. p. 311. t. 193.) leaves 5-lobed, obtuse, very smooth, with 1 gland beneath; involucel multifid, longer than the petals; stem smooth, dotted. ⊙. S. Native of Persia at Ispahan. Flowers yellow, with purple claws? This species is cultivated in Persia for its cotton.

Small-flowered Cotton. Fl. July, Aug. Clt. 1820. Pl. 2 or 4 feet.

5 G. arbòreum (Lin. spec. 975.) leaves 5-lobed, palmate; lobes lanceolate, obtuse, mucronate from a short bristle, with 1 gland beneath; involucel deeply serrated; stem hairy. ♄. S. Native of the East Indies in sandy places.—Rheed. mal. 1. t. 31.—Alp. exot. t. 38. Cav. diss. 6. t. 193. G. rùbrum, Forsk. descr. no. 88? Flowers pale yellow, with brown claws. This species is cultivated in the East Indies, as well as in Africa.

Cotton *Tree*. Fl. July, Aug. Clt. 1694. Shrub 4 to 10 ft.

6 G. vitifòlium (Lam. dict. 2. p. 135.) lower leaves 5-lobed, palmate, upper ones 3-lobed, with 1 or 3 glands beneath; involucels jagged; calyx with three glands at the base; stem dotted, smooth. ⊙. (Com.) S. ♄. (Roxb.) S. Native of the East Indies. Cav. diss. 6. t. 166.—Rumph. amb. 4. t. 13.—G. glàbrum, Lam. according to Cav. is not distinct from this plant. This species is cultivated in the East Indies and Brazil. Flowers yellow, with purple claws.

Vine-leaved Cotton. Fl. July, Aug. Clt. 1805. Pl. 5 feet.

7 G. hirsu'tum (Lin. spec. 975.) upper leaves undivided,

cordate, lower ones 3-5-lobed, with 1 gland beneath; branches and petioles hairy; involucels 3-toothed at the apex. ⊙. or ♂. (Willd.) S. ♄. (Roxb.) S. Native of South America. Flowers yellow.—Pluk. alm. 172. t. 299. f. 1.—Sab. hort. 1. t. 55.—Cav. diss. 6. t. 167. This species is occasionally cultivated in the West Indies, but the cotton is not considered good, nor is it easy to separate it from the seeds.

Hairy Cotton. Fl. July, Aug. Clt. 1731. Pl. 3 to 6 feet.

8 G. eglandulòsum (Cav. diss. 6. p. 354.) leaves 5-lobed, glandless, with 3 oblong acuminated lobes; stem villous; involucels 3-4-toothed. ⊙. S. Native of? Perhaps the same as *G. herbàceum*. Flowers yellow, spotted at the base.

Glandless-leaved Cotton. Fl. July, Aug. Pl. 3 feet?

9 G. religiòsum (Lin. spec. 975.) upper leaves 3-lobed, lower ones 5-lobed, with 1 gland beneath; branches and petioles villous, and with black spots; involucel usually 3-lobed, jagged, villous; cotton pale-copper coloured. ♂. (Cav.) S. ♃. (Rottb.) S. Native? Cav. diss. 6. t. 164. f. 1. Leaves almost the size of the hand. Perhaps G. tricuspidàtum, Lam. dict. 2. p. 136. Flowers at first white. This is probably the species of *Gossýpium*, from whence the nankeen clothing is formed without any dyeing process, if so it is a native of China.

Religious Cotton. Fl. July. Clt. 1777. Pl. 3 to 6 feet.

10 G. latifòlium (Murr. comm. gœtt. 1776. p. 32. t. 1.) leaves acute, the lower ones undivided, the rest 3-lobed, with 1 gland beneath. ♂? ♄. S. Native of? Flowers large, white, turning red as they wither.

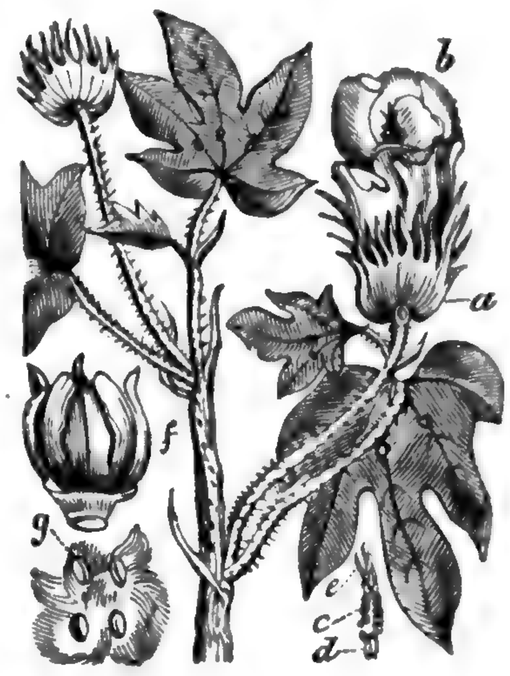
Broad-leaved Cotton. Fl. July, Aug. Clt. 1800. Shrub 6 ft.

11 G. Barbade'nse (Lin. spec. 975.) upper leaves 3-lobed, lower ones 5-lobed, with 3 glands beneath; stem smooth; seeds free. ♂? ♄. S. Native of Barbadoes.—Pluk. alm. 172. t. 188. f. 1. Flowers large, yellow, with a purple spot at the base of each petal, finally turning red. This is the species which is generally cultivated in the West Indies, and forms a considerable branch of their exports. The seeds are sown in rows about 5 feet asunder, at the end of September or the beginning of October; at first but slightly covered, but after it is grown up the root is well moulded. The soil should not be stiff nor shallow, as this plant has a tap root. The ground is hoed frequently, and kept very clean about the young plants until they rise to a moderate height. It grows from 4 to 6 feet high, and produces two crops annually; the first is eight months from the time of sowing the seed; the second within four months after the first, and the produce of each plant is reckoned about one pound weight. The branches are pruned and trimmed after the first gathering; and if the growth is over luxuriant, this should be done sooner. When great part of the pods are expanded, the wool is picked and afterwards cleared from the seeds by a machine, called a gin, composed of two or three smooth wooden rollers of about one inch diameter, ranged horizontally, close, and parallel to each other, in a frame; at each extremity they are toothed or channelled longitudinally, corresponding one with the other; and the central roller being moved with a treadle or foot-lathe, resembling that of a knife-grinder, makes the other two revolve in contrary directions. The cotton is laid in small quantities at a time upon these rollers whilst they are in motion, and readily passes between them, drops into a sack, placed underneath to receive it, leaving the seeds which are too large to pass with it, behind. The cotton thus separated from the seeds is afterwards hand-picked and cleansed thoroughly from any little particles of the pods or other substances, which may be adhering to it. It is then stowed in large bags, where it is well trod down, that it may be close and compact; and the better to answer this purpose, some water is every now and then sprinkled on the outside of the bag; the marketable weight of which is usually three hundred pounds. An acre may be expected to produce two hundred and forty pounds to that quantity, or two hundred and seventy pounds on an average. Long's jam. iii. p. 686, &c. and Browne.

Barbadoes Cotton. Fl. Sep. Clt. 1759. Pl. 5 feet.

12 G. Peruvia'num (Cav. diss. 6. p. 313. t. 168.) leaves 5-lobed, with 3 glands beneath, lower ones undivided; involucels jagged, with 3 glands at the base. ♂. S. Native of Peru. Flowers yellow, with red dots at the base (f. 83.).

FIG. 83.



Peruvian Cotton. Pl. 4 feet.

13 G. purpura'scens (Poir. suppl. 2. p. 369.) leaves 3-lobed, pubescent beneath, with ovate-lanceolate acute lobes; involucel jagged; branches puberulous at the top; capsules 3-valved. ♄. S. Native of South America.

Purplish-stemmed Cotton. Sh. 6 feet.

14 G. racemòsum (Poir. suppl. 2. p. 370.) very smooth; leaves somewhat cordate, 3-lobed, acuminated; flowers somewhat racemose at the tops of the branches; capsules 3-valved. ♄. S. Native of Porto-Rico. Flowers yellow, with purple claws.

Racemose-flowered Cotton. Shrub 4 to 6 feet.

† *Names of species to be enquired into; they are probably synonymes of the former species.*

15 G. obtusifòlium (Roxb. hort. beng. 51.) ♄. S. Native of Ceylon. Lobes of leaves blunt.

Blunt-leaved Cotton. Fl. July, Aug. Clt.? Shrub 6 feet.

16 G. acumina'tum (Roxb. hort. beng. 51.) ♄. S. Native of Hindostan. Lobes of leaves acuminated.

Acuminated-leaved Cotton. Fl. July, Aug. Clt. 1822. Shrub 6 feet.

17 G. glandulòsum (Ræusch. nom.) This is probably *G. Peruviànum* or *G. vitifòlium*.

Glandular Cotton. Pl. 4 feet?

N. B. There are 29 species described by Von Rohr, which are probably varieties or synonymous with those described above. There are 7 species described by Paris, which are also probably synonymous with those above.

Cult. The shrubby species may be increased by seeds, or cuttings not too much ripened will root freely under a hand-glass in a light soil. The annual and biennial species should be sown in pots in spring, and placed in a hot-bed frame, and when the plants are of sufficient size they should be planted in separate pots and shifted into larger ones as they grow. A light rich soil suits them best. The species require a moist heat.

XVI. REDOUTE'A (in honour of P. J. Redouté, a meritorious botanical artist; he is well known by his drawings in Redouté Liliacees, and in Ventenats Jardin de Malmaison.) Vent. cels. t. 11. D. C. prod. 1. p. 457.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-parted, girded by a 10 or 12-leaved involucel (f. 84. *a.*), shorter than the calyx (f. 84. *b.*). Stigmas 3 (f. 84. *g.*). Capsules 3-celled, 3-valved (f. 84. *h.*), many-seeded, with 3 placentas, alternating with the valves, bearing woolly seeds (f. 84. *l.*) on both sides.

1 R. HETEROPHY'LLA (Vent. cels. t. 11.) leaves ciliated, elliptical, rounded at both ends, entire, rarely 3-lobed. ♄. S. Native of the West Indian Island St. Thomas, and on the banks of the river Orinoco. H. B. et Kunth, nov. gen. and spec. amer. 5. p. 293. Stem erect, smooth, branched. Leaves 3-nerved, beset with scattered scales. Flowers sulphur-coloured, with purple claws, standing on trigonal pedicels (f. 84.).

FIG. 84.

Variable-leaved Redoutea. Fl. July. Clt. 1822. Shrub 3 feet.

2 R. TRIPARTI'TA (H. B. and Kunth, nov. gen. and spec. amer. 5. p. 293.) leaves smoothish, deeply 3-parted; segments oblong, acute, cuneated at the base, intermediate one entire or obsoletely 3-lobed, lateral ones bifid. ♄. S. Native of South America on the banks of the river Amazon. A trailing shrub with yellow flowers.

Three-parted-leaved Redoutea. Shrub procumbent.

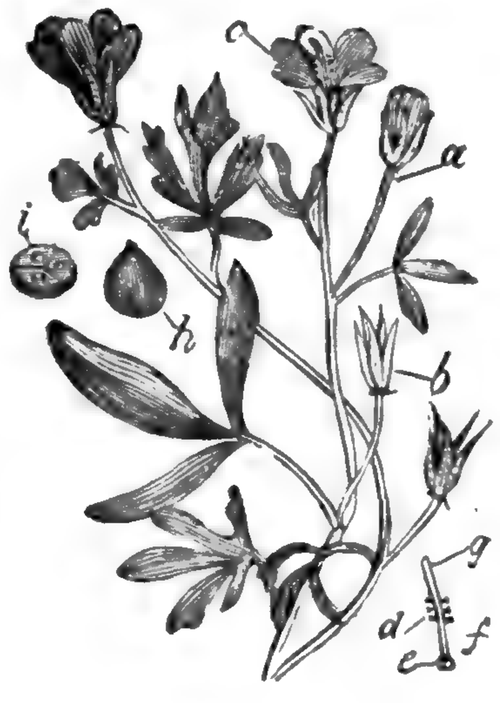
Cult. These shrubs are easily increased by seeds; they should be sown in pots, and placed in a hot-bed frame, and when the plants are of sufficient size they should be separated, and planted singly into other pots, or they may be reared by cuttings planted in sand or mould, under a hand-glass, in heat.

XIX. FUGO'SIA (a name abridged by Jussieu from *Cienfuegòsia*, instituted by Cavanilles in memory of Bernard Cienfuegos, a Spanish botanist, who lived towards the end of the sixteenth century.) Juss. gen. 274. D. C. prod. 1. p. 457.—Cienfuegòsia, Cav. diss. 3. p. 174. t. 72. f. 2. Lam. ill. t. 577.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-cleft, girded by a 6-12-leaved involucel; leaflets bristle-like, very short (f. 85. *a.*). Anthers numerous from the sides and lower part of the staminiferous tube (f. 85. *d.*). Stigmas 3-4, adglutinate or free, clavated. Capsule 3-4-celled, 3-4-valved, 3-seeded, from abortion. Seeds naked or covered with short wool.

1 F. DIGITA'TA (Pers. ench. 2. p. 240.) leaves 3-5-parted, with linear blunt lobes; pedicels 1-flowered; seeds smooth. ♄. S. Native of Senegal. Cienfuègia digitàta, Willd. spec. 3. p. 723. Flowers yellow, with a red tube. (f. 85.). Stigmas adglutinated.

FIG. 85.



Digitate-leaved Fugosia. Shrub 1 foot.

2 F. SULFU'REA (St. Hil. fl. bras. 1. p. 252. t. 49.) leaves roundish, toothed, pubescent; stigmas 4, adglutinate; capsule smooth; seed solitary, covered with short wool. ♄. S. Native of Brazil in the province of Cisplatine in dry pastures. Flowers sulphur-coloured, axillary, solitary.

Sulphur-coloured-flowered Fugosia. Pl. prostrate.

3 F. AFFI'NIS (St. Hil. fl. bras. 1. p. 253.) leaves oblong-ovate, farinosely-tomentose beneath; stigmas 4, distinct; cells of ovary 7-8-ovulate. ♄. S. Native of Brazil. Peduncles solitary, axillary, 1-flowered. Seeds solitary from abortion.

Allied Fugosia. Shrub 1 foot.

4 F. PHLOMIDIFÒLIA (St. Hil. fl. bras. 1. p. 253. t. 50.) leaves ovate or lanceolate, entire, densely tomentose beneath; stigmas 3, distinct; cells of ovary 5-ovulate; capsule villous; seeds woolly. ♄. S. Native of Brazil in the province of Minas Geraes in fields. Flowers yellow, with a dark-purple base.

Phlomis-leaved Fugosia. Fl. May. Shrub 1 foot.

Cult. These plants are hardly worth cultivating except in botanical gardens. They will grow well in a mixture of loam and peat, and cuttings not too much ripened will root readily in sand or mould under a hand-glass, in heat.

XX. SE'RRA (to the memory of — Serra, a Spanish botanist, who wrote upon the plants of Majorca.) Cav. diss. 2. p. 83. t. 35. f. 3. D. C. prod. 1. p. 457.—Serræ'a, Willd. spec. 3. p. 695.

LIN. SYST. *Monadélphia, Decándria.* Calyx 5-toothed, small, girded by a 3-leaved involucel; leaflets cordate, entire. Anthers about 10, stipitate at the top and upper part of the tube, and with a 4 or 5-crenate membrane under the ovary. Stigmas 5. Capsules 2-celled? 10-seeded.

1 S. INCA'NA (Cav. l. c.) ⊙? F. Native of Arabia in the island of Soccotara. The whole plant downy, 3 inches high. Leaves cordate, truncate, 3-toothed. Flowers yellowish, axillary, almost sessile.

Hoary Serra. Pl. ¼ to ½ foot.

Cult. A plant of easy culture. It can be propagated by seeds.

XXI. LOPI'MIA (from λωπιμος, *lopimos*, easy of decortication.) Mart. in nov. act. bonn. xi. p. 96. D. C. prod. 1. p. 457.

LIN. SYST. *Monadélphia, Polyándria.* Involucel longer than the calyx, of 20, bristle-like connivent leaflets. Corolla flat. Column of stamens deflexed. Stigmas 10. Anthers 30-40. Capsule of 5 carpels; carpels indehiscent, covered with mucilaginous glue. Habit of *Sìda*. The bark is used for cordage.

1 L. MALACOPHY'LLUM (Mart. l. c.) ♄. S. Native of Brazil about Bahia. Sìda malacophýlla, Link, and Otto, abb. gew. berl. 1. p. 67. t. 30. Shrub clothed with soft starry white pubescence. Leaves orbicular, cordate, coarsely toothed. Flowers axillary, solitary, or crowded at the tops of the branches, scarlet. This plant when growing in its place of natural growth, and when in flower, has much the appearance of *Chirònia frutéscens*.

Soft-leaved Lopimia. Fl. Aug. Sep. Clt. 1823. Shrub 1 to 4 ft.

Cult. This beautiful shrub will do well in a mixture of loam and peat, and half-ripened cuttings will root freely in sand under a hand-glass in heat, or it may be raised from seed, which no doubt will ripen in this country.

XXII. POLYCHLÆ'NA (from πολυ, *poly*, many, χλαινα, *chlaina*, a cloak, alluding to the many-leaved involucel.)

LIN. SYST. *Monadélphia, Polyándria.* Involucel of numerous linear, ciliated leaflets, which are longer than the calyx. Capsule 5-celled, pilose; cells 1-seeded. Seeds angular. Annual plants with serrated leaves and crowded cymose heads of small white flowers, and awl-shaped stipulas.

1 P. RAMÒSA; erect branched, pilose; leaves lanceolate, acute, serrated, on short petioles; flowers cymose, terminal. ⊙. S. Native of Guinea.

Branched Polychlæna. Pl. 1 foot.

2 P. SI'MPLEX; simple, hispid; leaves ovate, acute, serrated, stalked; flowers terminal, sessile. ⊙. S. Native of Guinea.

Simple Polychlæna. Pl. 1 foot.

Cult. These plants will grow in any common garden-soil; however they are not worth cultivating except in general collections.

Division II. Calyx naked at the base, that is to say, without an involucel.

XXIII. PALA'VIA (in honour of Antonio Palau y Verdera, M. D. once professor of botany at Madrid.) Cav. diss. 1. p. 40. Lam. ill. t. 577. D. C. prod. 1. p. 458.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft. Carpels many, capsular, 1-seeded, collected into a head without order. This genus differs from *Sìda* as *Málope* does from *Málva*, and from *Málope* as *Sìda* does from *Málva*.

1 P. malvæfòlia (Cav. diss. 1. p. 40. t. 11. f. 4.) plant smoothish, prostrate; leaves sub-lobate, rather cordate; peduncles solitary, about the length of the leaves. ⊙. H. Native of Peru in sand near Lima. Málope parviflòra, Lher. stirp. 1. p. 103. t. 50. Palàvia declinàta, Mœnch. Flowers small, red.

Mallow-leaved Palavia. Fl. July, Aug. Clt. 1794. Pl. prostrate.

2 P. moscha'ta (Cav. diss. 1. p. 41. t. 11. f. 5.) plant tomentose, erect; leaves cordate, crenate; peduncles longer than the leaves. ⊙. H. Native of Peru near Lima, in the sand. Flowers yellowish or purplish. There is a specimen of this plant in the herbarium of Balbis under the name of *P. prostràta* of All.; it is probably the same as the following species.

Musk-scented Palavia. Fl. Jul. Aug. Clt. 1822. Pl. 1 to 2 ft.

3 P. rhombifòlia (Graham, in edinb. new phil. journ. July, Oct. 1830.) leaves rhomboidal, lobately-crenate, stellately pilose on the veins, shorter than the peduncles; stipulas awl-shaped, ciliated, green; petals obovately-cuneated, obliquely emarginate; peduncles longer than the leaves. ⊙. H. Native of Peru near Lima. Flowers large, rose-coloured, with orange-coloured anthers, on long peduncles in the axils of the upper leaves. Lindl. bot. reg. t. 1375.

Rhomb-leaved Palavia. Fl. July, Aug. Pl. prostrate.

Cult. These plants are not worth cultivating except in botanical gardens. The seeds require to be sown on a hot-bed early in the spring, and the plants should be transplanted into the open border in the month of May, where they will ripen their seeds.

XXIV. CRISTA'RIA (from *crista*, a crest, because of the carpels having two crest-like wings in the centre of each,) Cav. icon. 5. p. 10. D. C. prod. 1. p. 458. but not of Sonn.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft. Fruit orbicular, depressed, covered with a skin, consisting of several 1-seeded carpels, which have 2 wings in the centre of each. Small plants with the habit of *Sìda*.

1 C. betonicæfòlia (Pers. ench. 2. p. 248.) plant erect; leaves somewhat cordate, deeply-crenated, hoary. ♃ ? F. Native of Chili. Sìda Chilénsis, Spreng. syst. 3. p. 109. Feuill. hist. 3. p. 40. t. 27. Flowers red ? racemose.

Betony-leaved Cristaria. Pl. trailing.

2 C. glaucophy'lla (Cav. icon. 5. p. 11. t. 418.) plant prostrate; leaves lobed, cut, downy, glaucous. ♃ ? F. Native of Chili in the sea-sand near the town of Coquimbo. Sìda glaucophýlla, Spreng. Petals flesh-coloured, with villous claws.

Glaucous-leaved Cristaria. Pl. prostrate.

3 C. multi'fida (Cav. l. c.) plant prostrate; leaves multifid, smooth. ♃. F. Native of Peru in sandy places. Sìda multífida, Cav. diss. 1. p. 25. t. 4. f. 2. Sìda pterospérma, Lher. stirp. 1. p. 119. t. 57. Flowers white, axillary, solitary, turned towards the earth.

Multifid-leaved Cristaria. Pl. prostrate.

4 C.? coccínea (Pursh. fl. amer. sept. 2. p. 453.) plant beset with hoary tomentum and starry hairs; leaves 3-5-cleft, with cut acute segments; racemes terminal; stem diffuse, prostrate. ♃. H. Native of North America on the dry prairies and extensive plains of the Missouri. Sìda coccínea, D. C. prod 1. p. 465. Málva coccínea, Fras. cat. Nutt. gen. amer. 2. p. 81. Flowers bright scarlet. Styles 10. Carpels not winged.

Scarlet-flowered Cristaria. Fl. Aug. Sep. Clt. 1811. Pl. ½ ft.

Cult. The three first species should be grown in pots in a mixture of sand and peat, and in winter they should be kept in a green-house or a frame. The *C. coccínea* will only thrive when planted in a border of peat soil, and it is propagated but slowly by dividing the roots, or by seeds. The others may be propagated in the same manner.

XXV. A'NODA (from *a* priv. and *nodus*, knot; given to this genus because the pedicels are without the articulation which is remarked in *Sìda*.) Cav. diss. 1. p. 38. D. C. prod. 1. p. 458.

Lin. syst. *Monadélphia. Polyándria.* Calyx naked, 5-cleft; lobes acuminated, much spreading when in fruit. Capsules hemispherical beneath, depressed and stellate above, many-celled, or with 1-celled 1-seeded divisions. Habit of *Sìda*.

* *Carpels or cells of capsule stellately disposed, each ending in a somewhat spiny mucrone.*

1 A. hasta'ta (Cav. diss. 1. p. 38. t. 11. f. 2.) lower leaves cordate, acuminate, 5-angled, a little toothed, obtuse, upper ones hastate, acuminated, somewhat toothed at the base; pedicels solitary, axillary, length of leaves. ⊙. G. Native of Mexico and Peru in moist places. Sìda hastàta, Willd. spec. 3. p. 763. Flowers white, blue or purplish, about the size of those of *Málva rotundifòlia*. Style 10-15-cleft.

Halbert-leaved Anoda. Fl. June, July. Clt. 1799. Pl. 2 ft.

2 A. tríloba (Cav. diss. 1. p. 39. t. 10. f. 3.) leaves all crenated, lower ones roundish-cordate, obtuse, usually 5-angled, upper ones roundish, halbert-shaped, 3-lobed, acuminated; pedicels solitary, axillary, longer than the leaves. ⊙. G. Native of Mexico. Petals purple, somewhat emarginated. Calyx very villous. Sìda cristàta, Willd. spec. 3. p. 763. Flowers about the size of those of *Lavatèra O'lbia*. Style 15-25-parted.

Three-lobed-leaved Anoda. Fl. July, Sept. Clt. 1720. Pl. 2 feet.

3 A. Dillenia'na (Cav. diss. 1. p. 40. t. 11. f. 1.) lower leaves halbert-shaped, 3-lobed, acuminated, crenate, upper ones ovate-lanceolate, almost entire; pedicels solitary, axillary, length of leaves, and twice as long as the petioles. ⊙. G. Native of Mexico.—Dill. elth. 1. t. 2. Sìda Dilleniàna, Willd. spec. 3. p. 764. Sìda cristàta, Curt. bot. mag. t. 330. exclusive of the synonymes. Petals rose-coloured, emarginated at the apex. Flowers the size of those of the preceding species.

Dillenius's Anoda. Fl. July, Nov. Clt. 1725. Pl. 2 feet.

4 A. triangula'ris (D. C. prod. 1. p. 459.) leaves triangular, somewhat rhomboidal, acuminated, toothed at the base, quite entire at the apex; pedicels solitary, axillary, length of leaves 5-times longer than the petioles. ⊙. G. Native of Mexico. Sìda deltoìdea, Horn. hort. hafn. 36. Flowers rose-coloured, about the size of those of the preceding.

Triangular-leaved Anoda. Fl. July, Aug. Clt. 1820. Pl. 1 ft.

5 A. incarna'ta (H. B. et Kunth, nov. gen. and spec. amer. 5. p. 255.) branches and leaves hairy, lower leaves ovate-oblong, cordate, halbert-shaped, serrated, upper ones narrow, trifid; pedicels solitary, axillary, somewhat longer than the leaves. ♃. S. Native of Mexico in gardens. Flowers flesh-coloured. Carpels 12. Perhaps the same as the first.

Flesh-coloured-flowered Anoda. Fl. July, Aug. Clt. 1824. Pl. 1 to 3 feet.

** *Carpels mutic.*

6 A. acerifòlia (D. C. prod. 1. p. 459.) lower leaves cordate, angular, upper ones hastate, elongated, the rest 5-lobed,

halbert-shaped; pedicels longer than the leaves; petals obovate, longer than the calyx. ⊙. G. Native of Mexico. Flowers small, blue. Sìda acerifòlia, Zucc. obs. no. 80. Sìda hastàta, Sims, bot. mag. t. 1541. Sìda quinquéloba, Moc. et Sesse, fl. mex. ined.

Maple-leaved Anoda. Fl. July, Aug. Clt. 1809. Pl. 4 feet.

7 A. parviflòra (Cav. icon. 5. p. 19. t. 431.) lower leaves cordate, angular, upper ones halbert-shaped; pedicels shorter than the leaves; petals crenated, rather longer than the calyx. ⊙. G. Native of New Spain in the valley called Queretaro. Flowers pale-yellow. A. crenatiflòra, Ort. dec. p. 96. Sìda crenatiflòra, Pers. ench. 2. p. 247.

Small-flowered Anoda. Fl. July, Aug. Clt. 1820. Pl. 6 feet.

Cult. These plants are not worth cultivating except in botanical gardens. The seeds only require to be sown on a hot-bed frame in spring, and when the plants are of sufficient size they should be transplanted separately into other pots, and about the end of May they should be removed into the green-house, where they will ripen seed. A mixture of loam and peat will suit them well. The perennial species, *A. incarnàta*, should be kept in the stove, and may be easily increased by seeds, or cuttings.

XXVI. PERI'PTERA (from περιπτερα, *periptera*, a shuttlecock; resemblance in shape of flower.) D. C. prod. 1. p. 459.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft. Petals erect, spirally twisted into a tube, but at length becoming distinct. Capsule stellately many-celled. Cells 1-seeded. This genus differs from *Sìda* as *Malvavíscus* does from *Hibíscus.*

1 P. puni'cea (D. C. prod. 1. p. 459.) downy; lower leaves cordate, somewhat 5-lobed, halbert-shaped, upper ones halbert-shaped; peduncles solitary, axillary; petals erect, spatulate, somewhat toothed at the apex, twice the length of the calyx. ♄. S. Native of New Spain. Flowers crimson. Sìda perí-ptera, Sims, bot. mag. t. 1644. Sìda Malvavíscus, Moc. et Sesse, fl. mex. icon. ined. Sìda rùbra, Tenor. hort. nap. A'noda puní-cea, Lag. nov. gen. t. 21. An elegant plant.

Crimson-flowered Periptera. Fl. May, Aug. Clt. 1814. Shrub 1 to 2 feet.

2 P. Megapota'mica; smooth; leaves subcordate, acuminated, trifid, toothed, 5-nerved; peduncles solitary, axillary, much longer than the leaves; petals at first conniving into a tube, erect, much longer than the calyx, which is truncate at the base, veined, pale; genitals exserted. ♄. S. Native of Brazil on the banks of the Rio Grande. Sìda Megapotámica, Spreng. syst. tent. suppl. p. 19. Flowers probably pale-red.

Rio Grande Periptera. Shrub 2 feet.

Cult. These pretty little shrubs will thrive well in a mixture of loam and peat, and cuttings will root freely in sand under a hand-glass, but as they ripen seed in abundance this will not be necessary.

XXVII. SI'DA (a name given by Theophrastes to an aquatic plant, which is believed to be analogous with *Althæ'a.*) Cav. diss. p. 5. D. C. prod. 1. p. 459.—Sìda and Napæ'a, Lin. Lam. ill. t. 578 and 579. Sìda Bastárdia and Gàya, Kunth. malv. p. 4.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft, usually angular. Style multifid at the apex. Carpels capsular, 5-30, in a whorl around the central axis, more or less connected together, 1-celled, 1-seeded, mutic or awned at the apex.—A very polymorphous genus, differing greatly from each other in the structure of the fruit and seeds; but notwithstanding we consider it most adviseable to retain the whole under *Sìda*, as the carpology of the greater mass of the species are not sufficiently known.

Sect. I. Malvi'nda (a diminutive of *Málva.*) Medik. malv. p. 23. D. C. prod. 1. p. 459. Carpels 5-12, 1-seeded, but not bladdery.

* *Brèvi-pedicellàtæ. Pedicels usually not exceeding the petioles in length. Leaves linear, lanceolate, oblong or ovate, seldom cordate at the base.*

1 S. linifòlia (Cav. diss. 1. p. 14. t. 2. f. 1.) leaves linear, hairy, quite entire, much longer than the diameter of the flower; racemes terminal, corymbose; carpels 5-8, almost awnless. ♄. S. Native of Peru, Cayenne, and St. Domingo. Màlva hir-sùta gramineo folio, Aubl. guian. 2. p. 704. Flowers small, scarcely 4 lines in diameter, white.

Flax-leaved Sida. Fl. July. Clt. 1822. Shrub 2 feet.

2 S. stella'ta (Torrey in anal. lyc. new york, vol. 2.) plant beset with stellate pubescence; leaves lanceolate, acute, erosely-serrated, wrinkled; pedicels axillary, 3-5-flowered, shorter than the petioles; flowers capitately glomerate; carpels 12-14, with 2 mucrones, 1-2-seeded, with the sides reticulated at the base. ♄. S. Native of North America on the Rocky Mountains.

Stellate-pubescent Sida. Shrub 1 foot?

3 S. brachyste'mon (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 459.) leaves linear, quite entire, hardly longer than the diameter of the flower; pedicels axillary, 1-flowered, length of the stipulas and petioles. ♄. S. Native of Mexico. Flowers white, with a red centre. Stamens very short.

Short-stamened Sida. Shrub 2 feet.

4 S. prostra'ta; stem prostrate, pilose; leaves lanceolate, unequally serrated on short footstalks; stipulas setaceous; pedi-cels short, 1-flowered, axillary. ♄. S. Native of Sierra Leone in cultivated places. Flowers yellow.

Prostrate Sida. Shrub prostrate.

5 S. angustifòlia (Lam. dict. 1. p. 4.) leaves linear-lanceo-late, toothed, with a spiny tubercle under the base of the petiole; pedicels axillary, usually solitary; carpels 5, ending in 2 points. ♄. S. Native of the island of Bourbon. Flowers small, yellow. Cav. diss. 1. p. 14. t. 2. f. 2. but not of Mill. S. ulmifòlia, Retz, obs. 3. p. 37.

Narrow-leaved Sida. Fl. July, Sep. Clt. 1726. Shrub 3 ft.

6 S. linea'ris (Cav. icon. 4. p. 6. t. 312. f. 1.) leaves linear, serrated, with a spiny tubercle under the base of the petiole; pe-dicels axillary, solitary; carpels 10, mutic. ♄. S. Native of New Spain. Flowers small, yellow, hardly open.

Linear-leaved Sida. Shrub 1½ foot.

7 S. spino'sa (Lin. spec. 960.) leaves ovate-lanceolate, tooth-ed, with a spiny tubercle under the base of the petiole; pedicels axillary, solitary, shorter than the stipulas and petioles; capsules 5, ending in 2 beaks. ⊙. S. Native of the East Indies, Egypt, Senegal, and Jamaica. Cav. diss. 1. p. 11. t. 1. f. 9. Stewártia corchoroìdes, Forsk. Flowers yellow. There is a variety of this with somewhat cordate leaves.

Spinose-leaved Sida. Fl. July, Sep. Clt. 1680. Pl. 1 foot.

8 S. acu'ta (Burm. ind. 147.) leaves linear-lanceolate, tooth-ed, smooth; pedicels axillary, solitary, length of stipulas and petioles; carpels 5, 2-beaked. ♄. S. Native of Coromandel, Java, and Cochin-china. Cav. diss. 1. p. 15. t. 2. f. 3.—Pluk. mant. 10. t. 334. f. 2.—Rumph. amb. 6. p. 43. t. 18. S. scopària, Lour. coch. 2. p. 504. Flowers pale-yellow.

Acute-fruited Sida. Shrub 1 to 6 feet.

9 S. a'lba (Lin. spec. 960. but not of Cav.) leaves oblong-ovate, somewhat cordate, obtuse, toothed; pedicels equal in length to the petioles; carpels 5, 2-horned. ⊙. S. Native of the East Indies.—Dill. hort. elth. 2. t. 171. f. 210. Flowers white. Pedicels solitary.

White-flowered Sida. Fl. June, July. Clt. 1732. Pl. 1 to 2 feet.

10 S. Stauntonia'na (D. C. prod. 1. p. 460.) leaves oblong-lanceolate, toothed, smooth, pale beneath; pedicels axillary, solitary, length of stipulas and petioles; carpels 7, 2-horned. ♄. S. Native of China. S. lanceolàta, Willd. spec. 3. p. 736? S. stipulàta e China, Cav. diss. 1. p. 23? Flowers yellow.

Staunton's Sida. Shrub 2 feet.

11 S. stipula'ta (Cav. diss. 1. p. 22. t. 3. f. 10.) leaves lanceolate, toothed, acute, pilose; pedicels solitary, axillary; stipulas linear, fringed, longer than the petioles; carpels 7-10, ending in 2 beaks. ♄? S. Native of the Mauritius. The leaves are either hairy or smoothish. Flowers yellow.

Stipulate-leaved Sida. Fl. July, Aug. Clt. 1819. Shrub 1 to 3 feet.

12 S. murica'ta (Cav. icon. 6. p. 78. t. 597. f. 2.) leaves lanceolate, serrated, scarcely longer than the petioles; stipulas ciliated, elongated; flowers somewhat capitate; carpels 7, muricated, ending in 2 beaks. ♄? S. Native of New Spain near Chalma. Stem villous. Flowers yellow.

Muricated-carpelled Sida. Shrub 1 foot.

13 S. Berteria'na (Balb. in litt. D. C. prod. 1. p. 460.) leaves lanceolate, toothed, acute, rather pilose; pedicels 1-2, axillary, 1-flowered, very short; stipulas ciliated, twice as long as the petioles and flowers; carpels 5, almost mutic. ♄? S. Native of St. Domingo and Porto-Rico. Resembles *S. stipulàta*. Flowers yellow.

Bertero's Sida. Shrub 2 feet.

14 S. glomera'ta (Cav. diss. 1. p. 18. t. 2. f. 6.) leaves ovate-lanceolate, serrated, downy; pedicels glomerate, axillary, 1-flowered, very short; carpels 5, 2-horned. ♄? S. Calyx ciliated. Resembles *S. Jamaicénsis*. Flowers yellow.

Glomerated-flowered Sida. Shrub 1 to 2 feet.

15 S. Jamaice'nsis (Cav. diss. 1. p. 17. t. 2. f. 5.) leaves ovate, serrated, tomentose, with blunt awned serratures; pedicels axillary, solitary, 1-flowered, short; carpels 5, 2-horned. ♄. S. Native of Jamaica in arid places, as well as in St. Domingo.

Jamaica Sida. Fl. July, Aug, Clt. 1817. Shrub 2 feet.

16 S. Balbisia'na (D. C. prod. 1. p. 460.) leaves ovate-lanceolate, somewhat rhomboid, acuminated, entire at the base, serrate-toothed at the top, and are as well as the branches rough from starry down; pedicels solitary, 1-flowered, length of stipulas; stipulas ciliated; carpels 8-10, ending in 2 beaks. ♄. S. Native of Porto-Rico. Flowers yellow.

Balbis's Sida. Shrub 2 feet.

17 S. brachype'tala (D. C. prod. 1. p. 460.) leaves ovate-lanceolate, acuminated, unequally serrated, somewhat pubescent from pressed down; stipulas and calyxes ciliated; pedicels solitary, 1-flowered, length of stipulas; corolla shorter than the calyx; carpels 8-10, 2-beaked. ♄. S. Native of Martinico and St. Domingo. Flowers yellow. Differing from *S. frutéscens* in the pedicels being jointed at the base, not at the apex.

Short-petalled Sida. Shrub 1 to 3 feet.

18 S. repa'nda (Roth. nov. spec. p. 328.) leaves ovate, acuminated, doubly serrated, covered with small starry hairs above; pedicels solitary, shorter than the linear-lanceolate, ciliated stipulas; petals obliquely-repand; carpels 2-beaked. ♄. S. Native of? Flowers sulphur-coloured. Resembles *S. carpinifòlia*.

Repand-petalled Sida. Shrub 1 foot.

19 S. bracteola'ta (D. C. prod. 1. p. 460.) leaves ovate-lanceolate, acuminated, toothed, smooth; branches round, hairy; stipulas of two forms, one awl-shaped, the other linear; racemes very short, 1-3-flowered, bracteolate; carpels 7-8, 2-beaked. ♄. S. Native of South America on the road from Chili to Brazil. Flowers small, yellow.

Bracteolate-flowered Sida. Shrub 1 to 2 feet.

20 S. carpinifo'lia (Lin. fil. suppl. 307.) leaves ovate-oblong, doubly-serrated; peduncles axillary. very short, usually 4-flowered; branchlets flattened; carpels 8, 2-beaked. ♄. G. Native of the Canary Islands and Brazil. Cav. diss. 1. p. 24. t. 3. p. 11. Flowers yellow. The leaves are chewed by the inhabitants of Brazil, and applied with success to the bites of wasps and bees.

Var. β? *betulìna* (Lag. hort. madr. 1815.) leaves broader and somewhat cordate at the base. ♄. S. Native of the Mauritius. S. carpinifòlia, Jacq. icon. rar. 1. t. 135.

Hornbean-leaved Sida. Fl. July, Sep. Clt. 1774. Shrub 2 ft.

21 S. carpinoi'des (D. C. prod. 1. p. 461.) leaves ovate-oblong, somewhat doubly serrated; pedicels axillary, 1-flowered, solitary; carpels 10-12, 2-horned on the back, and with 1 awn at the base on the inside. ♄. S. Native of Brazil. Flowers yellow. This plant is often to be found in gardens under the name of *S. carpinifòlia*.

Horn-bean-like Sida. Fl. July, Sep. Clt. 1800. Shrub 2 feet.

22 S. mucronula'ta (D. C. prod. 1. p. 461.) lower leaves ovate-oblong, upper ones oblong, somewhat double-toothed; pedicels axillary, very short, 1-flowered; carpels 10-11, 2-beaked, and with 1 short awn at the base. ♄. S. Native of Java. Resembles *S. carpinoìdes*, but differing in the leaves being more oblong and smooth, and in the fruit being more hispid, as well as smaller. Flowers yellow.

Mucronulate-carpelled Sida. Shrub 2 feet.

23 S. orienta'lis (Cav. diss. 1. p. 21. t. 12. f. 1.) leaves ovate, acuminated, toothed above, smooth; pedicels axillary, 1-flowered, rather shorter than the petioles; carpels 9-10-mutic. ♄? S. Native of the East Indies. Flowers yellow.

Oriental Sida. Shrub 1 to 2 feet.

24 S. Cape'nsis (Cav. diss. 1. p. 23. t. 12. f. 3. and 2. p. 49.) leaves ovate-lanceolate or roundish-ovate, toothed; pedicels axillary, solitary, length of petioles; stipulas ciliated, longer than petioles; carpels 10, mutic. ♄? G. Native of the Cape of Good Hope.—Pluk. alm. t. 240. f. 5. Flowers yellow.

Cape Sida. Shrub 2 to 3 feet.

25 S. microphy'lla (Cav. diss. 1. p. 22. t. 12. f. 2.) leaves elliptical, toothed; pedicels axillary, solitary, somewhat longer than the petioles; carpels 7, 2-beaked. ♃. S. Native of the East Indies. Flowers yellow, sometimes crowded on the tops of the branches.

Small-leaved Sida. Pl. 2 feet.

26 S. tridenta'ta (Cav. icon. 4. t. 312.) leaves ovate, 3-toothed at the apex, tomentose beneath; pedicels axillary, 1-flowered, solitary, equal in length with the petioles and stipulas; stem filiform, very short. ♄. S. Native of St. Domingo. Flowers yellow, small.

Three-toothed-leaved Sida. Fl. July, Aug. Clt. 1824. Shrub 1 foot.

27 S. ero'sa (Link. enum. hort. berl. 2. p. 203.) leaves rhomboid, tapering to the base, toothed in front, clothed with starry tomentum beneath; pedicels shorter than the petioles; carpels 2-beaked. ♃. S. Native of Brazil. S. emarginàta, Retz. Flowers yellow.

Bitten-leaved Sida. Fl. July, Sep. Clt. 1824. Pl. 2 feet.

28 S. via'rum (St. Hil. fl. bras. 1. p. 182.) suffruticose, trailing, prostrate; branches clothed with the permanent stipulas; leaves small, oblong-linear, obtuse at both ends, serrated at the apex, somewhat farinaceously-tomentose beneath; peduncles equal in length to the petioles; flowers glomerate; carpels 5, smooth, bifid, attenuated. ♄. S. Native of Brazil in the province of Minas Geraes by road-sides. Flowers pale-yellow.

Way-side Sida. Fl. Jan. Mar. Pl. prostrate.

29 S. cilia'ris (Lin. spec. 961.) leaves elliptical, somewhat ovate, retuse, toothed at the apex; pedicels axillary, solitary, very short; stipulas ciliated, rather longer than the flower; carpels 7, muricated, ending in two short beaks. ♂. S. Na-

tive of Jamaica, St. Domingo, and St. Thomas. Cav. diss. 1. p. 21. t. 3. f. 9. & 5. t. 127. f. 2.—Sloan. hist. t. 137. f. 2. Flowers small, reddish.

Ciliary-stipuled Sida. Fl. Aug. Sep. Clt. 1759. Pl. ½ ft.

30 S. PUSI'LLA (Cav. diss. 1. p. 6. t. 1. f. 4 and 5. t. 127. f. 1.) leaves roundish-elliptical, toothed, smooth; pedicels axillary, 1-flowered, rather longer than the petioles; carpels 5, mutic; stem prostrate. ♄. S. Native of the Island of Mahe. Flowers yellow. Pedicels solitary.

Small Sida. Pl. prostrate.

31 S. URTICÆFÒLIA (St. Hil. fl. bras. 1. p. 189.) stems suffruticose, ascending, hairy; leaves cordate at the base, deeply toothed, lower ones roundish, very blunt, pubescent on both surfaces, upper ones oblong, obtuse, tomentose; pedicels numerous, axillary, 1-flowered, shorter than the petioles; carpels 4-5, mutic. ♄. S. Native of Brazil in the province of the Missions. Petals rose-coloured.

Nettle-leaved Sida. Fl. Jan. Shrub 1 foot.

32 S. ALNIFÒLIA (Lin. spec. 961.) lower leaves roundish-ovate, cordate; upper ones oblong, toothed, cuneated, and quite entire at the base; pedicels many, axillary, shorter than the petioles; carpels 5-7, 2-beaked. ⊙. S. Native of the East Indies. Cav. diss. 1. p. 12. t. 1. f. 13.—Dill. hort. elth. t. 172. f. 211. Flowers pale copper-coloured.

Alder-leaved Sida. Fl. July, Sept. Clt. 1732. Pl. 1 to 2 ft.

33 S. INTERME'DIA (St. Hil. fl. bras. 1. p. 188. t. 34. f. 1.) stem suffruticose, short, almost simple; leaves roundish-ovate, cordate at the base, deeply toothed, pubescent above, but tomentosely pubescent and hoary beneath; pedicels usually numerous, somewhat shorter than the petioles; divisions of the calyx very narrow, acuminated, awl-shaped at the apex; ovary of 5 carpels. ♄. S. Native of Brazil on the banks of the river Uruguay. Flowers white or flesh-coloured.

Intermediate Sida. Shrub very short.

34 S. PARVIFÒLIA (D. C. prod. 1. p. 461.) leaves ovate, toothed, hoary beneath; pedicels axillary, 1-flowered, much longer than the petioles; carpels 5, rough, mutic. ♃. S. Native of the Island of Bourbon. Flowers small, yellow.

Small-leaved Sida. Pl. 1 foot.

35 S. HERMANNIOÌDES (H. B. et Kunth, nov. gen. amer. 5. p. 258.) leaves elliptical, rounded at both ends, serrate-crenate, clothed with pressed hairs above, hoary from tomentum beneath, on short petioles; pedicels axillary, solitary, 1-flowered, shorter than petioles; carpels 5, 2-beaked. ♄. S. Native of South America between Honda and the river Guali in dry places. Shrub trailing, with hairy branches. Flowers about the size of those of *Gerànium mólle*. Resembles *S. rotundifòlia*.

Hermannia-like Sida. Shrub trailing.

36 S. OVA'TA; erect, branched; leaves ovate-lanceolate, acute, serrated, on short petioles; pedicels terminal and axillary, short, solitary, 1-flowered. ♄. S. Native of Guinea.

Ovate-leaved Sida. Shrub 1 foot.

37 S. CRENA'TA; erect, branched; leaves oblong, ovate, smooth, crenated, acuminate, entire at the base; pedicels terminal; solitary, 1-flowered. ♄. S. Native of Guinea.

Crenate-leaved Sida. Shrub 1 foot.

* * *Oblongifòliæ. Pedicels elongated, distinctly jointed. Leaves linear, lanceolate, oblong or ovate, seldom cordate at the base.*

38 S. FRUTE'SCENS (Cav. diss. 1. p. 12. t. 10. f. 1.) leaves ovate-oblong, somewhat cordate, serrated, whitish beneath; pedicels axillary, 1-flowered, twice as long as petioles, jointed under the apex. ♄. S. Native of the Mauritius. Flowers yellow. Perhaps this plant is only a variety of *S. spinòsa*.

Shrubby Sida. Fl. Jul. Aug. Clt. 1810. Shrub 4 feet.

39 S. COMPRE'SSA (D. C. prod. 1. p. 462.) leaves ovate-lanceolate, acuminated, toothed, hoary beneath; branchlets compressed, beset with starry down; pedicels axillary, 1-flowered, thrice the length of the petioles, carpels 5, pubescent, rather mucronate. ⊙? G. Native of Nipaul. Flowers yellow.

Compressed-branched Sida. Fl. July, Sept. Pl. 1 foot.

40 S. BI'COLOR (Cav. icon. 4. t. 311.) leaves lanceolate, very much pointed, serrated; pedicels axillary, 1-flowered, much longer than the petioles; carpels 5, mutic. ♄. S. Native of New Spain. Stem greenish-violet with spreading branches. Petals yellowish, red on the outside, obliquely truncated at the apex. S. oblíqua, Moc. et Sesse, fl. mex. icon. ined. differs in the leaves being less acuminated. Pedicels solitary.

Two-coloured-petalled Sida. Shrub 2 feet.

41 S. ASCE'NDENS (St. Hil. fl. bras. 1. p. 182.) suffruticose, ascending; leaves serrated, but entire at the apex, pubescent on both surfaces, ciliated; peduncles axillary, hardly articulated, much longer than the petioles; calyx 5-plicate, ciliated; carpels 9, mutic, smooth. ♄. S. Native of Brazil in the southern part of the province of St. Paul. Flowers white, at length flesh-coloured.

Ascending-stemmed Sida. Fl. Jan. Pl. ½ foot.

42 S. RIBIFÒLIA (St. Hil. fl. bras. 1. p. 183. t. 34.) stem suffruticose, ascending, flexuous; leaves ovate-oblong, serrated, green above but canescent beneath; peduncles axillary, hardly articulated, solitary, 1-flowered, much longer than the petioles; calyx pentagonal, tomentose; carpels 10, wrinkled, 2-beaked. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers pale-yellow.

Gooseberry-leaved Sida. Shrub 1 foot.

43 S. CANARIE'NSIS (Willd. spec. 3. p. 755.) leaves lanceolate, toothed, smooth; pedicels axillary, 1-flowered, length of leaves; carpels 7-10, 2-beaked. ♄. G. Native of the Canary Islands, S. álba, Cav. diss. 1. p. 22. t. 3. f. 8. but not of Linnæus. Leaves whitish beneath. Flowers yellow. This is perhaps the same as *S. rhombifòlia*. Pedicels solitary.

Canary Island Sida. Fl. Ju. Sep. Clt. 1820. Sh. 3 feet.

44 S. RHOMBIFÒLIA (Lin. spec. 961.) leaves oblong-lanceolate, toothed, cuneated at the base, whitish beneath; pedicels axillary, 1-flowered, length of the leaves; carpels 8-10, 2-beaked. ♄. G. Native of Carolina and South America, and probably of the East Indies. Flowers small, yellow. Cav. diss. 1. p. 23. t. 3. f. 12.—Dill. elth. t. 172. f. 212. Pedicels solitary.

Var. β, canéscens (Cav. diss. 1. p. 23. t. 8. f. 3.) leaves more villous beneath; pedicels longer than the leaves. ♄. S. Native of Senegal.

Rhomb-leaved Sida. Fl. Ju. Aug. Clt. 1732. Sh. 1 to 3. ft.

45 S. SERRA'TA (Willd. herb. ex Spreng. syst. 3. p. 111.) leaves linear, involute, serrated, covered with stellate pubescence beneath; peduncles filiform, straight, longer than the petiole; carpels 2-pointed. ♄. S. Native on the banks of the Orinoco.

Serrated-leaved Sida. Shrub 2 feet.

46 S. POTENTILLOÌDES (St. Hil. fl. bras. 1. p. 178.) shrubby, branched; leaves linear-lanceolate, serrated, green above, canescent beneath; peduncles axillary, twin, or solitary, crowded on the tops of the branches, shorter than the leaves; calyx 10-ribbed; carpels 8-10, 2-awned. ♄. S. Native of Brazil in woods near St. Nicholas in the province of the Missions.

Potentilla-like Sida. Shrub 1 foot.

47 S. ANGUSTI'SSIMA (St. Hil. fl. bras. 1. p. 179.) stem suffruticose, branched; leaves linear, very narrow, obtuse, remotely and dentately serrated at the base; peduncles axillary, solitary, 1-flowered, longer than the petioles; carpels 7-9, wrinkled, puberulous and 2-awned at the apex. ♄. S. Native of Brazil in the western part of the province of Minas Geraes. Flowers yellow.

Very narrow-leaved Sida. Fl. Sept. Oct. Shrub 2 feet.

48 S. LINEARIFÒLIA (St. Hil. fl. bras. 1. p. 180.) leaves on short petioles, linear, remotely toothed at the apex, rather cordate at the base, pilose above but tomentosely pubescent beneath, hoary; stipulas longer than the petioles; peduncles axillary, solitary, 1-flowered; carpels smooth, mutic. ♄. S. Native of Brazil in the western part of the province of Minas Geraes. Flowers yellow.

Linear-leaved Sida. Shrub 1 foot.

49 S. HONDE'NSIS (H. B. et Kunth, nov. gen. amer. 5. p. 260.) leaves lanceolate-oblong, somewhat rhomboid, acute, cordate, serrated, hoary from tomentum beneath; pedicels axillary, 1-flowered, shorter than the leaves; carpels 8, roughish, bidentate. ♄. S. Native of New Granada near Honda. Flowers yellow. Resembles *S. rhombifòlia*. Pedicels solitary.

Honda Sida. Shrub 2 to 3 feet.

50 S. RHOMBOÌDEA (Roxb. ex journ. bot. 1814. vol. 4. p. 207.) leaves lanceolate, toothed, hoary beneath; pedicels axillary, 1-flowered, shorter than the leaves; carpels 8-10, almost awnless. ♄. S. Native of Timor and Bengal. Flowers yellow.

Rhomboid-leaved Sida. Fl. July, Aug. Clt. 1818. Shrub 1 to 2 feet.

51 S. AURANTI'ACA (St. Hil. fl. bras. 1. p. 185.) suffruticose, erect, branched; leaves small, ovate-linear, or linear, bluntish, rather cordate at the base, toothed, pubescent on both surfaces; peduncles axillary, solitary, longer than the petioles; carpels 5, gibbous, mutic, pubescent at the apex. ♄. S. Native of Brazil in the province of Minas Geraes. Corolla orange. Stigmas purple.

Orange-flowered Sida. Shrub 1½ foot.

52 S. RETU'SA (Lin. spec. 961.) leaves obovate or wedge-shaped, toothed and retuse at the apex, somewhat tomentose below; pedicels axillary, 1-flowered, or crowded at the tops of the branches; carpels 7-8, beaked. ♄. S. Native of the East Indies and the Mauritius. Cav. diss. 1. p. 18. t. 3. f. 4. and 5. t. 131. f. 2. Flowers yellow. Pedicels either shorter or longer than the leaves.—Rumph. amb. 6. p. 44. t. 19. Pedicels solitary.

Retuse-leaved Sida. Fl. July, Aug. Clt. 1818. Sh. 2 ft.

53 S. PHILI'PPICA (D. C. prod. 1. p. 462.) leaves obovate, toothed at the apex, blunt, cuneated at the base, entire, smoothish; pedicels axillary, 1-flowered, rather shorter than the leaves; carpels 8-10, almost mutic. ♄. S. Native of the Philippine islands. Flowers yellow. Pedicels solitary.

Philippine Sida. Fl. Jul. Aug. Shrub 2 feet.

54 S. RECI'SA (Link. enum. hort. berl. 2. p. 203.) leaves somewhat rhomboid, retuse, crenate in front, clothed with starry tomentum beneath as well as branches; pedicels longer than the petioles but almost thrice as short as the leaves; carpels mutic. ♃. S. Native of Brazil. Flowers yellow.

Pared-leaved Sida. Fl. June, Aug. Clt. 1823. Pl. 1 foot.

55 S. ABSCI'SSA (Willd. herb. ex Spreng. syst. 3. p. 117.) leaves linear-oblong, tapering to the base, truncate at the top, covered with hoary stellate down; peduncles capillary, equal in length to the leaves; carpels mutic. ☉. S. Native of South America. Flowers yellow. Pedicels solitary.

Cut-leaved Sida. Pl. 1 foot.

56 S. HERMANNIÆFÒLIA (Willd. herb. ex Spreng. syst. 3. p. 117.) shrubby; leaves oblong, acute, serrulated, tomentose; peduncles 1-flowered, longer than the leaves. ♄. S. Native of Mexico. Pedicels solitary. Flowers yellow?

Hermannia-leaved Sida. Shrub 1½ foot.

57 S. CALYXHYME'NIA (Gay, ined. D. C. prod. 1. p. 462.) leaves lanceolate, obtuse, toothed, hoary on both surfaces; pedicels axillary, 1-flowered, hardly double the length of the petioles; calyx tomentose. ♄. G. Native of New Holland. Perhaps this species will form a distinct genus. Flowers yellow?

Membrane-calyxed Sida. Fl. Ju. Jul. Clt. 1820. Sh. 2 ft.

58 S. MÌCANS (Cav. diss. 1. p. 19. t. 3. f. 1.) leaves ovate, obtuse, somewhat cordate, serrated, clothed with soft glittering tomentum; pedicels axillary, solitary, much longer than the petioles; carpels 9-10, each with 2 short horns. ♃. S. Native of the East Indies. Flowers yellow. Scarcely differing from *S. althæifòlia* of Kunth. nov. gen. amer. 5. p. 262.

Glittering-leaved Sida. Fl. Ju. Aug. Clt. 1820. Pl. 1 ft.

59 S. MACULA'TA (Cav. diss. 1. p. 20. t. 3. f. 7.) leaves ovate, obtuse, toothed; branchlets, calyxes, and stipulas tomentose; pedicels axillary, 1-flowered, twice as long as the petioles, somewhat racemose at the apex of the branches; carpels 9-10, 2-horned. ♄. S. Native of St. Domingo. Petals yellow, with a red spot at the base of each. S. suberòsa, Lher. stirp. p. 113. t. 54. Pedicels solitary.

Spotted-petalled Sida. Fl. Jul. Aug. Clt. 1818. Sh. 1½ ft.

60 S. ACUMINA'TA (D. C. prod. 1. p. 462.) leaves ovate, acuminated, toothed; branches, stipulas, and calyxes tomentose; axillary branchlets floriferous; pedicels 1-flowered, twice as long as the petioles. ♄. S. Native of St. Domingo. S. maculàta, Bertero, ined. Petals yellow, with a red spot at the base of each. Perhaps the same as the last.

Acuminated-leaved Sida. Fl. June, Aug. Clt. 1800. Shrub 2 feet.

61 S.? HASTA'TA (St. Hil. fl. bras. 1. p. 190. t. 34. f. 2.) stem hairy, short; leaves roundish, very obtuse, hardly cordate at the base, crenate, upper ones ovate, or ovate-oblong; peduncles axillary, solitary, a little longer than the petioles; segments of the calyx hastately-ovate; ovary 11-12-lobed. ♄. S. Native of Brazil in the province of Cisplatine by road-sides.

Hastate-sepalled Sida. Fl. Dec. Pl. ½ foot.

* * * *Cordifòliæ. Pedicels elongated. Leaves toothed, not lobed, cordate at the base.*

62 S. PILÒSA (Cav. diss. 1. p. 9. t. 8.) leaves small, ovate-cordate, obtuse, toothed; pedicels pilose, solitary, 1-flowered longer than the petioles; carpels 5, 2-beaked. ☉. S. Native of the Caribbee islands. The whole plant is hairy. Flowers small, yellow.

Var. β, glàbra (D. C. prod. 1. p. 463.) plant smooth. Native of Porto-Rico.

Pilose Sida. Fl. July, Aug. Clt. 1793. Pl. 2 feet.

63 S. BETONICÆFÒLIA (Balb. in litt. D. C. prod. 1. p. 463.) plant very hispid; leaves ovate, cordate, acutish, crenated; pedicels solitary, 1-flowered, lower ones longer than the petiole, upper ones shorter; carpels 5. netted with nerves, pubescent, 2-beaked. ♄. S. Native of St. Martha. S. híspida, Bertero but not of Pursh. Flowers white.

Betony-leaved Sida. Shrub 2 feet.

64 S. MULTICAU'LIS (Cav. diss. 1. p. 10. t. 1. f. 6.) stems many from the root; leaves roundish, cordate, acute, toothed; pedicels solitary, 1-flowered, twice as long as the petioles; carpels 5, mutic. ☉. S. Native of Malabar. Plant hispid from long hairs. Stems slender, tomentose. Flowers yellow.

Many-stemmed Sida. Pl. 2 feet.

65 S. RADÌCANS (Cav. diss. 1. p. 8.) leaves roundish, cordate, acute, ciliately-toothed; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, awnless. ♃. S. Native of the East Indies.—Rheed. mal. 10. p. 137. t. 69. Stems rooting, white from hairs. Flowers transparent with white veins.

Rooting Sida. Pl. creeping.

66 S. HEDERÆFÒLIA (Cav. diss. 1. p. 8. t. 9. f. 3.) leaves roundish, cordate, obtuse, repand; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, 2-awned; stem creeping, rooting. ♃. S. Native of St. Domingo.—Plum. ed Burm. 1.

p. 7. t. 1. f. 2. Plant with the habit of *Glechòma* not *Hédera*. Flowers yellow.

Ivy-leaved Sida. Pl. creeping.

67 S. Jussiæa'na (D. C. prod. 1. p. 463.) leaves roundish, cordate, toothed, hispid on both surfaces; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, awnless; stem filiform, prostrate. ⊙? S. Native of Peru. S. rèpens, var. Cav. diss. 1. p. 7. t. 1. f. 2. Flowers yellow, with the claws lined with red.

Jussieu's Sida. Pl. prostrate.

68 S. alpe'stris (St. Hil. fl. bras. 1. p. 186.) leaves ovate, somewhat cordate at the base, dentately-serrate, pubescent above, but subtomentose beneath; pedicels capillary, much longer than the petioles, racemose or panicled; carpels 5, 2-beaked. ♄. S. Native of Brazil in the province of Minas Geraes on mountains. Flowers violet-purple. Like *S. paniculàta* and *S. racemòsa*.

Alp Sida. Shrub 1 to 2 feet.

69 S. Martia'na (St. Hil. fl. bras. 1. p. 187.) suffruticose, clammy, branched; leaves oblong, cordate, acutish, toothed. pubescent on both surfaces; peduncles axillary, solitary, reflexed, longer than the petioles; carpels 5, mutic, wrinkled, obtuse at the apex. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers rose-coloured.

Var. β, viscosissima (St. Hil. l. c.) stem much longer, procumbent, much more branched and very clammy, and the leaves much larger. Native of Brazil on mountains near Villa Rica.

Martius's Sida. Shrub erect and procumbent.

70 S. Dombeya'na (D. C. prod. 1. p. 463.) leaves ovate, cordate, toothed, hairy on both surfaces; pedicel solitary, 1-flowered, longer than petioles; carpels 5, 2-beaked; stem filiform, prostrate. ⊙? S. Native of Peru about Lima. Flowers yellow or reddish.

Dombey's Sida. Pl. prostrate.

71 S. hu'milis (Willd. spec. 3. p. 744.) leaves roundish, cordate, serrated, pilose above; pedicels usually solitary, longer than the petioles; carpels 5. ⊙. S. Native of the East Indies. S. uniloculàris, Lher. stirp. 1. p. 127. t. 53. S. pilòsa, Retz. but not of Cav. Flowers small, yellow.

Var. α; carpels awnless. S. hùmilis, Cav. diss. 5. t. 134. f. 2.

Var. β; carpels rather mucronate. S. morifòlia, Cav. diss. 1. p. 9. t. 1. f. 1.

Var. γ; carpels 2-awned. S. veronicæfòlia, Lam. dict. no. 11. Cav. diss. 1. p. 7. t. 1. f. 3. and 5. t. 127. f. 3. Flowers whitish. Perhaps this is a distinct species.

Humble Sida. Fl. July, Aug. Clt. 1800. Pl. ½ to 2 feet.

72 S. supi'na (Lher. stirp. 1. p. 109. t. 52.) leaves roundish, cordate, bluntish, crenated, soft, velvety; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, each ending in two short horns; stem procumbent. ♃. S. Native of Hispaniola in dry fields. S. ovàta, Cav. diss. 6. t. 196. f. 2. S. procúmbens, Swartz, fl. ind. occ. 2. p. 1211. Flower pale-yellow, fugacious.

Supine Sida. Fl. July. Aug. Clt. 1821. Pl. trailing.

73 S. diffu'sa (H. B. et Kunth, nov. gen. amer. 5. p. 257.) leaves somewhat elliptic, rounded at the apex, cordate, crenate-serrated, hairy, but hoary beneath, on long stalks; pedicels solitary, axillary, almost equal in length with the leaves; carpels 5, awnless. ♄. S. Native of Mexico near Zelaya. Stem procumbent, branched, filiform, covered with soft hairs. Leaves 4 lines long. Flowers small, violet.

Diffuse-branched Sida. Pl. trailing.

74 S. subcunea'ta (St. Hil. fl. bras. 1. p. 184.) stem nearly simple; leaves somewhat cuneately-oblong, hardly cordate at the base, entire at the base, obtuse and serrated at the apex, silky-villous on both surfaces; flowers glomerate, axillary; carpels 5, mutic, smooth. ♄. S. Native of Brazil near Villa Rica. Flowers yellow, with a purple spot at the base of each petal.

Subcuneated-leaved Sida. Fl. Jan. Pl. ½ foot.

75 S. rufe'scens (St. Hil. fl. bras. 1. p. 185.) suffruticose, branched, very hairy; leaves cordate-lanceolate, serrated, very hairy; flowers crowded together as if they were capitate; calyx 10-ribbed, hairy; carpels 5, smooth. ♄. S. Native of Brazil in the province of Minas Geraes near Formigas. Flowers orange-yellow.

Rufescent Sida. Shrub 1½ foot.

76 S. flave'scens (Willd. spec. 3. p. 755.) leaves ovate, cordate, obtuse, unequally toothed, tomentose; pedicels in pairs; 1-flowered, shorter than the petioles; carpels 5, awnless. ♄. S. Native of Monte Video on rocks. S. flavéscens, Cav. diss. 1. p. 14. t. 13. f. 2. S. prostràta, Cav. diss. 1. t. 13. f. 3. Flowers reddish.

Yellowish-leaved Sida. Pl. prostrate.

77 S. calycìna (Cav. diss. 1. p. 9. t. 8. f. 2.) leaves roundish, cordate, acuminated, repandly toothed; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, awnless, pear-shaped. ♄. S. Native of the Island of Bourbon. Calyx large, 5-parted. Flowers large, yellow, spreading.

Large-calyxed Sida. Shrub 2 feet.

78 S. herba'cea (Cav. diss. 1. p. 19. t. 13. f. 1.) leaves oblong, cordate at the base, acute, toothed, hairy; pedicels 1-flowered, shorter than the petioles; carpels 9-10, 2-awned. ⊙. S. Native of the East Indies. Flowers yellow.

Herbaceous Sida. Pl. 1 foot.

79 S. rotundifòlia (Cav. diss. 1. p. 20. t. 3. f. 6. and 6. t. 194. f. 2.) plant hairy; leaves roundish-ovate, cordate, toothed, tomentose; pedicels solitary, 1-flowered, much longer than the petioles; carpels 9-10, each ending in 2 long awns. ♄. S. Native of the Island of Bourbon. Awns pilose, with the hairs protruding in bundles. Flowers yellow.

Round-leaved Sida. Fl. June, Aug. Clt. 1819. Shrub 1½ foot.

80 S. Bonarie'nsis (Willd. herb. ex Spreng. syst. 3. p. 120.) shrubby; leaves cordate, oblong, coarsely crenated, covered with stellate pubescence above, but tomentose beneath; peduncles elongated, 1-flowered; carpels very villous, mutic. ♄. S. Native of Buenos Ayres. Perhaps a species of *Abùtilon*.

Buenos Ayrean Sida. Shrub 1 to 2 feet.

81 S. ma'crodon (D. C. prod. 1. p. 464.) plant hairy; leaves roundish, cordate, coarsely crenated; pedicels solitary or twin, 1-flowered, 4-times longer than the petioles; carpels 10, awnless. ♄. S. Native of Brazil. Flowers white, flesh-coloured, rose-coloured, or scarlet.

Long-toothed-leaved Sida. Fl. Nov. Mar. Pl. prostrate.

82 S. cordifòlia (Lin. spec. 961.) leaves ovate, cordate, toothed, rather angular, bluntish, villous; pedicels solitary, 1-flowered, a little shorter than the petioles; carpels 9-10, 2-beaked. ⊙. S. Native of the East Indies and Africa. Cav. diss. 1. p. 19. t. 3. f. 2.—Dill. elth. t. 171. f. 209. Flowers sulphur-coloured.

Heart-leaved Sida. Fl. Ju. Sep. Clt. 1732. Pl. 1 foot.

83 S. biva'lvis (Cav. diss. 1. p. 13. t. 11. f. 2.) leaves ovate, cordate, acuminated, crenated, tomentose; pedicels solitary, 1-flowered, shorter than the petioles; calyxes awnedly acuminated; carpels 5, bidentate at the apex, cohering; 2-valved. ♄? S. Native of St. Domingo. Flowers yellow.

Two-valved-capsuled Sida. Shrub 3 feet.

84 S. elonga'ta (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 652.) leaves heart-shaped, grossly toothed, smooth on both surfaces; stipulas and petioles setaceously-pilose; racemes axillary, solitary, elongated, few-flowered, leafy; calyx campanulate, cili-

ated; carpels 5, awnless. ♄. S. Native of Java. Flowers yellow.

Elongated-racemed Sida. Shrub 2 feet.

85 S. HOLOSERÍCEA (Willd. herb. ex Spreng.) leaves cordate, ovate-elliptical, bluntish, serrate-crenated, clothed with close-pressed hairs above, beneath as well as the branches with soft villous tomentum; carpels 10-11, 2-beaked. ♄. S. Native on the banks of the Orinoco near Angustura. S. pellìta, H. B. et Kunth, nov. gen. amer. 5. p. 263. Flowers yellow, conglomerate.

Whole-silky Sida. Shrub 2 feet.

86 S. MULTIFLÒRA (Cav. diss. 1. p. 18. t. 3. f. 3.) leaves ovate-cordate, bluntish, toothed, tomentose; pedicels solitary, 1-flowered, longer than the petioles; carpels 9, each ending in two long beaks. ♄. S. Native of Brazil. Flowers yellow.

Many-flowered Sida. Fl. July, Aug. Clt. 1818. Sh. 2 ft.

87 S. SESSILIFLÒRA (Hook. bot. mag. 2857.) plant very soft, pubescent; leaves cordate, acute, serrated; flowers somewhat glomerate, sessile, axillary and terminal; carpels 10, pubescent, awnless; corolla hardly twice the length of the calyx. ♄. S. Native of South America about Mendoza. Flowers small, yellow.

Sessile-flowered Sida. Fl. Aug. Nov. Clt. 1827. Sh. 3 ft.

88 S. EMARGINÀTA (Willd. spec. 3. p. 757.) leaves ovate-lanceolate, cordate, toothed, truncate and retuse at the apex; pedicels solitary, 1-flowered, one-half shorter than the petioles; carpels 5, 2-beaked. ♄. S. Native of Hispaniola. S. truncàta, Lher. stirp. 1. t. 51. but not of Cav. Flowers yellow.

Emarginate-leaved Sida. Shrub 2 feet.

89 S. ARGUTA (Swartz, fl. ind. occ. 2. p. 1205.) leaves cordate, serrated, tapering to the apex, hairy on the petioles, margins and nerves beneath, the rest smooth; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, 2-awned. ♄. S. Native of Jamaica and Guadaloupe, in hedges. S. glàbra, Mill. dict. no. 14. Flowers small, of a whitish-yellow colour.

Slender-leaved Sida. Fl. July, Aug. Clt. 1732. Sh. 3 feet.

90 S. ULMIFÒLIA (Cav. diss. 1. p. 15. t. 2. f. 4. but not of Retz.) leaves ovate, cordate, acuminated, crenate, pubescent; pedicels solitary, 1-flowered, almost equal in length with the petioles; carpels 5, each ending in two long beaks. ♄. S. Native of St. Domingo. Flowers yellow. Beaks of capsule scabrous from retrograde hairs.

Elm-leaved Sida. Shrub 2 feet.

91 S. FASCICULÀTA (Willd. herb. ex Spreng. syst. 3. p. 113.) branches beset with glandular hairs; leaves cordate, oblong, acuminated, toothed, rather pilose; peduncles 1-flowered, longer than the petioles; petals longer than the calyx. ♄? S. Native of Cumana. Flowers yellow.

Fascicled Sida. Shrub 2 feet?

92 S. BORBÓNICA (Cav. diss. 1. p. 9. t. 10. f. 2.) leaves roundish, cordate, acute, toothed; pedicels solitary, 1-flowered, a little longer than the petioles; carpels 5, each ending in 2 long awns. ♄. S. Native of the Island of Bourbon. Stems hairy. Flowers yellow.

Bourbon Sida. Shrub 2 feet.

93 S. FRÀGRANS (Lher. stirp. 2. p. 111. t. 53.) leaves roundish-cordate, acuminated, crenate, clammy, hairy; pedicels solitary, 1-flowered, shorter than the petioles; carpels 5, somewhat awned. ♄. S. Native of Hispaniola. Flowers yellow.

Fragrant Sida. Shrub 2 feet.

94 S. VISCÍDULA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 651.) leaves roundish-cordate, acuminated, mucronately-crenate, clothed with stellate down beneath; petioles and stems clammy, pubescent; pedicels usually solitary, 1-flowered, shorter than the petioles, crowded at the tops of the branches; petals obcordate; carpels 5, beaked. ♄. S. Native of Java. Flowers yellow.

Viscid Sida. Shrub 1 to 2 feet.

95 S. GLUTINÒSA (Cav. diss. 1. p. 16. t. 2. f. 8.) stem clammy, tomentose; leaves roundish, cordate, acuminated, toothed, tomentose beneath; pedicels twin or tern, usually 2-flowered, longer than the petioles; carpels 5, each ending in 2 long awns. ♄. S. Native of the Mauritius. S. racemòsa, Burm. Flowers yellow?

Clammy Sida. Shrub 2 feet.

96 S. PORTORICÉNSIS (Spreng. syst. 3. p. 114.) herbaceous; leaves cordate, oblong, smooth above, but hoary and villous beneath, as well as the branches; peduncles short, many-flowered, upper ones crowded; carpels 2-beaked. ⊙. S. Native of Porto-Rico. Flowers probably yellow.

Porto-Rico Sida. Pl. 1 foot.

97 S. INTERRÚPTA (Balb. in litt.) leaves heart-shaped, acuminated, toothed, adult ones smooth, younger ones and calyxes hoary-velvety; stipulas setaceous, deciduous; flowers disposed in bundles, in a terminal interrupted spike, which is leafless at the top; carpels 8-10, 1-beaked. ♄. S. Native of the Island of St. Martha. Flower yellow.

Interrupted-spiked Sida. Shrub 1½ foot.

98 S. ALTHÆIFÒLIA (Swartz, prod. 101. fl. 2. p. 1207.) leaves cordate, somewhat angular, obtuse. serrate-crenate, tomentose; pedicels 3-4, 1-flowered, shorter than the petioles; carpels 10-12, each ending in 2 short beaks. ♄. S. Native of the south of Jamaica, New Granada and Brazil. Lher. stirp. 1. p. 112.—Sloan. hist. 1. t. 136. f. 2. Flowers orange-yellow, rather large.

Var. β, aristòsa (D. C. prod. 1. p. 465.) awns longer than the carpels, scabrous from retrograde hairs. ♄. S. Native of French Guiana. There is a plant from Guadaloupe intermediate between the species and variety.

Hollyhock-leaved Sida. Fl. June, Sep. Clt. 1820. Shrub 2 ft.

99 S. URENS (Lin. spec. 963.) leaves ovate, cordate, acuminated, toothed; peduncles axillary and terminal, 3-4-flowered, very short; carpels 5, awned; stem and petioles hispid. ♄. S. Native of Jamaica, and Guadaloupe, in arid bushy places. Cav. diss. 1. p. 15. t. 2. f. 7. There is a plant cited from Senegal, which is probably different. Flowers yellow?

Stinging Sida. Fl. July, Sep. Clt. 1781. Shrub 1 to 2 feet.

100 S. LEIOPHÝLLA (Spreng. syst. 3. p. 121.) shrubby; leaves cordate, ovate, acute, crenulated, smooth on both surfaces; peduncles sub-corymbose, short, axillary and terminal; carpels mutic, rather hispid, hoary. ♄. S. Native of Hispaniola. Perhaps a species of *Abùtilon*.

Smooth-leaved Sida. Shrub.

101 S. VERTICILLÀTA (Cav. diss. 1. p. 13. t. 1. f. 12.) leaves ovate, cordate, acuminated, toothed, and are as well as branches rather pilose; flowers axillary, many, almost sessile, and as if they were in whorls; carpels 5, almost awnless. ⊙? S. Native of Brazil at Rio Janeiro. Flowers yellow.

Whorled-flowered Sida. Fl. July, Aug. Clt. 1823. Pl. 1 ft.

102 S. PYRAMIDÀTA (Cav. diss. 2. p. 11. t. 1. f. 10. and 6. t. 194. f. 1.) leaves large, roundish, cordate, acuminated, serrate, smooth; peduncles many-flowered, forming a panicle; carpels 5, velvety, each ending in 2 short points. ♄. S. Native of St. Domingo and Porto-Rico in bushy places by the sea-side. Flowers small, yellow.

Pyramidal-flowered Sida. Fl. Jul. Aug. Clt. 1830. Sh. 2 ft.

103 S. MICRÁNTHA (Cambess. pl. us. bras. no. 49. St. Hil. fl. bras. 1. p. 190.) upper leaves subcordate, acute, unequally toothed, tomentose on both surfaces; flowers small, disposed in compound glomerate racemes; carpels 5, 2-beaked, pubescent on the back. ♄. S. Native of Brazil in the province of Minas Geraes. The shoots of this plant being very pliable are used by the inhabitants of Brazil for rocket-sticks. Flowers red?

Small-flowered Sida. Shrub 1 to 2 feet.

104 S. DUMÒSA (Swartz, fl. ind. occ. 2. p. 1209.) leaves cordate, ovate, acuminated, serrated, smooth; peduncles many-flowered, forming a panicle; carpels 5-6, roundish, roughish from very minute, stellate tomentum. ♄. S. Native of Jamaica and St. Domingo, in bushy places. Flowers pale yellow.

Bushy Sida. Fl. July, Sept. Clt. 1818. Shrub 2 feet.

105 S. FLORIBU'NDA (H. B. et Kunth, nov. gen. amer. 5. p. 258.) leaves cordate, ovate-oblong, acuminated, serrate, villous, brownish beneath; racemes axillary; carpels 5, awnless. ♄. S. Native of New Granada in arid places. Shrub very branchy; branches clothed with rusty tomentum. Pedicels capillary. Flower small, violet-coloured.

Bundle-flowered Sida. Fl. July, Sept. Shrub 2 to 3 feet.

106 S. ATROSANGUI'NEA (Jacq. icon. rar. 1. t. 136.) shrubby; branches pilose with simple hairs; leaves cordate, ovate, acuminated, serrated, rather villous; peduncles sub-corymbose, few flowered; petals reflexed; calyx nerveless; carpels 5, 2-beaked. ♄. S. Native of South America. S. capillàris. Cav. diss. 1. p. 16. et 10. t. 12. Corolla small, dark-purple.

Dark-bloody-flowered Sida. Fl. July, Sep. Clt. 1795. Shrub 4 feet.

107 S. PANICULA'TA (Lin. spec. 962.) stem beset with forked hairs; leaves ovate-cordate, toothed, acuminated, puberulous from starry tomentum beneath; peduncles loosely panicled; capillary long; calyxes nerveless; carpels 5, each ending in two short beaks. ♂. S. Native of Jamaica, Peru, and Brazil, on calcareous rocks. S. paniculàta, Cav. diss. 1. p. 16. Flowers dark-purple, but yellow according to Cav.

Panicled-flowered Sida. Fl. July, Sep. Clt. 1795. Pl. 2 ft.

108 S. VELUTI'NA (Willd. herb. ex Spreng. syst. 3. p. 115.) shrubby, pilose; leaves subcordate. ovate, obtuse, crenate, tomentose on both surfaces; peduncles sub-racemose, and are as well as the calyxes very villous; carpels 2-awned. ♄. S. Native of the East Indies. Perhaps a species of *Abùtilon*.

Velvety Sida. Shrub 1 to 2 feet.

109 S. PELLI'TA (Willd. herb. ex Spreng. syst. 3. p. 115. but not of Kunth,) shrubby; branches spreading; leaves nearly sessile, cordate, oblong, acute, serrated, covered with brown villi on both surfaces; peduncles capillary, racemose, elongated; flowers dioecious; carpels 2-awned. ♄. S. Native of New Granada. Flowers probably yellow.

Clad Sida. Shrub 1 to 3 feet.

110 S. NERVO'SA (D. C. prod. 1. p. 465,) leaves cordate, acuminated, toothed, puberulous from starry down; peduncles panicled; calyxes nerved; carpels 5, 2-beaked. ♄ ? S. Native of St. Domingo. Flowers yellow.

Nerved-calyxed Sida. Shrub 2 feet.

* * * * *Palmatilobàtæ. Leaves cleft in 3-5-7 or 9 lobes.*

111 S. JAVE'NSIS (Cav. diss. 1. p. 10. t. 1. f. 5.) leaves roundish, cordate, toothed, tricuspidate; pedicels solitary, 1-flowered, longer than the petioles; carpels 5, 2-beaked; stem reclinate. ♄ ? S. Native of Java.

Java Sida. Shrub prostrate.

112 S. OXYPHY'LLA (Moc. et Sesse, fl. mex. icon. ined. D.C. prod. 1. p. 465.) leaves cordate, toothed, villous, 3-lobed; lateral lobes short, bifid, middle one longer, acuminated; pedicels solitary, 1-flowered, length of petioles; carpels 5, 2-beaked.—Native of Mexico. Flowers probably yellow.

Sharp-leaved Sida. Pl. 1 to 2 feet.

113 S. PU'NGENS (H. B. et Kunth, nov. gen. amer. 5. p. 263.) leaves cordate, somewhat ovate, obsoletely 3-lobed, coarsely serrate-crenated, soft, pubescent above, but tomentosely-villous beneath, as well as branches; flower axillary, solitary, but collected in bundles at the tops of the branches; carpels 12, 2-awned. ♄. S. Native of South America on the banks of the Orinoco near Angustura. Flowers yellow.

Pungent Sida. Shrub 10 feet.

114 S. DIVERSIFÒLIA (Spreng. syst. 3. p. 116.) herbaceous, villous; lower leaves somewhat angularly toothed, upper ones sinuately 3-lobed, uppermost ones lanceolate; peduncles solitary, 1-flowered; capsule awned, exceeding the acuminated calyx. ⊙. S. Native of the East Indies. S. heterophýlla, Klein.

Diverse-leaved Sida. Pl. 1 to 3 feet.

115 S. HETEROPHY'LLA (Cav. icon. 5. p. 12. t. 421.) radical leaves ovate, scolloped, cauline ones 3-parted, with deeply jagged, toothed lobes, middle lobe long; pedicels solitary, 1-flowered, longer than the leaves. ⊙. S. Native on the mountains of Chili. Flowers pale-blue when dry; style violet. Fruit unknown. Perhaps a species of *Cristària*.

Variable-leaved Sida. Pl. 1 foot.

116 S. ? CRISPIFLO'RA (Cav. icon. 5. p. 11. t. 419.) leaves cordate, lobed, tomentose beneath, with stellate dots above, curled on the margins; pedicels solitary, longer than the petioles; calyxes sinuately waved, and lobed; carpels 7, mutic. ⊙. S. Native of South America at Port Desederado. Perhaps a species of *Cristària*. Corolla blue, when dry reddish.

Curled-flowered Sida. Pl. ½ foot.

117 S. TRI'LOBA (Cav. diss. 1. p. 11. t. 1. f. 11 and 5. t. 131. f. 1.) leaves cordate, crenate, 3-lobed, with the intermediate lobe longest, acute; pedicels solitary, 1-flowered, longer than the leaves; carpels 7, awnless. ♄. G. Native of the Cape of Good Hope. Jacq. schœnbr. 2. t. 142. Lower leaves undivided. Flowers at first white, then yellowish.

Three-lobed-leaved Sida. Fl. July, Sep. Clt. 1794. Shrub 3 ft.

118 S. CENTRO'TA (Spreng. syst. app. p. 259.) stem procumbent, branched, hispid, lower leaves 5-lobed, upper ones hastately trifid, glabrous; segments acute, quite entire; peduncles 1-flowered, longer than the leaves; carpels 2-awned, setosely-prickly. ♄. S. Native of? Sìda hastàta of English gardeners. Flowers yellow. Perhaps a species of *Abùtilon*.

Spurred-carpelled Sida. Fl. June, July. Clt.? Shrub 1 ft.

119 S. RICINOI'DES (Lher. stirp. 1. p. 115. t. 55.) leaves somewhat buckler-shaped, 5-lobed, lobes ovate, acute, toothed, undivided; peduncles usually 1-flowered; flowers sub-umbellate (Cav.); carpels 8-9, 2-awned. ⊙. S. Native of Peru. S. palmàta, Cav. diss. 1. p. 20. t. 3. f. 3. Malvínda palmàta, Mœnch. S. Rícini, Spreng. Flowers pale-purple. Leaves like those of *Ricinus*.

Ricinus-like Sida. Fl. June, July. Clt. 1820. Pl. 3 feet.

120 S. JATROPHOI'DES (Lher. stirp. 1. p. 117. t. 56.) leaves somewhat peltate, with 7-lanceolate, acuminated, pinnatifid, toothed lobes; peduncles many-flowered; carpels 7-8, awnless. ⊙. S. Native of Peru in sandy places. S. palmàta, Jacq. icon. rar. 3. t. 547. Cav. diss. 5. t. 131. f. 3. Flowers violet-coloured.

Jatropha-like Sida. Fl. Aug. Clt. 1787. Pl. 3 feet.

121 S. NAPÆ'A (Cav. diss. 5. p. 277. t. 132. f. 1.) leaves palmately 5-lobed, smooth; lobes oblong, acuminated, toothed; peduncles many-flowered; carpels 10, awnless, acuminated. ♃. H. Native of North America from Pennsylvania to Virginia in shady rocky places. Napæ'a læ'vis, Lin. syst. 750. Lam. ill. t. 579. f. 1. Sims, bot. mag. 2193. Napæ'a hermaphrodìta, Lin. spec. 965. Flowers small, white. From *Napææ*, the nymphs of the wood, which comes from νε, a negative, and παος, brilliant; that is to say, obscure in allusion to its habitat, in woods.

Napæa Sida. Fl. Aug. Sep. Clt. 1748. Pl. 3 to 4 ft.

122 S. DIOI'CA (Cav. diss. 5. p. 278. t. 132. f. 2.) leaves palmately 7-lobed, scabrous; lobes lanceolate, deeply toothed; peduncles many-flowered, bracteated, somewhat corymbose; flowers dioecious; carpels 10, awnless. ♃. H. Native of the upper parts of Virginia in stony places. Napæ'a scàbra, Lin.

syst. 750. Napæ'a dioíca, Lin. spec. 965. Flowers small, white, in many-flowered, terminal, or lateral peduncles.

Dioecious Sida. Fl. July, Aug. Clt. 1759. Pl. 6 feet.

123 S. MALVÆFLO'RA (D. C. prod. 1. p. 474. Lindl. bot. reg. t. 1036.) radical leaves roundish, 9-lobed, truncate at the base; lobes 3-toothed at the apex; stem leaves 5-parted; segments linear, sub-dentate; flowers disposed in terminal racemes; carpels mutic. ♃. H. Native of North America in New Albion in the vicinity of the Multomah river. Leaves and stem pilose. Flowers pale rose-coloured. An elegant plant.

Malva-flowered Sida. Fl. July, Aug. Clt. 1826. Pl. 1 to 3 ft.

***** *Pinnatilobàtæ. Leaves pinnatifid, or pinnate-parted.*

124 S. PINNA'TA (Cav. icon. 5. p. 13. t. 422. f. 1.) leaves pinnate-parted, imbricate, tomentose beneath, with quite entire lobes; flowers axillary, sessile, solitary. ♃. G. Native of Peru at the bottom of mount Chimborazo. Plant almost stemless. Root thick. Flowers large, yellow when dry.

Pinnate-leaved Sida. Pl. 2 inches.

125 S. ACAU'LIS (Cav. icon. 5. t. 422. f. 2.) leaves pinnate-parted, with ovate, tomentose, tricuspidate lobes; flowers axillary, sessile, solitary; carpels 8-10, awnless. ♃. G. Native of Peru at the bottom of mount Chimborazo. Flowers probably yellow. Root thick. Habit of the last.

Stemless Sida. Pl. 1 to 2 inches.

126 S. PICHINCHE'NSIS (H. et B. pl. æquin. 2. t. 116.) plant tufted; leaves pinnatifid, hoary from tomentum above, smooth beneath, with linear-lanceolate 3-parted segments; stems 1-flowered, bearing one leaf in the middle; carpels hairy. ♃. G. Native of Quito on the top of the burning mountain Pichincha, at the height of 7050 feet. H. B. et Kunth, nov. gen. amer. 5. p. 255. Flowers yellow?

Pichincha Sida. Pl. 1 to 2 inches.

SECT. II. ABUTILOI'DES (agreeing with the genus *Abùtilon*, in the carpels being connected as it were into a many-celled fruit.) D. C. prod. 1. p. 466. Gàya and Bastàrdia, Kunth, malv. p. 4. Carpels 15 to 40, 1-seeded, bladdery, so closely joined together as to form a many-celled capsule.

127 S. OCCIDENTA'LIS (Lin. spec. 964.) leaves oblong, cordate, toothed, somewhat lobed; pedicels solitary, shorter than the petioles; carpels 27-30, blunt, disposed into a globose fruit. ☉. S. Native of South America.—Dill. elth. 1. t. 6. Cav. diss. 1. p. 24. t. 4. f. 3. Abùtilon defléxum, Mœnch. Fruit-bearing pedicels deflexed. Flowers yellow; petals crenate.

Occidental Sida. Fl. July, Aug. Clt. 1732. Pl. 2 feet.

128 S. SYLVA'TICA (Cav. diss. 2. p. 56 and 5. p. 276. t. 133. f. 2.) leaves ovate, cordate, acuminated, crenated; pedicels twin, much longer than the petioles; carpels 30-36, awnless, collected into an umbilicated globe. ♄. S. Native of Peru in woods near the river Maragnon. Flowers pale-yellow.

Wood Sida. Shrub 10 feet.

129 S. SPICA'TA (Cav. diss. 1. p. 24. t. 8. f. 1.) leaves ovate, cordate, acute, toothed; racemes terminal, leafy; carpels 30, awnless, disposed into an umbilicated globe. ♄. S. Native of St. Domingo.—Plum. ed. Burm. 1. t. 2. Flowers yellow.

Spiked-flowered Sida. Shrub 2 feet.

130 S. GA'YA (D. C. prod. 1. p. 466.) leaves nearly elliptical, acute, obliquely cordate, sharply serrated, and are as well as branches white from tomentum; pedicels solitary, 3 times longer than the petioles; carpels 15. ♄. S. Native of Mexico. Gàya hermannioìdes, H. B. et Kunth, nov. gen. 5. p. 268. t. 475. Flowers yellow, about the size of those of *Málva rotundifòlia*. Fruit 15-celled.

Gay's Sida. Shrub 2 feet.

131 S. GAUDICHAUDIA'NA; suffruticose; cauline leaves ovate-oblong, somewhat unequal-sided, cordate at the base, obsoletely serrate-toothed, pubescently-pilose above, but pubescent beneath; branches flattened; peduncles axillary, solitary, 1-flowered; ovary 12-lobed. ♄. S. Native of Brazil in the province of Rio Janeiro. Gàya Gaudichaudiàna, St. Hil. fl. bras. 1. p. 192. Flowers white.

Gaudichaud's Sida. Shrub 1 foot.

132 S. AU'REA; suffruticose; cauline leaves cordate, oblong, acute, obsoletely toothed, tomentose, canescent below; peduncles solitary, axillary, 1-flowered; ovary villous, 12-celled. ♄. S. Native of Brazil in the province of Minas Geraes. Gàya aúrea, St. Hil. fl. bras. 1. p. 193. t. 38. Flowers golden-yellow.

Golden-flowered Sida. Fl. Sept. Oct. Shrub 1 foot.

133 S. CA'NDICANS (D. C. prod. 1. p. 466.) leaves ovate-elliptical, blunt, cordate, crenate-serrate, and are as well as branchlets hoary from tomentum; pedicels solitary, twice or thrice the length of the petioles; carpels 14-15. ♄. S. Native of Quito on the banks of the river Guancabamba. Gàya canéscens, H. B. et Kunth, l. c. p. 269. Flowers yellow.

Whitened-leaved Sida. Shrub 1 foot.

134 S. SUBTRI'LOBA (H. B. et Kunth, nov. gen. 5. p. 270. t. 476. under *Gàya*,) leaves on long stalks, ovate, acuminated, obsoletely 3-lobed, profoundly cordate, clothed with very fine tomentum, hoary beneath; pedicels solitary, when in fruit almost the length of the petioles. Native of New Granada. Resembles *S. occidentàlis*. Flowers yellow.

Subtrilobed-leaved Sida. Shrub 2 feet.

135 S. DI'STICHA (Cav. icon. 5. p. 12. t. 432.) leaves cordate or ovate, acuminated, toothed, hoary-velvety, distich; pedicels solitary, 1-flowered, 4 times longer than the petioles; carpels 10-15, awnless. ♄. S. Native of New Spain. Petals yellow, oblong-ovate, twice as long as the acuminated calyx.

Distich-leaved Sida. Shrub 2 feet.

136 S. NU'TANS (Lher. stirp. 1. p. 119. t. 57.) leaves oblong-cordate, acute, toothed, soft, velvety; pedicels usually in pairs, 1-flowered, hardly twice the length of the petioles; carpels 10, blunt, depressed. ♄. S. Native of Peru in sandy places. S. calyptràta, Cav. diss. 2. p. 57 and 5. t. 133. f. 1. Petals yellow, a little larger than the calyx. Seeds calyptrate.

Nodding-flowered Sida. Shrub 2 feet.

137 S. VISCÒSA (Lin. spec. 963.) leaves ovate, cordate, acuminated, finely serrated, tomentose, viscid; petioles and pedicels hairy; stipulas setaceous; pedicels solitary, longer than the petioles; carpels 7, awnless. ♄. S. Native of Jamaica, St. Thomas, and Porto-Rico.—Sloan. hist. 1. t. 139. f. 4. Bastàrdia viscòsa, H. B. et Kunth, nov. gen. amer. 5. p. 256. Flowers yellow. Capsule 7-celled.

Clammy Sida. Fl. July. Clt. 1795. Shrub 2 to 4 feet.

138 S. NEMORA'LIS; branched; leaves heart-shaped, acuminated, toothed, pubescent above, tomentose beneath; racemes compound, axillary, or terminal, numerous, very slender, few-flowered; capsule orbicular, 9-14-celled, pilose. ♄. S. Native of Brazil in the province of Goyaz. Bastàrdia nemoràlis, St. Hil. fl. bras. 1. p. 195. t. 39. Flowers pinkish.

Grove Sida. Fl. June. Shrub 1 foot.

139 S. BASTA'RDIA (D. C. prod. 1. p. 467.) leaves cordate, roundish-ovate, bluntly acuminated, a little crenated, tomentose from starry down; petioles and pedicels tomentose, rather viscid; carpels 5, awnless. ♄. S. Native of South America on the banks of the river Amazon. Bastárdia parvifòlia, H. B. et Kunth, nov. gen. amer. 5. p. 255. t. 472. Flowers yellow.

Bastard's Sida. Fl. July, Aug. Shrub 1 to 2 feet.

140 S. RETROFRA'CTA (D. C. prod. 1. p. 467.) leaves heart-shaped, acuminated, toothed, and are as well as pedicels tomentose; stipulas setaceous, deflexed; pedicels length of petioles usually broken at the articulation; carpels 7, pubescent, awnless.

ħ. S. Native of Martinico. H. B. et Kunth, t. 476. Calyx with acuminated, spreading, or reflexed lobes. Flowers yellow.

Retrofracted-pedicelled Sida. Shrub 2 feet.

141 S. FŒ'TIDA (Cav. diss. 6. p. 349.) leaves cordate, ovate, acute, toothed, tomentose; petioles and pedicels hairy; stipulas setaceous, somewhat spreading; pedicels one-half shorter than the petioles; carpels 7-8, awnless, collected into a globe. ⊙. S. Native of Peru and Martinico. S. viscòsa, Lher. stirp. 1. p. 52. t. 53. Abùtilon fœ'tidum, Mœnch. Pedicels rising along the stem, which is dark purple. Leaves fetid. Flowers yellow.

Fetid Sida. Fl. July, Aug. Clt. 1795. Pl. 1½ foot.

142 S. BRE'VIPES (D. C. prod. 1. p. 467.) leaves cordate, roundish, acuminated, toothed, velvety-pubescent; petioles and branches covered with spreading hairs; stipulas setaceous, somewhat erect; pedicels 1-2, axillary, 5-times shorter than the petioles; carpels 5-6, awnless. ⊙. S. Native of St. Martha. Very like the preceding. Flowers yellow.

Short-pedicelled-flowered Sida. Fl. July, Aug. Pl. 1 foot.

143 S. MAGDALE'NÆ (D.C. prod. 1. p. 467.) leaves heart-shaped, acuminated, toothletted, and are as well as petioles and branches hoary-velvety; stipulas setaceous, rather erect; pedicels a little shorter than the petioles; carpels 5, awnless, scarcely bladdery; seeds pubescent. ħ. S. Native of South America on the banks of the river Magdalena. Flowers yellow.

Magdalena Sida. Shrub 2 feet.

144 S. DENUDA'TA (Nees and Mart. nov. act. bonn. xi. p. 100.) leaves cordate, roundish, acuminated, doubly crenated, hairy; panicle terminal, naked; calyx hispid; carpels 6-7, mucronated. ħ. S. Native of Brazil at Serra do Mundo novo. Habit of *Abùtilon nudiflòrum*. Flowers yellow.

Naked-panicled Sida. Shrub 2 feet.

SECT. III. MALACROI'DEÆ. Heads of flowers involucrated.

This section of Sida agrees with Malàchra, as it is now constituted. There is much difference of opinion about the character of that genus. According to St. Hilaire, the heads of flowers are involucrated, but the calyx is simple, and the pedicels are bracteate, with 10 *stigmas and 5 separable 2-valved carpels; therefore those species, included in that genus, with a double calyx, belong to Pavònia, such as M. cordàta and M. bracteàta.*

145 S. FU'LVA (St. Hil. fl. bras. 1. p. 176.) stems trailing; leaves elliptical, very blunt, entire at the base, but serrated at the apex, smoothish above, villous beneath; leaflets of involucre elliptical-oblong; carpels mutic. ħ. S. Native of Brazil in the province of Rio Janeiro, by the sea-side. Flowers yellow.

Fulvous Sida. Pl. 1 foot.

146 S. ANO'MALA (St. Hil. fl. bras. 1. p. 177.) stem suffruticose, nearly simple; leaves erect, linear, cordate at the base, and toothed at the apex, smooth above, but pilose and scabrous beneath; petioles recurved and jointed at the apex; leaflets of involucel linear; carpels 8, 2-beaked, wrinkled, and rather muricated. ħ. S. Native of Brazil in the province of Cisplatine. Flowers red.

Anomalous Sida. Shrub ½ foot.

147 S. PLUMÒSA (Cav. diss. 1. t. 12. f. 4. St. Hil. fl. bras. 1. p. 177.) stem suffruticose; leaves elliptical, toothed; heads many-flowered; leaflets of involucre numerous; bracteas ciliately-plumose. ħ. S. Native of Brazil. Malàchra plumòsa, Desrous. in Lam. dict. 3. p. 686. Flowers yellow.

Feathered Sida. Pl. 1 foot.

† *Species not sufficiently known from the structure of the fruit not having been ascertained; but the most of which belong to section Malvínda.*

* *Leaves linear, oblong, ovate or lanceolate.*

148 S. PAUCIFÒLIA (D. C. prod. 1. p. 472.) plant smooth, much branched; leaves linear, entire; pedicels axillary, 1-flowered, shorter than the leaves, with a joint just under the flower, permanent. ħ. S. Native of the island of Timor. A very distinct species, probably allied to *S. linifòlia*.

Few-leaved Sida. Shrub 1 to 2 feet.

149 S. MILLE'RI (D. C. prod. 1. p. 472.) leaves linear-lanceolate, toothed, villous beneath; pedicels axillary, 1-flowered; stem erect, branched. ħ. S. Native of South America. S. angustifòlia, Mill. dict. no. 3. Flowers small, yellow. Carpels bidentate.

Miller's Sida. Fl. July, Aug. Clt. 1749. Shrub 1½ foot.

150 S. FRUTICÒSA (Mill. dict. no. 18.) leaves lanceolate, unequally serrated, acuminate; flowers capitate, terminal; carpels 5, bidentate. ħ. S. Native of Jamaica. Flowers small, pale-sulphur coloured. Perhaps belonging to sect. *Malacroìdeæ*.

Shrubby Sida. Fl. June, July. Clt.? Shrub 6 feet.

151 S.? HI'SPIDA (Pursh. fl. amer. sept. 2. p. 452.) plant clothed with hispid hairs; leaves lanceolate, serrated; pedicels solitary, axillary, length of leaves; involucel filiform. ♃. G. Native of North America in sandy plains of Georgia. Flowers yellow. This is perhaps a species of *Málva*.

Hispid Sida. Pl. 1 foot.

152 S. VIMI'NEA (Fisch. in Link. enum. berl. 2. p. 202.) leaves lanceolate, very long, and very entire, pilose; racemes terminal, very short. ♃. S. Native of Brazil. Stems erect, and are as well as calyx strigose. Corolla larger than the calyx, with an orange base.

Twiggy Sida. Fl. July. Clt. 1824. Pl. 1 foot.

153 S. SEMICRENA'TA (Link. l. c.) leaves broadly lanceolate, obtuse, crenated, quite entire at the base, 3-nerved, younger ones tomentose beneath; peduncles axillary, 1-flowered; segments of the calyx with long points. ♃. S. Native of Manilla. Stem erect, smooth. Calyx somewhat tomentose. Corolla yellow, a little larger than the calyx.

Half-crenated-leaved Sida. Fl. July, Sep. Clt. 1823. Pl. 1½ foot.

154 S. ACRA'NTHA (Link. l. c.) middle leaves oblong, obtuse, acutely crenated in front, upper ones lanceolate, acute, serrated in front; flowers terminal, almost sessile. ħ. S. Native of Brazil. Stem erect. Corolla yellow, a little larger than the acuminate hairy calyx.

Pointed-flowered Sida. Fl. July. Clt. 1820. Shrub 3 feet.

155 S. SPIRÆIFO'LIA (Willd. enum. suppl. 49. Link. enum. 2. p. 203.) leaves oblong-lanceolate, serrated, quite entire at the base, smooth; peduncles axillary, solitary, longer than the petioles; calyx smooth, with acuminate segments. ħ. S. Native of? Corolla yellow, a little larger than the calyx. Carpels 2-beaked.

Spiræa-leaved Sida. Fl. Aug. Sep. Clt. 1824. Shrub 2 ft.

156 S. SCHRA'NKII (D. C. prod. 1. p. 473.) leaves oblong-lanceolate, serrated, very entire at the base, rather tomentose beneath; peduncles crowded on the branchlets; calyx rather tomentose, with acute segments. ♃. S. Native of Brazil. Resembles *S. spiræifòlia*. S. Brasíla, Schrank. in Link. enum. hort. berl. 2. p. 203. but not of Cav. Flowers yellow.

Schrank's Sida. Fl. July, Aug. Pl. 1 foot.

157 S. BETULI'NA (Horn. hort. hafn. 2. p. 646.) leaves ovate-oblong, somewhat doubly serrated, quite entire at the base; peduncles axillary, many-flowered. ħ ? S. Native of South America? Flowers yellow.

Birch-like Sida. Fl. July, Aug. Clt. 1820. Pl. 2 feet.

158 S. PA'TULA (Pers. ench. 2. p. 243.) plant herbaceous, spreading, flexuous; leaves on short stalks, ovate, somewhat crenate, clothed with very soft down; flowers axillary, sessile. ⊙. S. Native of Cayenne. S. móllis, Rich. act. soc. h. nat. par. Flowers white.

Spreading Sida. Pl. 1 foot.

159 S. BRASILIE'NSIS (Cav. diss. 1. p. 37. t. 34. f. 1.) leaves ovate, acuminate, 5-nerved, hardly toothletted, tomentose beneath, as well as the branches; stipulas filiform; pedicels 1-flowered, equal in length with the petioles; capsules hairy. ♂. S. Native of Brazil. Schrad. ill. pl. bras. in Gœt. anz. Flowers yellow?

Brazilian Sida. Fl. July, Sep. Clt. 1818. Pl. 2 feet?

* * *Leaves cordate, undivided.*

160 S. GRA'CILIS (Rich. act. soc. nat. par. p. 111.) leaves oblong, cordate, quite entire, tapering to the base, reflexed; branchlets with fascicles of flowers; stem shrubby, brittle. ♄. S. Native of Antilles. Flowers yellow?

Slender Sida. Fl. July, Aug. Shrub.

161 S. CA'RNEA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 473.) leaves ovate-oblong, somewhat cordate, toothed, acute; pedicels solitary, axillary, longer than the petioles; carpels 5, distinct. ♄. S. Native of Mexico. Stem very much branched. Flowers small, flesh-coloured. Stigmas purple.

Flesh-coloured-flowered Sida. Pl. 2 feet?

162 S. VILLO'SA (Mill. dict. no. 6.) leaves somewhat cordate, sessile, serrated, rather villous; flowers axillary, crowded; carpels bidentate. ♄. S. Native of South America. An erect hairy shrub, with pale-yellow flowers.

Villous Sida. Fl. July, Aug. Clt. 1739. Shrub 3 feet.

163 S. VERRUCULA'TA (D. C. prod. 1. p. 473.) stem warty-pubescent; leaves cordate, lanceolate, acuminate, acutely crenate, pubescent; pedicels axillary, 1-flowered, filiform, a little longer than the petioles. ♄. S. Native of Brazil. S. argùta, Fisch. in Link. enum. hort. berl. 2. p. 206. but not of Swartz. Petals yellow, a little larger than the calyx.

Warted-stemmed Sida. Fl. July, Aug. Clt. 1822. Shrub 3 ft.

164 S. GRAVE'OLENS (Roxb. ex Horn. hafn. suppl. 77.) leaves roundish, cordate, somewhat acuminated; peduncles shorter than the petioles; carpels truncate, longer than the calyx. ⊙. S. Native of the East Indies. Flowers yellow.

Strong-scented Sida. Pl. $1\frac{1}{2}$ foot.

165 S. PURPURA'SCENS (Link. enum. hort. berl. 2. p. 206.) leaves cordate, acuminate, crenately-denticulate, and are as well as stems clothed with green down; pedicels axillary, 1-flowered, a little longer than the petioles. ♄. S. Native of Brazil. Petioles long, nevertheless they are shorter than the limbs of the leaves. Nerves yellowish on the under side of the leaf. Petals with narrow claws, purplish.

Purplish Sida. Fl. July, Aug. Clt. 1822. Shrub 1 to 3 ft.

166 S. PA'TENS (Andr. bot. rep. 571.) leaves cordate, acuminate, deeply serrate; peduncles solitary, longer than the petioles; carpels 5, awned. ♄. S. Native of Abyssinia. Flowers yellow. Carpels 4-5 seeded. A species of *Abùtilon*.

Open Sida. Fl. July, Sep. Clt. 1806. Pl. 4 feet.

167 S. CONTRA'CTA (Link. enum. hort. berl. 2. p. 204.) leaves cordate, acuminate, repand, rarely crenate, hoary from down; panicle contracted, bracteolate; calyxes tomentose. ♄. S. Native of Madagascar. Flowers yellow?

Contracted-panicled Sida. Fl. July, Sep. Clt. 1823. Shrub.

168 S. CONFE'RTA (Link. l. c. p. 207.) leaves cordate, acute, crenate, wrinkled, and are as well as stems clothed with yellow down; flowers almost sessile, aggregate. ♄. S. Native of Brazil. Corolla obscurely yellow, a little longer than the calyx. Calyx tomentose.

Crowded-flowered Sida. Fl. July, Sep. Clt. 1822. Shrub 1 to 3 feet.

169 S. HIRSU'TA (Mill. dict. no. 9.) leaves orbicular, cordate, crenate; stem and petioles hairy; peduncles long, axillary, 1-flowered.—Native of? Flowers small, yellow.

Hairy Sida. Pl. $1\frac{1}{2}$ foot.

170 S. SESSILIFLÒRA; erect, pilose; leaves roundish, cordate, acuminated, crenate, on long petioles; flowers axillary, and terminal, racemose, almost sessile. ♄. S. Native of Guinea.

Sessile-flowered Sida. Shrub 1 to 2 feet.

171 S. DE'BILIS; plant pilose; stem weak, simple; leaves roundish-cordate, acuminated, unequally serrated on long petioles; pedicels solitary, 1-flowered, short. ♄. S. Native of Guinea.

Weak Sida. Shrub 1 foot.

172 S. STELLA'TA; erect, branched; leaves roundish, cordate, acuminated, entire, tomentose beneath; panicle terminal; carpels 4-5, awnless. ♄. S. Native of Guinea.

Stellate-carpelled Sida. Shrub 1 foot.

173 S. PE'RSICA (Burm. ind. t. 47. f. 1.) lower leaves stalked, cordate, acuminate, upper ones sessile, lanceolate, toothed; pedicels solitary, 1-flowered. ⊙? H. Native of Persia. Cav. diss. 1. p. 35. t. 4. f. 1. Flowers yellow.

Persian Sida. Pl. 1 foot.

174 S. LASIOSTE'GA (Link. enum. hort. berl. 2. p. 205.) leaves cordate, acuminate, hoary from tomentum beneath; pedicels axillary, 1-flowered, longer than the petioles; calyxes and capsules awnless, downy-villous. ♄. S. Native of Brazil. Stem round, hoary from down. Corolla yellow, a little larger than the calyx.

Hairy-covered Sida. Fl. Aug. Sep. Clt. 1824. Shrub 2 ft.

* * * *Leaves cordate, tricuspidate or 3-lobed.*

175 S. BIFLÒRA (Cav. diss. 1. p. 37. t. 9. f. 1.) leaves ovate, cordate, acuminate, toothed, tricuspidate; peduncles twin, axillary, equal in length to the petioles. ♄. S. Native of? Flowers yellow.

Two-flowered Sida. Shrub.

176 S. PENTACA'RPOS (Roxb. ex horn. suppl. 78.) leaves cordate, somewhat tricuspidate; peduncles length of petioles; carpels awnless, very hispid. ⊙. S. Native of the East Indies. Flowers probably yellow.

Five-fruited Sida. Fl. July, Aug. Clt. 1620. Pl. 1 foot.

177 S. SESSE'I (Lag. nov. gen. 21.) leaves cordate, ovate, somewhat 3-lobed, acuminate, toothed, downy beneath; peduncles axillary, solitary, and in pairs, longer than the petiole, usually 2-flowered; carpels 5. ♄. S. Native of New Spain.

Sesse's Sida. Shrub 1 to 3 feet.

* * * * *Leaves palmately lobed.*

178 S. GERANIÒIDES (D. C. prod. 1. p. 474.) leaves hoary with down beneath, velvety above, palmately 5-lobed; lobes deeply-toothed, middle one elongated; pedicels axillary, solitary, 1-flowered, length of petioles; calyx tomentose, campanulate, truncate, with 5-6 blunt teeth. ♄. G. Native of New Holland. Petals twice as long as the calyx. Perhaps a species of *Lagunæ'a*.

Geranium-like Sida. Shrub.

179 S. ALCÆOÌDES (Mich. fl. bor. amer. 2. p. 44.) lower leaves triangular, cordate, cut, upper ones palmately multifid; corymb terminal; calyx hispid. ♃. H. Native of North America in stony fields of Kentucky and Tennassee, &c. Resembles in habit *Málva alcèa*.

Alcea-like Sida. Fl. July, Aug. Pl. 4 feet?

180 S. PHYLLA'NTHUS (Cav. diss. 5. p. 276. t. 127.) plant stemless; leaves 3-parted, with sessile, 3-parted, wedge-shaped, blunt, very entire segments; flowers solitary, inserted on the winged petioles; carpels 12. ♃. S. Native of Peru. Leaves downy, rufescent beneath. Flower large, blue or pale-violet. H. B. Kunth, nov. gen. et spec. amer. 5. p. 264. This is a very singular species.

Leaf-flowered Sida. Pl. $\frac{1}{2}$ foot.

† *Species the names of which are only known. Natives of the East Indies. S. glutinòsa, and S. cuneifòlia, Roxb.*

Cult. The species of this genus are free flowering plants of no great beauty, therefore they are hardly worth cultivating, except in botanical gardens. They are increased by seed, which they usually produce in abundance, or by cuttings in sand, under a hand-glass. Most of them require the heat of a stove. The hardy perennial species are easily increased by dividing the plants at the root in spring. Those belonging to section *Malvínda*, division *Pinnatilobàtæ*, are very singular plants, chiefly natives of Chili and Peru; none of these have yet been introduced to the gardens.

XXVIII. ABU'TILON (*αβυτιλον* is the Greek name for the mulberry tree; resemblance in the shape of the leaves). Kunth, malv. p. 4. Sìda, sect. 3. Abùtilon, D. C. prod. 1. p. 467.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft, usually angular. Style multifid at apex. Carpels capsular, usually bladdery, 5-30, in a whorl around the central axis, 1-celled, 3 or many-seeded, connected so closely together as to form a many-celled capsule, mutic or awned at the apex. This genus has been divided from *Sìda*, we shall therefore retain the authorities for the species under that genus.

* *Oligocárpæ. Carpels or cells 5 to 8.*

1 A. periplocifòlium (Lin. spec. 962. under *Sìda.*) leaves cordate, lanceolate, acuminated, quite entire. tomentose beneath; pedicels panicled, very slender, longer than the petioles, jointed under the flower; carpels 5, ovate, acuminated, 3-seeded. ⊙. S. Cav. diss. 1. p. 26. t. 5. f. 2. Flowers pale-yellow, sometimes light-purple.

Var. α, Zeylánicum (D. C. prod. 1. p. 467.) leaves narrow, rather scabrous above. Native of Ceylon.—Pluk. t. 74. f. 7. —Dill. elth. 1. t. 3. f. 2.

Var. β, Caribæ'um (D. C. prod. 1. p. 468.) leaves evidently cordate, somewhat wrinkled and smooth above. Native of Jamaica. Sloan. hist. 1. t. 139. f. 2.

Var. γ, Peruviànum (D. C. prod. 1. p. 468.) leaves evidently cordate, whitish velvety above; pedicels simple, shorter than the leaves. Native of Peru. Perhaps a distinct species.

Periploca-leaved Abutilon. Fl. July, Aug. Clt. 1691. Pl. 2 to 4 feet.

2 A. ferrugi'neum (H. B. et Kunth, nov. gen. amer. 5. p. 271.) leaves ovate, somewhat cordate, acuminated, tomentose, quite entire; pedicels simple, 1-flowered, shorter than the leaves, jointed in the middle; carpels 5, beaked, 3-seeded. ♄. S. Native of Peru near Loxa. Resembles S. periplocifòlia. Sìda ferrugínea, D. C. prod. 1. p. 460. Flowers yellow.

Rusty Abutilon. Fl. July, Aug. Clt. 1822. Shrub 3 feet.

3 A. exce'lsior (Cav. diss. 1. p. 27. t. 5. f. 3. under *Sìda,*) leaves cordate, ovate, acuminated, quite entire, yellowish and tomentose beneath; racemes panicled; carpels 5, bidentate, 3-seeded. ♄. S. Native of Peru. Flowers yellow.

Taller Abutilon. Tree 14 feet.

4 A. hernandioìdes (Lher. stirp. 1. p. 121. t. 58. under *Sìda,*) leaves somewhat peltate, cordate, ovate, acuminated, almost entire, pubescent; pedicels 1-flowered, shorter than the petioles; carpels 5, awnless. ♄. S. Native of Hispaniola. Flowers yellow.

Hernandia-like Abutilon. Fl.? Clt. 1798. Shrub 2 to 5 ft.

5 A. Lucia'num (D. C. prod. 1. p. 468. under *Sìda,*) leaves cordate, ovate-roundish, acuminated, almost entire, rather velvety above, hoary from tomentum beneath; peduncles branched, very short, disposed in an interrupted panicle; carpels 5, somewhat inflated, bidentate. Native of the Island of St. Lucia. Flowers white.

St. Lucia Abutilon. Fl. July, Aug. Clt. 1810. Sh. 2 ft.

6 A. Sunda'icum (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 652. under *Sìda,*) leaves profoundly-cordate, roundish, acuminated, grossly toothed, velvety above, hoary-tomentose beneath; flowers racemosely panicled; carpels 5, awnless; stipulas setaceous. ♄. S. Native of Java. Flowers yellow. Like *A. Luciànum.* Sìda Sundénsis, Spreng. syst. app. p. 259.

Sunda Abutilon. Shrub 1 to 2 feet.

7 A. spica'tum (H. B. et Kunth, nov. gen. amer. 5. p. 271.) leaves cordate, somewhat orbicular, much pointed, somewhat crenulated, pubescent, hoary beneath; spikes terminal, slender; flowers fascicled, usually pentagynous. ♄. S. Native of Guiana near St. Carlos del Rio Negro. Branches hoary. Flowers decandrous, about the size of those of *Gerànium parviflòrum.* Sìda spiciflòra, D. C. prod. 4. p. 468. Cells of capsule 3-seeded.

Spiked-flowered Abutilon. Sh. 2 feet.

8 A. pa'tens (St. Hil. fl. bras. 1. p. 200.) stem suffruticose, terete, branched, tomentose; leaves cordate at the base, ovate-lanceolate, entire, green, and smooth above, but hoary-tomentose beneath; panicle many-flowered; capsule inflated, smoothish, tubercled, 5-beaked, 5-celled; cells 3-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. Flowers golden yellow. This is rather an elegant plant.

Spreading Abutilon. Shrub 3 to 4 feet.

9 A. parviflòrum (St. Hil. fl. bras. 1. p. 201.) branches suffruticose, terete, twiggy, tomentose; leaves cordate, acuminated, entire green and smoothish above, but hoary-tomentose beneath; panicle few-flowered; capsule inflated, puberulous, 5-beaked, 5-celled; cells 3-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers white and yellow.

Small-flowered Abutilon. Fl. April. Shrub 1 to 2 feet.

10 A. Lechenaultia'num (D. C. prod. 1. p. 468. under *Sìda,*) leaves cordate, roundish, acuminated, quite entire, velvety above, hoary beneath; pedicels many-flowered, axillary, length of petioles, ultimate ones disposed in a racemose panicle; petals obcordate; carpels 5, somewhat bidentate. ♄. S. Native of the East Indies. Flowers yellow.

Lechenault's Abutilon. Fl. Jul. Aug. Clt. 1820. Pl. 2 to 4 ft?

11 A. nudiflòrum (Lher. stirp. 1. p. 123. t. 59. under *Sìda,*) leaves roundish, cordate, acuminated, almost entire, tomentose beneath; panicle terminal, racemose; carpels 5-7, somewhat bidentate, 3-seeded. ♄. S. Native of St. Domingo. S. stellàta, Cav. diss. 1. t. 5. f. 4.—Plum. spec. t. 3. Flowers large, yellow. This is an elegant species.

Naked-flowered Abutilon. Fl. May, June. Clt. 1731. Shrub 4 feet.

12 A. polya'ndrum (Schlecht. in Link, enum. hort. berl, 2. p. 264. under *Sìda,*) leaves cordate, short-pointed, rather crenulated, downy, green; panicle leafless. ♄. S. Native of? Resembles *A. nudiflòrum.* Flowers small, deep yellow.

Polyandrous Abutilon. Fl. May, June. Clt. 1821. Sh. 3 ft.

13 A. aurìtum (Wall. in Link, enum. hort. 2. p. 206. under *Sìda,*) leaves profoundly cordate, with a narrow recess; acuminated, toothletted, pilose above, hoary beneath; stipulas broad, cordate, eared, acuminated; flowers disposed in corymbose panicles; tube of stamens very villous; carpels 5, hairy. ♄. S. Native of Bengal. Flowers yellow?

Eared-stipuled Abutilon. Fl. May, Ju. Clt. 1823. Sh. 4 ft.

14 A. Timorie'nse (D. C. prod. 1. p. 468. under *Sìda,*) leaves cordate, roundish, acuminated, somewhat crenate, white-velvety; panicle terminal, loose; carpels 5-6, oblong, hispid. Native of the Island of Timor. Flowers yellow?

Timor Abutilon. Shrub 3 feet.

15 A. tri'quetrum (Lin. spec. 962.) leaves cordate, acuminate, serrulated, white-velvety; pedicels solitary, 1-flowered; carpels 5, awnless, 3-seeded; branches triangular. ♄. S. Na-

tive of South America. Cav. diss. 1. t. 5. f. 1. S. trisulcàta, Jacq. amer. 195. Schœnbr. t. 118.—Gærtn. fruct. 2. t. 134. According to Kunth this is the type of a separate genus. Flowers yellow with a purple bottom.

Triangular-branched Abutilon. Fl. July, Aug. Clt. 1775. Shrub 3 feet.

16 A. INCA'NUM (Link. enum. hort. berl. 2. p. 204. under *Sìda*,) leaves hoary with tomentum, cordate, somewhat acuminated, acutely crenulated; pedicels 1-flowered, longer than the petioles; calyxes and capsules tomentose. ♄. S. Native of the Sandwich Islands. Stems somewhat triangular. Flowers yellow, a little longer than those of *S. triquetra*.

Hoary-leaved Abutilon. Fl. July, Aug. Clt. 1818. Shrub 3 feet.

17 A. INÆQUILA'TERUM (St. Hil. fl. bras. 1. p. 198. t. 40.) leaves ovate-oblong, cordate at the base, unequal-sided, with a short acumen, unequally serrately-ciliated, pilose above, somewhat tomentose beneath; peduncles axillary, solitary, 1-flowered; capsule 8-celled; cells 3-seeded. ♄. S. Native of Brazil in the provinces of Minas Geraes and Rio Janeiro. Flowers golden-yellow.

Unequal-sided-leaved Abutilon. Fl. Feb. Shrub 2 feet.

18 A. GLECHOMÆFÒLIUM (St. Hil. fl. bras. 1. p. 198. t. 411.) stems numerous, terete, prostrate, puberulous; leaves cordate at the base, roundish, crenated, puberulous; flowers axillary, solitary; capsule 3-5-celled, terminated by as many points; cells 3-seeded. ♄. S. Native of Brazil in the province of Cisplatine. Flowers pinkish.

Ground-ivy-leaved Abutilon. Fl. Nov. Jan. Shrub 3 to 5 ft.

19 A. RAMIFLÒRUM (St. Hil. fl. bras. 1. p. 199.) stem simple, suffruticose, profoundly furrowed, densely tomentose; leaves cordate, acuminated, nearly entire, velvety-tomentose; flowers panicled; capsule hispid, clammy, 5-6-celled; cells 3-seeded. ♄. S. Native of Brazil in the provinces of Minas Geraes and Minas Novas. Flowers yellow.

Branch-flowered Abutilon. Shrub 5 to 6 feet.

20 A. LEUCA'NTHEMUM (St. Hil. fl. bras. 1. p. 200.) stem suffruticose, angular, pubescent; leaves cordate, acuminated, quite entire, pubescent; flowers disposed in few-flowered racemes; capsule puberulous, 5-celled, 5-beaked; cells 3-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. Flowers white.

White-flowered Abutilon. Fl. Aug. Shrub 2 feet.

21 A. PULCHE'LLUM (Bonpl. nav. t. 2. under *Sìda*,) leaves cordate, ovate-lanceolate, coarsely and unequally crenated, somewhat downy beneath from starry pubescence, scabrous above; racemes axillary, few-flowered, longer than the petioles; carpels 5, 2-awned, 2-3-seeded. ♄. S. Native of New Holland. Hook. bot. mag. t. 2753. Flowers white. Carpels 2-seeded. The plant figured in Bot. Mag. may be a distinct species, the racemes being much shorter than the petioles, and the carpels not evidently 2-awned.

Neat Abutilon. Fl. July, Aug. Clt. 1824. Shrub 2 feet.

22 A. LIGNÒSUM (Cav. diss. 1. p. 28. t. 6. f. 2. under *Sìda*,) leaves roundish, cordate, acuminate, crenate, tomentose; pedicels solitary, longer than the petioles; carpels 7-8, awnless, 3-seeded, very hard. ♄. S. Native of St. Domingo. Flowers yellow. Stem hard.

Woody-fruited Abutilon. Shrub 3 feet.

23 A. OBTU'SUM (Cav. diss. 1. p. 34. t. 9. f. 2. under *Sìda*,) leaves cordate, ovate, obtuse, toothed, tricuspidate; peduncles usually 4-flowered, umbellate, longer than the petioles; carpels 8-10, acute, 3-seeded. ♄. S. Native of? Flowers pale-yellow.

Blunt-leaved Abutilon. Shrub 3 feet.

24 A. RAMÒSUM (Cav. diss. 1. p. 28. t. 6. f. 1. under *Sìda*,) leaves ovate, cordate, unequally and deeply toothed; peduncles axillary, 4-6-flowered; carpels 5-6, 2-awned, 3-seeded. Native of Senegal and other parts of Guinea. S. Africàna, Beauv. fl. d. ow. 2. t. 116. Flowers yellow.

Branched Abutilon. Fl. July. Shrub 2 to 4 feet.

25 A. UMBELLA'TUM (Lin. spec. 962. under *Sìda*,) leaves roundish, cordate, toothed, rather angular, acuminate; peduncles usually 4-flowered, umbellate, axillary; carpels 6-11, 2-awned, 3-seeded. ⊙. S. Native of Jamaica. Jacq. hort. vind. t. 56. Cav. diss, 1. t. 6. f. 3. and 5. t. 129. f. 2. Flowers yellow. Peduncles somewhat 6-7-flowered.

Umbellate-flowered Abutilon. Fl. July, Sept. Clt. 1788. Pl. 1½ foot.

26 A. GIGANTE'UM (Jacq. Schœnbr. 2. p. 8. t. 141. under *Sìda*,) leaves roundish, cordate, crenate, tricuspidate, white and velvety on both surfaces; flowers racemose; corollas reflexed; carpels 5, many-seeded, villous. ♄. S. Native of Caraccas. Carpels 8-12, according to Jacquin. Flowers yellow.

Giant Abutilon. Fl. July, Aug. Clt. 1820. Shrub 10 ft.

27 A. E'LEGANS (St. Hil. fl. bras. 1. p. 207.) stem hairy; leaves oblong, cordate, acuminated, unequally toothed, velvety-tomentose beneath and hoary; pedicels axillary, twin, hairy; ovary 8-celled; cells 4-9-seeded. ♄. S. Native of Brazil in the provinces of Rio Janeiro and Minas Geraes. Flowers red?

Elegant Abutilon. Shrub 2 to 4 feet.

* * *Polycárpæ. Carpels or cells 9 or more.*

28 A. REFLE'XUM (Cav. diss. 1. p. 36. t. 7. and 6. t. 195. f. 1. under *Sìda*,) leaves roundish, cordate, acuminate, crenate, tomentose; pedicels solitary, longer than the petioles; petals wedge-shaped, toothed at the apex, reflexed; carpels 12, 3-seeded. ♄. S. Native of Peru in sandy places. S. retrórsa, Lher. stirp. 1. t. 64. Flowers large, scarlet, with a dusky spot at the base of each petal.

Reflexed-petalled Abutilon. Fl. July, Aug. Clt. 1799. Sh. 4 ft.

29 A. PEDUNCULA'RE (H. B. et Kunth, nov. gen. amer. 5. p. 273.) leaves roundish-ovate, acuminate, profoundly cordate, repandly-toothed, hairy above, hoary from soft tomentum beneath; pedicels solitary, very long; petals oblong-spatulate, reflexed; carpels about 20, 3-4-seeded. ♄. S. Native of South America in shady places on the banks of the river Amazon. Sìda pedunculàris, D. C. prod. 1. p. 469. Flowers purple.

Long flower-*stalked* Abutilon. Shrub 4 feet.

30 A. MICROSPE'RMUM (Cav. diss. 1. p. 29. t. 13. f. 4. under *Sìda*,) leaves roundish, cordate, acute, rather crenate; pedicels solitary, shorter than the petioles; carpels 12-13, 2-3-seeded, each ending in two fringed beaks. ♄. S. Native of? Flowers yellow. Seeds very small.

Small-seeded Abutilon. Shrub 2 feet.

31 A. UMBELLI'FERUM (St. Hil. fl. bras. 1. p. 204.) stem suffruticose, terete, densely tomentose; leaves cordate at the base, abruptly acuminated, velvety-pubescent above, but hoary and tomentose beneath; flowers in umbels on the tops of long peduncles; capsule villous, 12-13-celled, with an equal number of beaks; cells 3-seeded. ♄. S. Native of Brazil in the province of Rio Grande do Sul. Flowers pinkish.

Umbelliferous Abutilon. Shrub 7 to 8 feet.

32 A. ESCULE'NTUM (St. Hil. fl. bras. 1. p. 204.) stem shrubby, terete, tomentose with grey hairs; leaves cordate, acuminated, toothed, puberulous above, and tomentose beneath; flowers axillary, solitary; cells of capsule 3-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro, where it is called *Bencao de Deos*, and where the inhabitants dress and eat the flowers with their viands. Flowers purple. St. Hil. pl. us. bras. no. 51.

Esculent-flowered Abutilon. Fl. Sept. Shrub 7 to 8 feet.

33 A. CA'RNEUM (St. Hil. fl. bras. 1. p. 205.) stem suffruticose, terete, tomentose from rufescent hairs; leaves cordate,

acuminated, toothed, puberulous above, but clothed with white tomentum beneath; flowers solitary, terminal; capsule tomentose, 10-horned, 10-celled; cells 4-9-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. Flowers flesh-coloured.

Flesh-coloured-flowered Abutilon. Fl. Sept. Shrub 1 to 3 ft.

34 A. IMBE'RBE (D.C. prod. 1. p. 469. under *Sìda*,) leaves cordate, acute, crenulate, white and velvety on both surfaces, upper leaves almost sessile; pedicels solitary, 3-times longer than the petioles; carpels 12-13, a little inflated, rather scabrous, or ciliated, awnless. Native of Guadaloupe and St. Domingo. Resembles *A. crìspum*, Lin. Flowers yellow.

Beardless Abutilon. Shrub 2 feet.

35 A. RUFE'SCENS (St. Hil. fl. bras. 1. p. 205. t. 42.) stem shrubby, tomentose, rusty; leaves ovate-lanceolate, obtuse at the base, acuminated at the apex, toothed, smooth above, tomentose beneath; flowers corymbose; capsule subglobose, very villous, mutic, 13-16-celled; cells 4-9-seeded. ♄. S. Native of Brazil. Flowers yellow.

Var. β, confértum (St. Hil. l. c. p. 206.) leaves lanceolate, sublinear, more crowded and smooth than in var. α. Brazil at Villa Rica.

Rufescent Abutilon. Shrub 2 to 4 feet.

36 A. CRI'SPUM (Lin. spec. 964. under *Sìda*,) leaves cordate, acuminate, crenated, rather tomentose, upper ones sessile; pedicels solitary, longer than the petioles, when in fruit deflexed; carpels 12-13, 3-seeded, inflated, awnless, undulately-curled with a hairy keel. ⊙. S. Native of Carolina, New Spain, Providence, Bahama Islands and Peru by the sea-coast.—Dill. elth. t. 5. f. 5.—Cav. diss. 1. p. 30. t. 7. f. 1. and 5. t. 135. f. 2. S. amplexicaúlis, Lam. dict. 1. p. 7. Flowers white, small.

Curled-fruited Abutilon. Fl. July, Aug. Clt. 1726. Pl. 1 ft.

37 A. AMPLEXIFÒLIUM (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 469. under *Sìda*,) leaves cordate, acuminate, crenated, upper ones sessile, stem-clasping; panicle terminal, many-flowered. ♃. S. Native of Mexico. Flowers yellow. Fruit-bearing pedicels erect.

Clasping-leaved Abutilon. Pl. 1 foot.

38 A. RIVULA'RE (St. Hil. fl. bras. 1. p. 202.) stem suffruticose, terete, tomentose; leaves cordate, oblong, obtuse, toothed, tomentose; flowers umbellate; capsule very villous, mutic, 10-12-celled; cells 3-seeded. ♄. S. Native of Brazil in the province of Cisplatine on the banks of a rivulet called Rio del Samé. Flowers red.

Rivulet Abutilon. Fl. Dec. Shrub 3 to 4 feet.

39 A. VIRGA'TUM (Cav. icon. 1. p. 53. t. 73. under *Sìda*,) leaves cordate, ovate, acuminated, serrated, puberulous; pedicels solitary, longer than the petioles; petals shorter than the calyx; carpels 7-9, 2-awned, 3-seeded. ♄. S. Native of Peru. Flowers yellow.

Twiggy Abutilon. Fl. July, Aug. Clt. 1818. Shrub 3 ft.

40 A. MICRA'NTHUM (St. Hil. fl. bras. 1. p. 208.) leaves cordate, acuminated, toothed, tomentose beneath; flowers large, racemosely-glomerated; capsule globose, mutic, very villous, 12-celled; cells 4-9-seeded. ♄. S. Native of Brazil.

Small-flowered Abutilon. Shrub 2 to 6 feet.

41 A. ARBÒREUM (Lin. fil. suppl. 397. Lher. stirp. p. 131. t. 63. under *Sìda*,) leaves orbicular, cordate, acuminate, crenated, tomentose; stipulas ciliated; pedicels longer than the leaves; carpels 13-15, truncate, villous, 5-seeded. ♄. S. Native of Peru. S. Peruviàna, Cav. diss. 1. p. 36. t. 7. f. 8. and 5. t. 130. S. grandifòlia, Poir. suppl. 1. p. 31. Flowers large, sulphur-coloured, or nearly white.

Tree Abutilon. Fl. July, Aug. Clt. 1772. Tree 12 feet.

42 A. MONTA'NUM (St. Hil. fl. bras. 1. p. 207.) stem shrubby, terete, branched, pubescent; leaves cordate, acuminated, serrate, puberulous above, tomentose, and much paler beneath; flowers axillary, solitary, and twin; capsule villous, mutic, 10-celled; cells 4-9-seeded. ♄. S. Native of Brazil in the provinces of Rio Janeiro and Minas Geraes. Flowers purple.

Mountain Abutilon. Shrub 4 to 6 feet.

43 A. MAURITIA'NUM (Jacq. icon. rar. 1. t. 137. under *Sìda*,) leaves roundish, cordate, acuminate, toothed, tomentose beneath; pedicels longer than the petioles; carpels 30, 3-seeded, truncated, beaked, villous, longer than the calyx. ♄. S. Native of the Mauritius. S. planiflòra, Cav. diss. 1. p. 32. t. 7. f. 4. and 5. t. 135. f. 1. Flowers orange-coloured.

Mauritian Abutilon. Fl. July, Sept. Clt. 1789. Sh. 3 ft.

44 A. ATROPURPU'REUM (Blum. bijdr. ex Schlecht. Linnæa, 1. p. 652. under *Sìda*,) leaves orbicularly-cordate, acuminated, unequally crenate, pubescent above from simple and stellate hairs, tomentose beneath; stipulas leafy, unequally cordate; panicle terminal; pedicels much shorter than the petioles; carpels about 10, truncate, acuminated, longer than the calyx. ♄. S. Native of Java. Flowers dark-purple.

Dark-purple-flowered Abutilon. Shrub 2 to 3 feet.

45 A. GLOBIFLÒRUM (Hook, bot. mag. 2821. under *Sìda*,) smooth; leaves on long stalks, cordate, serrated, tapering much at the apex and entire; peduncles solitary, length of petioles; calyx truncate at the base; corolla subglobose. ♄. S. Native of the Mauritius. Stamens collected into a globe at the top of the tube, exserted beyond the corolla. Style tipped by 10 capitate stigmas. Carpels 10. Flowers large, globose, cream-coloured. This is certainly a species of *Periptera*, or a new genus.

Globe-flowered Abutilon. Fl. Nov. Clt. 1825. Sh. 4 to 5 ft.

46 A. TILIÆFÒLIUM (Fisch. cat. hort. goren. 1808. D. C. prod. 1. p. 470. under *Sìda*,) leaves roundish, cordate, with a broad recess, acuminate, toothed, soft, pubescent; pedicels shorter than the petioles; carpels 15, hairy, 2-awned. ⊙. G. Native of China and Thibet. Willd. enum. 722. Jacq. fil. eccl. 1. f. 35. Flowers yellow. Leaves large.

Lime-tree-leaved Abutilon. Fl. July, Aug. Clt. 1821. Pl. 2 feet.

47 A. MU'TICUM (Delil. ill. æg. no. 633. under *Sìda*,) leaves orbicular, cordate, somewhat acuminated, coarsely toothed, clothed with soft tomentum on both surfaces; pedicels shorter than the petioles; carpels 25-30, hairy, awnless, scarcely longer than the calyx. Native of Upper Egypt. Flowers yellow.

Awnless-capsuled Abutilon. Pl. 1 foot.

48 A. CIRCINNA'TUM (Willd. herb. ex Spreng. syst. 3. p. 119. under *Sìda*,) shrubby; leaves roundish, cordate, acutish, nearly entire, tomentose; peduncles 1-flowered, elongated; capsule bladdery. ♄. S. Native of South America near the river Amazon. Flowers probably yellow.

Circinnate-leaved Abutilon. Shrub 1 to 3 feet.

49 A. SPECIÒSUM (Willd. herb. ex Spreng. syst. 3. p. 119. under *Sìda*,) shrubby; leaves cordate, acuminated, crenately-serrate, stellately-tomentose; stipulas obsolete; peduncles twin, elongated, 1-flowered; carpels mutic. ♄. S. Native of Brazil and Cumana. Flowers rose-coloured. Perhaps a species of *Sìda*.

Shewy Abutilon. Shrub 4 feet?

50 A. AMERICA'NUM (Lin. spec. 963. under *Sìda*,) leaves cordate, oblong, undivided, tomentose; pedicels shorter than the leaves; carpels 12, tomentose, acuminated, length of the calyx. ♄. S. Native of Jamaica. Flowers large, yellow.

American Abutilon. Fl. July, Aug. Clt. 1733. Sh. 6 ft.

51 A. AVICE'NNÆ (Gært. ex D. C. prod. 1. p. 469.) leaves roundish, cordate, acuminated, toothed, tomentose; peduncles shorter than the petioles; carpels 15, truncate, 2-beaked, hairy, 3-seeded. ⊙. H. Native of the South of France, Switzerland, and both Indies. In North America from Pennsylvania to Carolina

in cultivated ground. Sìda Abùtilon, Lin. spec. 963. Houtt. syst. 8. t. 61. Schkuhr. handb. t. 190. Flowers deep yellow.

Avicenna's Abutilon. Fl. July, Aug. Clt. 1596. Pl. 3 or 4 feet.

52 A. PAUCIFLÒRUM (St. Hil. fl. bras. 1. p. 206.) stem suffruticose, terete, hairy; leaves roundish, heart-shaped, acuminated, unequally toothed, velvety on both surfaces, hoary beneath; flowers axillary, solitary; capsule villous, 12-13-horned, 12-13-celled; cells 4-9-seeded. ♄. S. Native of Brazil in the southern part of the province of Cisplatine. Flowers red.

Few-flowered Abutilon. Shrub 4 to 5 feet.

53 A. JACQUÌNI; leaves cordate, undivided, acuminate, crenated, downy; peduncles length of petioles; carpels 10, 3-seeded. ⊙. S. Native of Jamaica. Sìda abutiloìdes, Jacq. obs. 1. p. 17. t. 7. Lavatèra Americàna, Lin. spec. 973. Flowers yellow.

Jacquin's Abutilon. Pl. 4 feet.

54 A. ASIA'TICUM (Lin. spec. 964. under *Sìda*,) leaves cordate, ovate-oblong, toothed, velvety; pedicels longer than the petioles; carpels 20, 3-seeded, truncated, acute, almost equal in length with the calyx, woolly. ⊙. S. Native of the East Indies. Cav. diss. 1. p. 31. t. 7. f. 2. and 5. t. 128. f. 1. Lher. stirp. p. 130. Flowers small, yellow.

Asiatic Abutilon. Fl. July, Aug. Clt. 1768. Pl. 2 feet.

55 A. SONNERATIA'NUM (Cav. diss. 1. p. 29. t. 6. f. 4. under *Sìda*,) leaves roundish, cordate, acuminated, toothed, tomentose; peduncles solitary, longer than the leaves; carpels 9, 3-seeded, truncate, obtuse, longer than the calyx. ♂? S. Native of the Cape of Good Hope. Resembles *A. Asiáticum*. Flowers yellow.

Sonnerat's Abutilon. Fl. June, July. Clt. 1806. Pl. 2 ft.

56 A. CISTIFLÒRUM (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 652. under *Sìda*,) leaves ovate, cordate, acuminated, crenate-toothed, clothed with white tomentum; peduncles axillary, solitary, 1-flowered, twice the length of the petioles; carpels 10-13, obtuse, villous; stipulas setaceous, spreading. Like *Sìda dísticha*. Flowers probably yellow.

Cistus-flowered Abutilon. Shrub 1 to 2 feet.

57 A. IBARRE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 272.) leaves roundish, profoundly cordate, acuminate, on long stalks, crenate-toothed, clothed with very soft tomentum, hoary above, and white beneath; peduncles axillary, 2-flowered. ♄. S. Native of Quito in South America. Flowers pale yellow. Sìda Ibarrénsis, D. C. prod. 1. p. 470. Cells of capsule 3-seeded.

Ibarra Abutilon. Shrub 6 feet.

58 A. PETIOLA'RE (H. B. et Kunth, nov. gen. et spec. amer. l. c.) leaves roundish, profoundly cordate, acuminate, on long stalks, doubly toothed, soft, pubescent above, but clothed with white tomentum beneath; pedicels axillary, 1-flowered; carpels 11, truncate and angular at the apex, 3-4-seeded. ♄. S. Native of New Granada. Sìda petiolàris. D. C. prod. 1. p. 478. Flowers white, the size of those of *A. Jacquìni*.

Long *leaf-stalked* Abutilon. Shrub 4 feet.

59 A. GEMINIFLÒRUM (H. B. et Kunth, nov. gen. et spec. amer. 5. p. 274. t. 474.) leaves ovate, cordate, acuminated, crenate-serrate, hairy; pedicels axillary, twin, 1-flowered; flowers with 13 styles; calyxes clothed with rusty tomentum. ♃. S. Native of Caraccas. Sìda geminiflòra, D. C. prod. 1. p. 470. Resembles *A. sylváticum*, but differs in having 4 ovulæ in each cell. Flowers from white to yellow.

Twin-flowered Abutilon. Pl. 1 to 2 feet.

60 A. POPULIFÒLIUM (Lam. dict. 1. p. 7. under *Sìda*,) leaves roundish, cordate, acuminate, unequally and repandly toothed, tomentose; peduncles longer than the petioles; carpels 11-19, 3-seeded, truncate, acute, longer than the calyx. ⊙. S. Native of the East Indies. Beloère, Rheed. mal. 6. t. 45. S. Beloère, Lher. stirp. 1. p. 130. S. populifòlia, Cav. diss. 1. p. 32. t. 7. f. 9. S. heteromíschos, Cav. diss. 2. p. 55. and 5. p. 275. t. 128. f. 2. Flowers yellow. Stem dark purple.

Poplar-leaved Abutilon. Fl. July, Aug. Clt. 1820. Pl. 2 to 6 feet.

61 A. HI'RTUM (Lam. dict. 1. p. 7. under *Sìda*,) leaves roundish, cordate, acuminate, toothed, clothed with white tomentum beneath; peduncles longer than the petioles; carpels 15-17, truncate, acute, shorter than the calyx. ⊙. S. Native of the East Indies.—Rumph. amb. 4. t. 10? S. pilòsa, Lher. stirp. 1. p. 130. Branches hairy with pili, but much less so than in the following species. Flowers pale-yellow.

Hairy Abutilon. Fl. July, Aug. Clt. 1820. Pl. 3 feet.

62 A. MÓLLE (Ort. dec. p. 65.) leaves cordate, orbicular, acuminate, unequally crenate-toothed, clothed with soft pubescence; peduncles 1-2-flowered, shorter than the petioles; carpels 8-10, 3-seeded, mucronate, acuminated, a little longer than the calyx; branches very hairy. ♄. S. Native of Peru. Hook. bot. mag. 2759. S. grandifòlia, Willd. enum. p. 724. Flowers yellow, rather large.

Soft-leaved Abutilon. Fl. Nov. Dec. Clt. 1816. Shrub 10 to 20 feet.

63 A. MOLLI'SSIMUM (Cav. diss. 2. p. 49. t. 14. f. 1.) leaves large, roundish, cordate, acuminate, toothed, velvety; peduncles usually 2-flowered, shorter than the petioles; carpels 11, truncate, 3-seeded, bidentate, equal in length with the 10-angled calyx. ♄. S. Native of Peru in woods near the river Maragnon. S. cistiflòra, Lher. stirp. 1. p. 127. t. 61. Corolla sulphur-coloured, a little longer than the calyx. Stem tomentose.

Very-soft-leaved Abutilon. Fl. June, July. Clt. 1789. Shrub 4 to 5 feet.

64 A. PU'LCHRUM (Coll. hort. rip. p. 129. t. 34. under *Sìda*,) stem erect, and is as well as the petioles very villous; leaves orbicularly cordate, unequally toothed, somewhat 3-lobed at the apex; peduncles solitary, 1-flowered, shorter than the petioles; carpels 10-12, globose, aggregate, mutic, 3-seeded. ♄. S. Native of the island of St. Martha. Flowers elegant, yellow, with a dark centre.

Fair Abutilon. Fl. July, Aug. Clt. 1826. Shrub 1 to 3 feet.

65 A. EXSTIPULA'RE (Cav. diss. 2. p. 56. t. 14. f. 2.) leaves ovate, cordate, acuminate, tomentose, without stipulas; pedicels solitary, shorter than the petioles; carpels 30, truncate, awnless, shorter than the calyx, 1-3-seeded. ♄. S. Native of the island of Bourbon. Flowers yellow.

Exstipular Abutilon. Shrub 3 feet.

66 A. TRUNCA'TUM (Cav. diss. 1. p. 35. t. 6. f. 7.) leaves roundish, cordate, truncate and obtuse at the apex, toothed, tomentose; pedicels longer than the petioles; carpels 9, awnless. ⊙. S. Native of St. Domingo. Carpels 1, or perhaps many-seeded. Flowers sulphur-coloured.

Truncate-capsuled Abutilon. Pl. 2 feet.

67 A. TERMINA'LE (Cav. diss. 1. p. 29. t. 6. and 6. t. 195. f. 2. under *Sìda*,) leaves ovate, cordate, deeply crenate, tomentose; racemes terminal, elongated, bracteate; carpels 10-12, awnless, villous, capitate, larger than the calyx, 3-seeded. ♄. S. Native near Monte-Video, &c. Flowers yellowish, rose-coloured on the outside. St. Hil. fl. bras. 1. p. 203.

Terminal-flowered Abutilon. Shrub 2 to 4 feet.

68 A. AFFI'NE (Spreng. syst. 3. p. 121. under *Sìda*,) shrubby; leaves cordate, oblong, crenate-toothed, hoary-tomentose beneath; peduncles terminal, corymbose; calyx silky; capsule villous, mutic. ♄. S. Native of Monte Video.

Allied Abutilon. Shrub.

69 A. PERMÓLLE (Willd. enum. p. 725. under *Sìda*,) leaves roundish, cordate, acuminate, unequally crenate, tomentose; peduncles axillary, solitary, upper ones somewhat racemose;

carpels 9-10, beaked, almost equal in length with the calyx, 3-seeded. ♄. S. Native of? Flowers yellow.

Softest-leaved Abutilon. Fl. July, Aug. Clt. 1817. Shrub 7 to 8 feet.

70 A. grandiflòrum; erect, branched, pubescent; leaves cordate, lobately-toothed, roundish, on very long petioles; peduncles solitary, 1-flowered; carpels numerous, pubescent. ♄. S. Native of Guinea. Flowers large, yellow.

Great-flowered Abutilon. Shrub 1 to 2 feet.

71 A. cornu'tum (Willd. enum. p. 724. under *Sìda*,) leaves ovate, cordate, toothed, clothed with soft pubescence on both surfaces; flowers panicled; carpels inflated, horned. ♄. S. Native of South America. Flowers yellow. Cells of capsule 5-6, 3-seeded. This plant belongs to section *Oligocárpæ*.

Horned-capsuled Abutilon. Shrub 10 feet.

72 A. pube'scens (Cav. diss. 1. p. 33. t. 7. f. 6. under *Sìda*,) pilose; leaves roundish, cordate, acuminate, angularly-crenate, tomentose; pedicels longer than the petioles; carpels 15, bidentate, truncate, larger than the calyx, 3-seeded. ♄. S. Native of St. Domingo. Flowers whitish.

Pubescent Abutilon. Pl. 3 feet.

73 A. orbicula'tum (D. C. prod. 1. p. 471. under *Sìda*,) leaves ovately-orbicular, somewhat kidney-shaped, toothed, hoary beneath; pedicels longer than petioles; carpels 13, younger ones tomentose, blunt, adult ones smooth, bidentate. ♄. G. Native of China. Flowers yellow?

Orbicular-leaved Abutilon. Fl. June, July. Clt. 1820. Shrub 3 feet.

74 A. I'ndicum (Lin. spec. 964. under *Sìda*,) leaves cordate, somewhat lobed, soft; stipulas reflexed; pedicels erect, 3 times longer than the petioles; carpels 13-15, 3-seeded, scabrous, longer than the calyx. ⊙. S. Native of the East Indies. Cav. diss. 1. p. 33. t. 7. f. 10. Abùtilon elongàtum, Mœnch. Flowers yellow.

Indian Abutilon. Fl. July, Aug. Clt. 1739. Pl. 2 feet.

75 A. vesica'rium (Cav. diss, 2. p. 55. t. 14. f. 3. under *Sìda*,) leaves ovate, cordate, toothed, sòmewhat tricuspidate, white beneath; pedicels twice as long as the petioles; carpels 10, truncate, awnless, acutish, 5-seeded. ♄. S. Native of Mexico. Flowers yellow.

Bladdery-capsuled Abutilon. Fl. July, Aug. Clt. 1822. Shrub 3 feet.

76 A. glau'cum (Cav. icon. 1. p. 8. t. 11. under *Sìda*,) leaves roundish, cordate, acuminate, coarsely toothed, clothed with soft glaucous tomentum; lower pedicels shorter than the petioles, upper ones longer; carpels 12-15, obtuse, shorter than the calyx; stem beset with glandular hairs. ♄. S. Native of Senegal. Flowers yellow. Carpels 1-3-seeded.

Glaucous-leaved Abutilon. Fl. Jul. Aug. Clt. 1824. Sh. 3 ft.?

77 A. a'lbidum (Willd. enum. p. 722. under *Sìda*,) leaves roundish, cordate, acuminate, toothed, hoary on both surfaces from soft tomentum; pedicels length of petioles; carpels 12-15, truncate, acute, almost equal in length with the calyx. ♄. G. Native of the Canary Islands. Sìda, no. 340. Bory. ess. isl. fort. Pedicels sometimes shorter, sometimes longer than the petioles. Flowers yellow. Carpels hairy, many-seeded?

Whitish-leaved Abutilon. Fl. July, Aug. Clt. 1822. Shrub 2 feet.

78 A. crassifòlium (Lher. stirp. 1. p. 125. t. 60. under *Sìda*,) leaves ovate, cordate, toothed, rather tricuspidate, hoary with tomentum; pedicels length of petioles; carpels 9-10, 2-pointed, 3-seeded. ♄. S. Native of Hispaniola. S. tricuspidàta, Cav. icon. p. 30. t. 6. f. 5. Flowers yellow.

Var. β, tomentòsum (Cav. descr. 164.) branches 3 or 4-sided. Native of America.

Thick-leaved Abutilon. Shrub 2 feet.

79 A. molli'comum (Willd. enum. p. 725. under *Sìda*,) leaves ovate-oblong, cordate, unequally toothed, tricuspidate, clothed with very soft tomentum; pedicels shorter than the petioles; carpels 9, acuminate, inflated. ♄. S. Native? S. serícea, Cav. descr. p. 164. Flowers yellow. Carpels 2-seeded.

Soft-haired Abutilon. Fl. July, Aug. Clt. 1816. Shrub 4 ft.

80 A. vitifòlium (Cav. icon. 5. p. 12. t. 420. under *Sìda*,) leaves cordate, 5-7-lobed; lobes acuminate, serrate, tomentose beneath; peduncles longer than the petioles, branched, umbellate; carpels 9, 6-seeded, each with 2 long awns at the apex. ♄. G. Native of Chili. Flowers large, rose-coloured.

Vine-leaved Abutilon. Shrub 6 feet.

81 A. acerifòlium (Lag. nov. gen. p. 21. under *Sìda*,) leaves cordate, somewhat peltate, 3-5-lobed, unequally toothed, villous; pedicels 1-flowered, longer than the petioles; carpels 10-12, inflated, each with 2 awns at the base on the outside. ♄. S. Native of New Spain. S. spínifex, and perhaps S. palmàta of Sesse, fl. mex. icon. ined. ex D. C. The whole plant is hispid. Flowers blue.

Maple-leaved Abutilon. Fl. July, Aug. Clt. 1820. Shrub 3 to 6 feet.

82 A. ri'gidum; erect, branched; leaves oval, obtuse, usually acuminated, unequally serrated on short petioles, white beneath from pubescence; pedicels solitary, 1-flowered, equal in length to the leaves. ♄. S. Native of Guinea. Flowers large, yellow. Perhaps a species of *Sìda*.

Stiff Abutilon. Shrub 2 to 4 feet.

83 A. Veluti'num; erect, branched; leaves ovate, acute, serrated, somewhat cordate at the base, pubescent; peduncles solitary, 1-flowered, longer than the leaves. ♄. S. Native of Guinea. Plant soft from pubescence. Perhaps a *Sìda*.

Velvety Abutilon. Shrub 2 to 4 feet.

Cult. The species of *Abùtilon* will thrive well in any light soil, and cuttings of them will root freely in sand or mould under a hand-glass, in heat. Some of the species are rather ornamental when in flower.

XXIX. NUTTA'LLIA (in honour of Thomas Nuttall, F.L.S. professor of mineralogy in the university of New Cambridge, North America, an acute botanist, author of Genera of North American Plants, &c.) Dick's mss. Hook. exot. fl. 3. t. 171. Callirrhòe, Nutt. in journ. acad. n. sc. philad. v. ii. p. 181.

Lin. syst. *Monadélphia, Polyándria*. Calyx naked, quinquefid. Anthers numerous. Stigmas numerous, filiform. Carpels numerous, 1-seeded, disposed in a ring or whorl around the central axis, not opening spontaneously as in *Málva* and *Althæ'a*. Elegant plants, with pedate leaves, and rather large reddish-purple flowers. Roots tuberous, rather fusiform.

1 N. digita'ta (Dick's mss. Hook. exot. fl. t. 171.) glaucous; leaves subpeltate 6-7-parted, with linear-entire or 2-parted segments, upper ones more simple; peduncles long, axillary, 1-flowered. ♃. H. Native of North America in prairies in the Arkansa territory. Callirrhòe digitàta, Nutt. l. c. Sìda digitàta, Spreng.

Digitate-leaved Nuttallia. Fl. Aug. Clt. 1824. Pl. 2 to 3 ft.

2 N. peda'ta (Nutt. mss. Hook. exot. fl. 3. t. 172.) leaves lacineately-pedate, upper ones trifid; flowers panicled. ♃. H. Native of North America in prairies in the Arkansa territory. Sìda pedàta, Spreng. This plant differs from the last in the panicled inflorescence.

Pedate-leaved Nuttallia. Fl. Aug. Clt. 1824. Pl. 2 to 3 ft.

Cult. These plants deserve to be cultivated in every collection on account of the elegance of their blossoms. They thrive best in peat soil mixed with sand, or vegetable mould. They may be increased by seeds, or sometimes by dividing the plants at the root. They require shelter in severe weather.

XXX. LAGUNE'A (in honour of Andreas Laguna, a Spanish physician and botanist of the sixteenth century. He translated Dioscorides into Spanish). Cav. diss. 3. p. 173. D. C. syst. 1. p. 474.—Solándra, Murr. comm. goet. 1784. Lam. ill. t. 580. but not of Swartz.

LIN. SYST. *Monadélphia, Polyándria.* Calyx naked, 5-cleft. Petals 5, spreading, with narrow claws. Anthers inserted on the sides and top of the tube. Stigmas 5. Capsules 5-celled, 5-valved, with a dissepiment in the middle of each valve, connected with the central filiform permanent axis. This genus differs from *Hibíscus* as *Sìda* does from *Málva.* Flowers axillary, solitary.

1 L. LOBA'TA (Willd. spec. 3. p. 733.) leaves cordate, 3-lobed; lobes oval-oblong, acuminate, toothed, with very narrow recesses. ⊙. H. Native of the Island of Bourbon. Solándra lobàta, Murr. com. goet. 1784. p. 21. t. 1. Triguèra acerifòlia, Cav. diss. 1. p. 41. t. 11. f. last. Lagunæ'a lobàta, Cav. diss. 5. t. 136. f. 1. Hibíscus Solándra, Lher. stirp. 1. t. 49. Flowers truly monopetalous, with a 5-parted limb of a white colour; they are disposed in something like a spike at the tops of the branches.

Lobed-leaved Lagunea. Fl. July, Aug. Clt. 1787. Pl. 2 ft.

2 L.? TRI'COLOR; pilose; stem erect, simple; leaves lanceolate, acute, rather cordate at the base. ⊙. S. Native of Sierra Leone. The corolla is of 5 petals of the same colour as those of *Hibíscus triònum.* Perhaps a distinct genus.

Three-coloured-flowered Lagunea. Pl. ½ foot.

3 L. SINUA'TA (Horn. hafn. 645.) leaves cordate, 3-lobed; lobes oblong, acuminate, toothed, with wide recesses. ⊙. S. Native of? Perhaps a variety of *L. lobàta.* L. angulàta, Hortul. Flowers purplish-white?

Scolloped-leaved Lagunea. Fl. July, Aug. Clt. 1817. Pl. 2 ft.

4 L. TERNA'TA (Cav. diss. 5. p. 279. t. 136. f. 2. under *Solándra,*) lower leaves 3-parted; lobes oblong, entire, middle one very long; upper leaves somewhat halbert-shaped, elongated. ⊙. S. Native of Senegal. Stem villous.

Ternate-leaved Lagunea. Pl. 1 foot.

5 L. ACULEA'TA (Cav. diss. 3. p. 173. t. 71. f. 1.) leaves 3-parted, with oblong-linear, deeply-toothed lobes; stem prickly, tomentose. ⊙? S. Native of Pondichery. Flowers yellow. Stigmas red. Calyx ruptured longitudinally. This plant is called *Cattacacheree* by the inhabitants of Pondichery.

Prickly Lagunea. Pl. 1½ foot.

Cult. Not worth cultivating except in botanical gardens. The seeds require to be sown on a moderate hot-bed, and when the plants are of sufficient size they should be shifted into other pots, and then placed in the green-house or planted out in the open border in a sheltered situation.

XXXI. INGENHOU'ZIA (Ingenhouze, a Mexican botanist.) Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 474.

LIN. SYST. *Monadélphia, Polyándria.* Calyx naked, 3-parted into ovate-lanceolate, acuminate lobes. Petals 5, with a campanulate urceolus on the inside of the petals. Stamens indefinite, monadelphous. Style 1. Fruit unknown.

1 I. TRI'LOBA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 474.) ♂. G. Native of Mexico. Herb resembling in habit *Gossýpium.* Leaves stalked, 3-lobed; lobes ovate-lanceolate, acute, entire. Pedicels 1-flowered, opposite the leaves. Flowers yellowish-red.

Three-lobed-leaved Ingenhousia. Pl. 2 feet?

Cult. The seeds of this plant will require to be raised on a hot-bed frame, and when the plants are of sufficient size they should be separated and planted singly in other pots, and after they have recovered this shifting, they may then be placed in the stove or greenhouse, where they will ripen their seed.

XXXII. EURYA'NTHE (from *ευρυς, eurys,* wide, and *ανθος, anthos,* a flower,) Cham. et Schlecht. in Linnæa. 3. p. 206.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 5-parted, divided nearly to the base. Petals 5, twisted in æstivation. Stamens indefinite, free; filaments hardly connected at the base, unequal; anthers linear, 2-celled, fixed by the base, opening longitudinally. Ovary superior, egg-shaped, 3-celled, many-seeded, fixed to the central column. Style simple, deciduous, terminated by a simple stigma. Fruit 3-celled, 3-valved; valves with a dissepiment in the middle.—A malvaceous herb, with alternate digitately-parted leaves. This genus is allied to *Geraniàceæ,* but more closely to *Malvàceæ,* but it differs materially in the anthers being 2-celled, a circumstance which excludes it from that order as it is now constituted.

1 E. SCHIEDIA'NA (Cham. et Schlecht. l. c.) ⊙? ♃. G. Native of Mexico. Stipulas free. Racemes secund. Flowers large, flame-coloured.

Schiede's Euryanthe. Pl. 1 foot.

Cult. This plant will grow in a mixture of loam and sand, and it may either be increased by seed, or by cuttings, planted under a hand-glass.

ORDER XXXI. BOMBA'CEÆ (plants agreeing with *Bómbax,* in many important characters,) Kunth, diss. malv. p. 5. nov. gen. amer. 5. p. 294. D. C. prod. 1. p. 475.

Calyx naked at the base or involucrated with a few bracteas (f. 87. *a.*). Sepals 5, joined together into an urceolate-campanulate tube (f. 87. *b.*), sometimes truncate at the apex, sometimes irregularly imbricated, sometimes somewhat valvately-connate, and bursting laterally; the æstivation is therefore doubtful. Petals 5, regular (f. 87. *c.*) or wanting, when present they are usually convolute in æstivation, but sometimes imbricate. Stamens 5? 10-15 or more; filaments adnate to the base of the tube of the petals, but separated into 5 bundles (f. 87. *f.*); bundles containing 1 or many anthers, sometimes intermixed with a few sterile threads. Anthers 1-celled. Ovary of 5, rarely of 10 carpels, sometimes these are nearly distinct, sometimes so closely connected as to appear a single fruit (f. 86. *f.* f. 87. *g.*), opening variously. Styles distinct, more or less connected together. Fruit of various shapes. Seeds enveloped in wool or pulp, some of them are without albumen; these have corrugated or convolute cotyledons, but those furnished with albumen have flat cotyledons. This order is very closely allied to *Malvàceæ,* from which perhaps it is not distinct; it agrees with it in the 1-celled anthers, in the petals being usually convolute, and in habit, but differs from it in the calyx being imbricate, not truly valvate, in the staminiferous tube being divided into 5 bundles or sets at the apex, not monadelphous, as in that order. It comes also near to *Byttneriàceæ* and *Chlenàceæ* in habit, but it is easily distinguished from these two orders in the anthers being 1-celled, not 2-celled. The species are fine tropical trees and shrubs. Some of them are amongst the largest trees in the world; *Adansònia digitàta,* the *Baobab* of Senegal, or *Monkey-bread* of the English colonies on the coast of Guinea, has been seen with a

diameter of 25 feet, although the height is not great, at most 20 or 30 feet high, and specimens of *Bómbax ceìba*, *Eriodéndron anfractuòsum* and *Guineénsis*, and other species are not uncommon above 100 feet in height. The wood of all the plants contained in this order is soft and light, as in *Malvàceæ*, from which this order probably does not differ in its medical properties.

Synopsis of the Genera.

1 HELI'CTERES. Calyx tubular, 5-cleft. Stamens 5 to 15, monadelphous, but multifid at the apex. Ovary stipitate. Styles 5, joined at the base. Carpels 5, 1-celled, many-seeded, twisted or straight. Leaves simple.

2 MYRO'DIA. Calyx tubular, 4-5-toothed, bursting laterally. Column of stamens long. Anthers 10-15. Capsule drupaceous, 2-3-celled; cells 1-seeded. Leaves simple.

3 PLAGIA'NTHUS. Calyx 5-cleft. Petals 5, 2 of which are approximate, remote from the rest. Stigma clavate. Berry? Leaves simple.

4 MATI'SIA. Calyx irregularly 2-5-toothed, bursting. Column of stamens cleft into 5 at the apex, each division containing 12 anthers, all on the outer side. Drupe ovate, 5-celled; cells 1-seeded. Leaves simple.

5 POURRE'TIA. Calyx 5-parted, campanulate. Column of stamens 5-cleft at the apex. Capsule coriaceous, membranous, 5-winged, 1-celled, indehiscent, cell 1-seeded. Leaves entire.

6 MONTEZU'MA. Calyx hemispherical, truncate, sinuately-toothed. Stamens numerous, twisted around the style, monadelphous, with 5 distinct furrows. Capsule globose, 4-5-celled; cells many-seeded. Leaves entire.

7 OPHE'LUS. Calyx 5-cleft; lobes acute, reflexed. Stamens numerous, joined into a tube at the base, somewhat reflexed at the apex. Stigma multifid. Capsule woody, oblong-ovate, 12-celled, many-seeded. Leaves entire.

8 ADANSO'NIA. Calyx 5-parted, deciduous. Urceolus of the stamens dilated and expanded at the apex. Stigmas numerous. Capsule woody, indehiscent, 10-celled, many-seeded, full of farinaceous pulp. Leaves compound.

9 CAROLI'NEA. Calyx tubular, somewhat truncate, permanent. Petals very long. Stamens monadelphous at the base, but divided into many 12-24-anthered bundles at the top. Stigmas 5. Capsule woody, many-valved, 1-celled, many-seeded. Seeds enveloped in aril. Leaves compound. (f. 86.).

10 BO'MBAX. Calyx subquinquefid or truncate. Petals connected together, and with the staminiferous column at the base. Stamens numerous, sometimes purely monadelphous, sometimes divided into 5 bundles at the apex; filaments free. Capsule large and long, 5-celled, 5-valved; cells many-seeded. Seeds albuminous, enwrapped in wool. Leaves compound.

11 ERIODE'NDRON. Calyx obtusely 5-lobed. Petals connected together, and with the staminiferous column at the base. Stamens numerous, connected at the base in a short column, but divided into 5 bundles at the apex; bundles connected to the top, filiform, each bearing 2 or 3 anthers at the apex, linear or anfractuous, appearing like 1 anther. Leaves compound.

12 CHORI'SIA. Calyx campanulate, 2-5-lobed, furnished with 3 permanent bracteas at the base. Petals long. Tube of stamens double, the interior one slender, round, bearing 10 twin anthers, outer one short, 10-lobed, sterile, adnate to the interior above the base. Ovary sessile, ovate, 5-celled. Capsule 5-valved, 1-celled, many-seeded. Leaves compound.

13 DU'RIO. Calyx obtusely 5-lobed, girded by a 2-lobed involucel (f. 87. *a*. *b*.). Petals connected at the base. Stamens numerous, pentadelphous. Anthers anfractuous (f. 87. *d*.). Stigma simple. Fruit large, round, muricated (f. 87. *g*.), 5-celled (f. 87. *k*.); cells 4-5-seeded, pulpy inside. Leaves simple.

14 OCHRO'MA. Calyx funnel-shaped, hardly 5-cleft, 3 roundish, and 2 acutish. Anthers anfractuous. Stigmas 5. Capsule long, clothed on the inside with silky wool. Seeds oblong. Leaves lobed.

15 CHEIROSTE'MON. Calyx campanulate, 5-parted, deciduous, with 3 bracteas at the base. Petals none. Column of stamens 5-cleft at the apex, bearing 2 linear anthers on the back of each lobe. Capsule oblong, 5-angled, 5-valved; valves with a hairy dissepiment in the middle of each. Seeds carunculate, 15-18 in each cell. Albumen fleshy. Leaves lobed.

I. HELI'CTERES (from ἑλιξ *helix*, a screw; carpels twisted together in a spiral manner). Lin. gen. no. 1024. D. C. prod. 1. p. 474.).

LIN. SYST. *Monadélphia, Penta-Decándria.* Calyx tubular, somewhat 5-toothed. Petals 5, ligulate, unguiculate, a little toothed at the apex. Stamens 5-10-15, monadelphous, with the urceolus multifid at the apex, intermixed with sterile hairs. Ovary on a long stalk. Styles 5, joined at the base. Carpels 5, 1-celled, many-seeded, opening on the inside, generally regularly twisted together screw-wise, seldom straight. Seeds without albumen. Cotyledons spirally convolute. Shrubs and trees, usually clothed with stellate tomentum, with simple, unequally-cordate leaves and few-flowered axillary peduncles.

SECT. I. SPIROCARPÆ'A (from σπειρα, *speira*, a spire, and καρπος, *karpos*, a fruit; in allusion to the carpels being twisted together in a spiral manner). D. C. prod. 1. p. 475. Carpels twisted together, constituting a spiral, 5-furrowed, oblong, or ovate fruit.

1 H. ISÒRA (Lin. spec. 1366.) leaves cordate, ovate, serrate-toothed, acuminate, scabrous, tomentose beneath; flowers axillary, decandrous; fruit cylindrical, somewhat velvety, awl-shaped at the apex. ♄. S. Native of Malabar and the Moluccas. Sims, bot. mag. t. 2681.—Pluk. alm. t. 245. f. 2.—Rump. amb. 7. t. 17. f. 1.—Rheed. mal. 6. p. 55. t. 30. H. Jamaicénsis, Lam. dict. 3. p. 87. Leaves like those of the *Hazel*. Petals obovate, yellow. This plant is called Isóra-murri. by the inhabitants of Malabar.

Isora Screw-tree. Fl. June, July. Clt. 1733. Shrub 12 ft.

2 H. ROXBU'RGHII; leaves broad, obovate-roundish, acuminated, toothed, tomentose beneath as well as the branches; pedicels 2-3 together, short, axillary; petals reflexed. ♄. S. Native of the East Indies. H. Isòra, Roxb. but not of Lin. Flowers red. Peduncles twin, very short, bearing 2-3 pedicels.

Roxburgh's Screw-tree. Shrub 6 feet.

3 H. OVA'TA (Lam. St. Hil. fl. bras. 1. p. 273.) decandrous; leaves ovate or subcordate, with a short acumen, biserrate-toothed, dotted above from stellate down, but covered with

white tomentum beneath; petals exceeding the calyx; column of stamens exserted; carpels twisted. ♄. S. Native of Brazil. H. Braziliénsis, Mik. fasc. 4. H. corylifòlia, Nees. et Mart. nov. act. bonn. 12. p. 44. Peduncles 2-3-flowered. Petals yellowish-green at the base, but intensely red at the apex.

Ovate-leaved Screw-tree. Shrub 5 to 6 feet.

4 H. BREVISPÌRA (St. Hil. fl. bras. 1. p. 274. t. 54.) decandrous; leaves ovate, acute, somewhat cordate at the base, biserrate-toothed, velvety-tomentose; limbs of petals broadish, reflexed, twice the length of the calyx; column of stamens exserted; carpels short, twisted. ♄. S. Native of Brazil in the provinces of Minas Geraes and Minas Novas. Peduncles 2-flowered, equal in length to the petioles. Petals at first yellow, with a red spot at the base of each, at length becoming intensely scarlet.

Short-spired-carpelled Screw-tree. Shrub 4 to 6 feet.

5 H. BARUE'NSIS (Lin. mant. 122,) decandrous; leaves cordate, sharply-serrated, tomentose beneath: peduncles 2-flowered; calyx somewhat 2-lipped; carpels cylindrical, somewhat velvety, awl-shaped at top. ♄. S. Native of the Island of Baruco and the Isthmus of Panama, in woods by the sea-side. Jacq. amer. 236. t. 149. Lobes of calyx 5, irregularly joined into two lips. Petals linear, white. Calyx greenish-yellow. The bark of the trunk and principal branches being easily peeled off and very tough, is used instead of ropes.

Var. β, ovàta (D. C. prod. 1. p. 475.) leaves ovate, scarcely cordate, obtuse, toothed, tomentose beneath. ♄. S. Native? Perhaps a distinct species.

Baruco Screw-tree. Fl. Sept. Oct. Clt. 1739. Sh. 12 ft.

6 H. GUAZUMÆFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 304.) decandrous; leaves obsoletely-cordate, somewhat ovate, unequal-sided, acuminate, serrate, hairy above, white from down beneath; peduncles 2-flowered; calyx 5-lobed; petals spatulate. ♄. S. Native on the banks of the river Orinoco and near Caripe in Cumana. Resembles *H. Baruénsis*. Flowers red.

Guazuma-leaved Screw-tree. Fl.? Clt. 1820. Shrub 8 ft.

7 H. GREWIÆFÒLIA (D. C. prod. 1. p. 476.) decandrous; leaves ovate, scarcely cordate at the base, acute, unequally and doubly serrate, downy on both surfaces; carpels cylindrical, somewhat velvety, awl-shaped at the apex. ♄. S. Native of the Island of Timor. Petals oblong with long claws. Fruit like that of *H. Baruénsis*, but more slender.

Grewia-leaved Screw-tree. Fl. June, July. Shrub 6 feet.

8 H. MACROPE'TALA (St. Hil. fl. bras. 1. p. 275.) decandrous; leaves ovate, acuminated, biserrate-toothed, nearly smooth; limb of petals broad, reflexed, covering the calyx, which is nearly 3-times shorter; column of stamens greatly exserted; carpels spirally twisted. ♄. S. Native of Brazil in the province of Minas Novas. Branches clothed with stellate hairs. Petals smooth.

Long-petalled Screw-tree. Fl. June. Tree 12 to 15 feet.

9 H. SARCARO'LHA (St. Hil. pl. usu. bras. no. 64. fl. bras. 1. p. 276.) leaves roundish-ovate or ovate, acute, slightly cordate, serrate-toothed, clothed with brown tomentum; petals narrow, hardly higher than the calyx; column of stamens twice that length; carpels twisted. ♄. S. Native of Brazil. A decoction of the roots of this shrub is used by the inhabitants of the Brazils, especially in the provinces of the mines, in syphilitic complaints, where they call it *sarcarolha*. Corolla vermillion.

Sarcarolha Screw-tree. Shrub 4 to 5 feet.

10 H. MEXICA'NA (H. B. et Kunth, nov. gen. amer. 5. p. 305.) decandrous; leaves ovate, somewhat cordate, unequally serrate, soft, and pubescent above, hoary from down beneath; calyx acutely 5-toothed; fruit ovate, somewhat velvety. ♄. S. Native of Mexico between Mazatlan and Chilpancingo. H. rùbra, Moc. et Sesse, fl. mex. ic. ined. Petals unequal, spatulate at the apex, red. Calyx velvety. Genitals scarcely twice as long as the corolla.

Mexican Screw-tree. Shrub 10 feet.

11 H. JAMAICE'NSIS (Jacq. amer. 235. t. 179. f. 99.) decandrous; leaves cordate, crenate, clothed with velvety down on both surfaces; flowers somewhat terminal, few, corymbose; fruit ovate, densely clothed with down. ♄. S. Native of Jamaica and St. Thomas. Jacq. hort. vind. t. 143.—Pluk. alm. 182. t. 245. f. 3.—Sloan. jam. 97. hist. 1. p. 22. Calyx greenish-yellow. Petals white. Tube of stamens very long.

Jamaica Screw-tree. Fl. June, July. Clt. 1739. Sh. 12 ft.

12 H. VERBASCIFÒLIA (Link. enum. 2. p. 200.) leaves cordate-acuminate, serrated, downy, green; peduncles axillary, few-flowered; fruit-stalk very long. ♄. S. Native of Brazil. Lodd. bot. cab. t. 504. Ker, bot. reg. t. 903. Corolla red.

Mullein-leaved Screw-tree. Fl. Ju. Jul. Clt. 1818. Sh. 8 ft.

13 H. FERRUGINA'TA (Link. enum. 2. p. 199.) leaves cordate, lanceolate, crenulate, downy, rusty beneath; flowers terminal, somewhat racemose; fruit-stalk very long. ♄. S. Native of Brazil. Corolla yellowish.

Rusty-leaved Screw-tree. Fl. June, July. Clt. 1823. Shrub 8 feet.

14 H. PENTA'NDRA (Lin. mant. 294.) pentandrous; leaves ovate, floral ones coloured. ♄. S. Native of Surinam. Calyx hispid, with bristly hairs.

Pentandrous Screw-tree. Shrub.

SECT. II. ORTHOCARPÆ'A (from *ορθος, orthos*, straight, and *καρπος, karpos*, a fruit; because the carpels are straight, not twisted as in the preceding section). D. C. prod. 1. p. 476. Carpels straight, approximate, not twisted together into a spire nor radiating.

15 H. ANGUSTIFÒLIA (Lin. spec. 1366.) decandrous; leaves lanceolate, acuminated, quite entire, white and downy beneath; pedicels many-flowered. ♄. G. Native of China about Canton. Obs. itin. p. 232. t. 5. Lour. coch. 530. Flowers pale-purple. Carpels clothed with stellate tomentum.

Narrow-leaved Screw-tree. Shrub 6 feet.

16 H. HIRSU'TA (Lour. coch. 530.) decandrous; leaves ovate-oblong, cordate, acuminate, doubly serrate, tomentose; peduncles many-flowered; fruit oblong, very hairy. ♄. G. Native of Cochin-china in woods. Willd. spec. 3. p. 721. Flowers pale-purple, in axillary, solitary, or crowded racemes.

Hairy Screw-tree. Shrub 6 feet.

17 H. VI'SCIDA (Blum. bijdr. ex. Schlecht. Linnæa. 1. p. 653.) decandrous; leaves roundish, cordate, acuminated, unequally serrated, somewhat 3-lobed, clothed with stellate-pubescence above, but with stellate viscid villi beneath; peduncles axillary, many-flowered, reflexed; petals spatulate; fruit oblong, hairy. ♄. S. Native of Java. Flowers red?

Viscid Screw-tree. Shrub 6 to 8 feet.

18 H. JAVE'NSIS (Blum. bijdr. ex. Schlecht. Linnæa. 1. p. 653.) decandrous; leaves oblong or oblong-lanceolate, acuminate, rounded at the base, subcordate, densely and obtusely serrulated, smooth above, but glaucous beneath, and are as well as the branches clothed with stellate down; peduncles axillary, twin, opposite, the leaves umbellately many-flowered. ♄. S. Native of Java. Flowers probably red.

Java Screw-tree. Shrub 6 feet.

19 H. SPICA'TA (Colebr. mss. in herb. Lamb.) villous; leaves oblong, acuminated, serrated; peduncles axillary, twin, spicately-racemose; column of stamens short; carpels straight. ♄. S. Native of the East Indies. Flowers red.

Spiked-flowered Screw-tree. Shrub 10 feet.

20 H. PRONIFLÒRA (Rich. act. soc. n. h. par. p. 111.) hexandrous; leaves cordate, oval, unequal-sided, unequally serrated,

acuminate, hairy on the nerves and petioles, beneath as well as branches; spikes short, axillary, 3-4-flowered. ♄. S. Native of Cayenne. Flowers scarlet.

Inclining-flowered Screw-tree. Fl. June, July. Shrub 6 ft.

21 H. Carthagene'nsis (Lin. spec. 1366.) polyandrous; leaves cordate, serrated, tomentose on both surfaces; flowers almost sessile, somewhat corymbose; fruit oblong. ♄. S. Native in the woods of Carthagena. Flowers fetid, purple.

Carthagena Screw-tree. Shrub 12 feet.

22 H. Sunda'ica; leaves oblong-lanceolate, serrated, acuminated, tomentose beneath; peduncles twin or solitary, axillary, racemose, few-flowered; fruit echinated; column of stamens very short. ♄. S. Native of the Straits of Sunda. (herb. Lamb. v. s.) Carpels apparently joined into the single fruit.

Sunda Screw-tree. Shrub 6 feet.

23 H. virga'ta (Wall. mss. in herb. Lamb.) leaves lanceolate, obtuse, mucronate, quite entire, tomentose beneath, smooth and green above; peduncles terminal and axillary, twin or tern 2-4-flowered; column of stamens short; carpels hispid. ♄. S. Native of the East Indies. Flowers red.

Twiggy Screw-tree. Shrub 6 feet.

24 H. oblónga (Wall. in Lin. soc. herb.) leaves oblong, serrated, rather rough from stellate pili; obliquely cordate at the base; peduncles extra-axillary, 2-flowered; carpels very rough, awl-shaped at the apex. ♄. S. Native of Pulo-Pinang.

Oblong-leaved Screw-tree. Shrub 6 to 8 feet.

25 H. lanceola'ta (D. C. prod. 1. p. 476.) leaves lanceolate, acuminate at both ends, hoary beneath; flowers axillary, disposed in short racemose panicles; petals linear, exceeding the genitals in length, bidentate at the base of the limb. ♄. S. Native of the East Indies. A very distinct species.

Lanceolate-leaved Screw-tree. Shrub 6 feet.

† *Species not sufficiently known.*

26 H. semitri'loba (Bert. in litt. D. C. prod. 1. p. 476.) leaves somewhat cordate, broad-ovate, somewhat 3-lobed, crenate-toothed, smooth above, hoary-velvety beneath, 5-nerved, reticulated; flowers terminal, corymbose. ♄. S. Native of St. Domingo. Fruit unknown.

Half-three-lobed Screw-tree. Shrub 6 feet.

27 H.? undula'ta (Lour. cochin. 531.) leaves lanceolate, waved; flowers usually terminal, crowded; fruit straight, stellately disposed. ♄. G. Native of Cochin-china in woods. Flowers greenish red. Perhaps a species of *Stercùlia*.

Waved-leaved Screw-tree. Tree 25 feet.

28 H.? panicula'ta (Lour. cochin. 531.) leaves ovate, entire, acute; flowers subterminal, loosely panicled; carpels straight, stellately-spreading. ♄. G. Native of Cochin-china. Perhaps a species of *Stercùlia*. Corolla reddish, spreading.

Panicled Screw-tree. Tree 40 feet.

Cult. Shrubs or trees of little beauty. They are free flowerers, and thrive best in a mixture of loam and peat. Cuttings taken off at a joint root freely in sand under a hand-glass. Seeds are easily transported in a living state from the places of their natural growth.

II. MYRO'DIA (from *μυρον*, *myron*, myrrh, perfume, and *οδμη*, *odme*, scent. *Myròdia turbinàta* exhales an agreeable perfume). Screb. gen. no. 1147. D. C. prod. 1. p. 477.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, tubular, 3-5-toothed, ruptured at the side. Petals oblong-linear. Column of stamens long, 5-toothed. Anthers 10-15. Stigmas 2-lobed. Capsules drupaceous, 2-3-celled; cells 1-seeded. Albumen wanting. Bracteoles 2-3 on each pedicel. Shrubs with simple entire leaves, and axillary or lateral, solitary, white flowers.

Sect. I. Eumyròdia (from *ευ*, *eu*, well, and *myròdia*; genuine species of *Myròdia*). D. C. prod. 1. p. 477. Anthers all placed on the top of the staminiferous tube.

1 M. turbina'ta (Swartz, fl. ind. occ. 2. p. 1227.) leaves ovate-oblong; calyx turbinate; staminiferous tube shorter than the petals; branches sparing. ♄. S. Native of the Caribbee Islands on the banks of torrents, and of Mexico. M. ovàta, Moc. et Sesse, fl. mex. icon. ined. Flowers white.

Turbinate-calyxed Myrodia. Fl.? Clt. 1793. Shrub 8 ft.

2 M. verticilla'ris (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 477.) leaves oblong, acuminate at both ends; calyx turbinate, irregularly scolloped; column of stamens rather shorter than the petals; floriferous branches whorled. ♄. S. Native of Mexico. Flowers white.

Whorled-branched Myrodia. Fl.? Shrub 6 feet?

3 M. penduliflòra (St. Hil. fl. bras. 1. p. 269. t. 53. A.) leaves obovate, obtusely acuminated on short petioles; peduncles slender, drooping, many-times longer than the petiole. ♄. S. Native of Brazil in the province of Rio Janeiro.

Pendulous-flowered Myrodia. Fl. Sept. Shrub 5 to 6 feet.

Sect. II. Quarari'bea (*Quararibe* is the name of the tree in Guiana). D. C. prod. 1. p. 477. Anthers scattered along the staminiferous column. Corolla twisted in æstivation, not imbricate as in the first section.

4 M. longiflòra (Swartz, fl. ind. occ. 2. p. 1229.) leaves lanceolate-oblong; calyx cylindrical; column of stamens longer than the petals. ♄. S. Native of Guiana on the banks of rivers. Quararíbea Guianénsis, Aubl. guian. 1. p. 962. t. 278. Cav. diss. 3. t. 71. f. 2. Flowers white. The bark of this tree being filamentose is used in Guiana for making lines.

Long-flowered Myrodia. Fl. May. Shrub 6 feet.

Cult. A light rich soil suits the species of this genus best; and half-ripened cuttings taken off at a joint root readily in sand under a hand-glass, placed in heat.

III. PLAGIA'NTHUS (from *πλαγιος*, *plagios*, oblique or lateral, *ανθος*, *anthos*, a flower; because two of the petals are remote from the rest, which causes the flower to have an oblique appearance). Forst. gen. t. 43. D. C. prod. 1. p. 477.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft. Petals 5, ovate, two of which are approximate and remote from the others. Stigma club-shaped. Berry? A branched shrub with narrow, fascicled leaves, and solitary, 1-flowered pedicels.

1 P. divarica'tus (Forst. l. c.). ♄. H. Native of New Zealand. Branches divaricating. Leaves small, in bundles, linear. Flowers solitary, small, reddish?

Divaricating-branched Plagianthus. Fl. June, July. Clt. 1820. Shrub 8 feet.

Cult. This shrub will stand our winters well if planted in a sheltered situation; young cuttings will root freely in sand under a hand-glass.

IV. MATI'SIA (in memory of M. Matis, an artist attached to the botanical expedition of Humboldt in New Granada). H. B. pl. æquin. 1. t. 2. nov. gen. amer. 5. p. 306. D. C. prod. 1. p. 477.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, irregularly 2-5-toothed, ruptured at the side, permanent. Petals ovate. Column of stamens 5-cleft at the apex, with 12 anthers on each lobe or division, all leaning to the outer side. Stigma 5-furrowed. Drupe ovate, 5-celled; cells 1-seeded. Albumen mealy? Cotyledons wrinkled.

1 M. corda'ta (H. B. l. c.). ♄. S. Native of New Granada

and the warmer parts of Peru. A tall tree with stalked, cordate, 7-nerved, entire, smooth leaves; and drooping, aggregate bundles of flowers, which are rose-coloured on the inside and silky on the outside, rising from the sides of the branches.

Cordate-leaved Matisia. Tree 30 to 40 feet.

Cult. A light rich soil will suit this tree well, and half-ripened cuttings taken off at a joint and planted in sand under a hand-glass will root freely, if placed in heat.

V. POURRE'TIA (in honour of Abbe Pourret, a French botanist who travelled in Spain; author of several botanical papers in the Memoirs of the Royal Academy of Toulouse). Willd. spec. 3. p. 844. D. C. prod. 1. p. 477. Cavanillèsia, Ruiz, et Pav. fl. per. p. 26.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-parted, campanulate, permanent. Petals 5. Stamens joined in a cylinder at the base but divided into 5 bundles at the top. Stigma capitate. Capsules 1-celled, indehiscent, somewhat coriaceous, with 5 large, leafy wings; cells 1-seeded, many, usually abortive. Cotyledons twisted, chrysalus-like. Corr. ann. mus. 9. p. 293. t. 26. Trees with 5-7-lobed deciduous leaves, and umbels of flowers rising before the leaves.

1 P. arbòrea (Willd. spec. 3. p. 844.) leaves cordate. ♄. S. Native of Peru on the Andes. Cavanillèsia umbellàta, Ruiz. et Pav. prod. p. 97. t. 20. A tree with a thick trunk bulging out in the middle; wood spongy. Flowers umbellate, red, very fugacious.

Tree Pourretia. Tree 40 feet.

2 P. platanifòlia (H. B. pl. æquin. 2. p. 162. t. 133.) leaves somewhat peltate, 5-7-lobed. ♄. S. Native in the province of Carthagena. Cavanillèsia platanifòlia, H. B. et Kunth, nov. gen. amer. 5. p. 306. Petals flesh-coloured, clothed with rusty down on the outside. Flowers in umbels.

Plane-tree-leaved Pourretia. Tree 60 feet.

Cult. The species of this genus will thrive well in a mixture of loam and peat; the cuttings should not be too ripe and they should be taken off at a joint; they will then root freely in sand under a hand-glass, in a moist heat.

VI. MONTEZU'MA (in honour of Montezuma, once sovereign of Mexico). Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 477.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, hemispherical, truncate, sinuately-toothed. Petals 5, somewhat sinuated, large. Stamens indefinite, spirally twisted about the style, in a long column which has 5 somewhat distinct furrows. Style ending in a club-shaped ligulate stigma. Berry globose, 4-5-celled; cells many-seeded. A large spreading tree.

1 M. speciosíssima (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 477.). ♄. S. Native of Mexico. Leaves smooth, heart-shaped, acute, entire, stalked. Pedicels 1-flowered, rising from the branches beneath the leaves. Flowers large, of a purplish-scarlet colour.

Very-shewy Montezuma. Clt. 1827. Tree 40 feet.

Cult. This very shewy tree will thrive well in a mixture of loam and peat, and cuttings, not too ripe, taken off at a joint, will root freely in sand under a hand-glass, in a moist heat.

VII. OPHE'LUS (from *οφελος, ophelos*, use; in allusion to the economical use of the fruit in Cochin-china). Lour. coch. p. 412. D. C. prod. 1. p. 478.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, 5-cleft; lobes acute, spreading, reflexed. Petals 5, thick. Stamens indefinite, joined at the base into a tube, somewhat reflexed at the top. Stigma multifid. Berry woody, oblong-ovate, 12-celled, many-seeded. This tree is nearly allied to *Adansònia.*

1 O. situla'rius (Lour. l. c.). ♄. G. Native of the eastern coast of Africa by the sea-shore. Adansònia sítula, Spreng. syst. 3. p. 124. Leaves scattered, oblong, quite entire, smooth, stalked. Flowers white, solitary, terminal, 3 inches in diameter. The fruit is large and woody; it has a lid which is easily separated, and when cleared from the pulp and seed is used in Cochin-china for holding water or any liquor.

Bucket Ophelus. Tree 40 feet.

Cult. Require the same treatment as *Adansònia*, both in cultivation and propagation.

VIII. ADANSO'NIA (in honour of Michael Adanson, a French botanist and traveller at Senegal, author of Voyage de Senegal and Famille des Plantes, died 1727). Lin. gen. no. 836. D. C. prod. 1. p. 478.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, deciduous, 5-parted. Petals 5, joined almost to the middle. Urceolus of stamens expanded at the top. Style very long. Stigmas many, stellate. Capsules indehiscent, woody, 10-celled; cells many-seeded, filled with farinaceous pulp about the seeds. A spreading tree with a thick spongy trunk, palmate leaves, with 3 leaflets in the young plants, but 5-7 on the adult ones, and large, white flowers with purplish anthers, on long axillary solitary pedicels.

1 A. digita'ta (Lin. spec. 960.). ♄. S. Native of the western coast of Africa. Cav. diss. 5. p. 298. t. 15. Lam. ill. t. 588. Hook, bot. mag. t. 2791 and 2792. A. Baobáb, Gært. fr. 2. p. 253. t. 135.—Baobáb. Alp. ægyp. 66. t. 67.

This tree is called in many parts on the western coast of Africa *Monkey-bread, Sour-gourd,* and *Bahobab* in Egypt. It is considered the largest or rather the broadest tree in the world. Several trees measured by M. Adanson were from 65 to 78 feet in circumference, but very low in proportion. The trunks were from 12 to 15 feet high before they divided into many horizontal branches, which touched the ground at their extremities; these were from 45 to 55 feet long, and were so large, that each branch was equal to a monstrous tree; and where the water of a neighbouring river had washed away the earth, so as to leave the roots of one of these trees bare and open to the sight, they measured 110 feet long, without including those parts of the roots which remained covered. Adanson calculates as follows. That a tree of

1	year old is	1½	inch	in diameter and	5	inches in height.
20	do.	1	foot	do.	15	do.
30	do.	2	do.	do.	22	do.
100	do.	4	do.	do.	29	do.
1000	do.	14	do.	do.	58	do.
2400	do.	18	do.	do.	64	do.
5150	do.	30	do.	do.	73	do.

The tree arrives at a great age, whence it has been called *arbre de mille ans,* and whence too Humboldt has been led to speak of it as the "oldest organic monument of our planet." The tree yields a fruit which resembles a gourd, and which serves for vessels of various uses; the bark furnishes a coarse thread which they form into ropes, and into a cloth, with which the natives cover their middle from the girdle to the knees; the small leaves supply them with food in a time of scarcity, while the large ones are used for covering their houses. The dried leaves, reduced to a powder, constitute *halo,* a favourite article with the natives of the eastern coast of Africa, and which they mix daily with their food, for the purpose of diminishing the excess of perspiration occasioned by the heat of those climates; even Europeans find it serviceable in cases of diarrhœa, fevers, and other diseases. At Sierra Leone this tree does not grow larger than a common apple-tree. The wood is spongy, soft,

and light, and is of no use as timber. In Abyssinia the wild bees perforate it for the purpose of lodging their honey in the holes, which honey is reckoned the best in the country. On the eastern coast of Africa the tree is liable to the attack of a species of fungus, which vegetates in the woody part, and which, without changing its colour or appearance, destroys life, and renders the part so attacked very soft. Such trunks as have been so attacked are hollowed out into chambers, and within them are suspended the dead bodies of those who are refused the honour of burial. There they become mummies perfectly dry and well preserved, without any farther preparation or embalmment, and are known by the name of *guiriots*. The farinaceous pulp enveloping the seeds tastes somewhat like gingerbread, and is eaten with or without sugar by the natives. At Bangole it forms the principal part of the food of the natives, who season many of their dishes with it, especially a kind of gruel made of corn called *rooy*. It was the chief support of Major Pedley's expedition for 10 or 12 days. The juice, expressed and mixed with sugar or a syrup made of it, is used in putrid and pestilential fevers. At Cairo they reduce the pulp to a powder, and use it in these disorders, in the lientery, dysentery, and all sorts of fluxes. Owing to these circumstances, the fruit forms an article of commerce. The Mandingos carry it to the eastern and more southern parts of Africa, and through the medium of the Arabs it reaches Morocco and even Egypt. If the fruit is decayed or injured it is burned; the leys are boiled with rancid palm-oil, and the negroes use it instead of soap.

Digitate-leaved Adansonia, Monkey-bread-tree, or Ethiopian Sour-gourd. Fl Nov. Clt. 1724. Tree 30 feet.

Cult. A rich loamy soil suits this tree well; and large, ripened cuttings will root in a pot of sand under a hand-glass, in a moist heat.

IX. CAROLI'NEA (in honour of Sophia Caroline, Marchioness of Baden, a name which will be always dear to botanists). Lin. fil. suppl. p. 51 and 314. D. C. prod. 1. p. 478. —Pachìra, Aubl. guian. 2. p. 725.

Lin. syst. *Monadélphia, Polyándria* Calyx naked, cup-shaped, truncate, permanent. Petals 5, ligulate, and very long. Stamens monadelphous at the base, divided at the top into 5 or more many-anthered bundles; filaments forked, each fork bearing two anthers, one on each filament. Style very long. Stigmas 5, spreading. Capsules woody, 5-valved, 5-celled, with a dissepiment in the middle of each valve, but it is sometimes so narrow as to make the fruit appear 1-celled, many-seeded. Seeds covered with a kind of fleshy aril, and sometimes with silky wool. Cotyledons according to the younger Lin. are plaited.—Trees with palmate compound leaves and large showy flowers, which are solitary in the axillæ of the upper leaves.

1 C. pri'nceps (Lin. fil. suppl. 314.) leaflets 5-8, ovate-lanceolate, acuminate, smooth; peduncles equal with the membranous campanulate calyx, which has 5 glands at the base; petals recurved at the apex; tube of stamens much longer than the calyx. ♄. S. Native of Guiana, Trinidad, and Brazil, in places saturated with sea water. Pachìra aquática, Aubl. guian, 2. p. 725. t. 291 and 292. Cav. diss. 3. p. 176. t. 72. f. 1. Lam. ill. t. 589. Flowers large and very shewy. Petals yellow at the top, and greenish at the base. Filaments red. Anthers purple. Perhaps Pachìra nítida of H. B. et Kunth, nov. gen. amer. 5. p. 302? The fruit is eaten, but very flatulent when taken raw in any quantity (f. 86.).

FIG. 86.

Princely Carolinea. Fl. Sep. Clt. 1787. Shrub 10 feet.

2 C. affi'nis (Mart. fl. bras. 1. p. 85.) peduncles 3-times longer than the cylindrical, coriaceous, thick calyx, which has 5 glands at the base; petals erect; tube of stamens much longer than the calyx; anthers linear, fixed above the base; style tomentose at the base. ♄. S. Native of Para on the margins of canals and banks of rivers. Leaves not known. Flowers brownish-green on the outside, but whitish within.

Allied Carolinea. Shrub 6 to 10 feet.

3 C. fastuo'sa (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 478.) leaflets 5, obovate, obtuse; calyx truncate, quite entire; petals turned back on the calyx. ♄. S. Native of New Spain in moderately warm places. Xilóxochitl flòre capillàceo, Hern. mex. 68. icon. Flowers blood-coloured. Stamens monadelphous, not polyadelphous as in the figure. Leaflets emarginate at the apex, sometimes purplish.

Disdainful Carolinea. Shrub 12 feet.

4 C. insi'gnis (Swartz, fl. ind. occ. 2. p. 1202.) leaflets 5-7, obovate-oblong; calyx sinuated, smooth; petals erect, spreading at the top; anthers oblong, incumbent; ovary tomentose. ♄. S. Native of Martinique, Tobago, and other West India islands; also on the main land of South America, especially in Guiana, Cayenne, Brazil, and Vera Cruz. Lodd. bot. cab. 1004. Bómbax grandiflòrum, Cav. diss. 5. p. 295. t. 154. Flowers long, of a pale-red colour, downy without and smooth within. Anthers white. Style red.

Shewy-flowered Carolinea. Fl. July, Aug. Clt. 1796. Tree 60 feet.

5 C. arena'ria; leaves? flowers 4 inches long; tube of stamens near an inch and a half, smooth; anthers trochleately-arcuate or spiral. ♄. S. Native of Brazil in the province of Minas Novas. Pachìra arenària, St. Hil. fl. bras. 1. p. 261. Calyx long, cup-shaped, truncately 5-toothed, smooth, with a whorl of glands at the base. Petals narrow, ligulate, velvety-tomentose on both sides, brownish-green without, and white within. Filaments twin, smooth, red; anthers adhering by their middle, as in *C. marginàta*.

Sand Carolinea. Fl. May. Shrub 7 to 8 feet.

6 C. tomentòsa (Mart. fl. bras. 1. p. 85. t. 56.) leaflets 8-9, obovate, obtuse, coriaceous, tomentosely hairy; peduncles tomentose, equal in length to the coriaceous, urceolate calyx, which has many glands at the base; petals erect; tube of stamens length of calyx; anthers oblong; style smooth. ♄. S. Native of Brazil in the province of Minas Geraes. A small tree, with axillary, terminal, solitary flowers. Petals reflexed at the apex, covered with brownish tomentum on the outside, but white within. Filaments 5, forked or simple; anthers rose-coloured.

Tomentose Carolinea. Fl. Feb. Tree 10 to 15 feet.

7 C. longiflòra (Mart. fl. bras. 1. p. 86.) peduncles twice the length of the campanulate, coriaceous calyx; petals spreadingly reflexed; tube of stamens 3-times longer than the calyx; anthers kidney-shaped, fixed by the middle; style smooth. ♄. S. Native of Brazil in the province of Minas Geraes at the height of 1600 feet above the level of the sea. Flowers of a greenish-olive colour on the outside, but white within, wholly tomentose.

Long-flowered Carolinea. Shrub 10 to 15 feet.

8 C. macra'ntha; leaves? flowers a foot and a half long; tube of stamens 2 inches, smooth; anthers circinnately-trochleate. ♄. S. Native of Brazil in the province of Minas Geraes about Retiro. Pachìra macrántha, St. Hil. fl. bras. 1. p. 261. Calyx long, cup-shaped, truncately entire. Petals long, narrow, ligulate, velvety-tomentose on the outside, or greenish-brown,

smooth and reddish within on the lower part, but silky and whitish on the upper part. Filaments in pairs. This species comes near *C. insígnis*.

Large-flowered Carolinea. Tree 20 to 30 feet.

9 C. mìnor (Sims, bot. mag. t. 1412.) leaflets 7, elliptical-oblong, acute at both ends; calyx truncate; petals erect. ♄. S. Native of Mexico and Guiana. C. pompàlis, Moc. et Sesse, fl. mex. icon. ined. Bómbax Carolinioìdes, Donn, cant. 156. Petals green. Filaments red. Anthers yellow. Pedicels longer than the calyx, but in the figure of the fl. mex. much shorter than that in the bot. mag.

Smaller Carolinea. Fl. July, Aug. Clt. 1798. Shrub 10 ft.

10 C. campe'stris (Mart. fl. bras. 1. p. 86.) leaflets 3-5, obovate-oblong, bluntish, smooth on both surfaces; peduncles equal in length to the calyx, with many glands at the base; tube of stamens shorter than the calyx; anthers erect, kidney-shaped; style smooth. ♄. S. Native of Brazil in the province of Minas Geraes, in woods between Tapanhoacanga and Villa do Principe. Corolla reddish or olive-green outside, but greenish-white within. Calyx surrounded by a whorl of glands at the base.

Field Carolinea. Fl. May. Shrub 6 to 10 feet.

11 C. margina'ta; leaflets 7, inarticulated, obovate-lanceolate, obtusely acuminated, marginated, reticulately veined beneath and tomentose; flowers nearly a foot and a half; tube of stamens an inch and a half, woolly; anthers oblong, kidney-shaped. ♄. S. Native of Brazil in the province of Minas Geraes, where it is called *Painera do Campo* by the inhabitants. Pachìra marginàta, St. Hil. fl. bras. 1. p. 6. t. 51. Peduncles terminal under the leaf-bud, 1-flowered. Calyx cup-shaped, truncately entire, with many glands at the base. Petals clothed with brownish down on the outside, and with white wool on the inside. Filaments red, simple, or forked, in 5 bundles. Seeds covered with silky wool.

Marginate-leaved Carolinea. Fl. March. Shrub 8 feet.

12 C. a'lba (Lodd. bot. cab. t. 752.) ♄. S. Native of Brazil. A magnificent tree, with digitate leaves and strong-scented white flowers at the tops of the branches. Calyx flowing with honey. Filaments innumerable, 2-forked, joined into a tube at the base.

White-flowered Carolinea. Fl. July, Aug. Clt. 1817. Tree 20 feet.

Cult. A genus of magnificent shrubs or trees, with splendid leaves and shewy flowers, well adapted for stove conservatories; therefore they deserve to be generally cultivated. They thrive best in a rich loamy soil, and large cuttings taken off at a joint, not deprived of their leaves, will root in sand under a hand-glass, in heat.

X. BO'MBAX (from *βομβυξ, bombyx*, one of the Greek names for cotton; the pods are filled with a fine silky substance like cotton, but it is impossible to spin this substance into thread in consequence of the edges being perfectly smooth. See *Gossýpium.*) Lin. gen. no. 835. exclusive of many species. D. C. prod. 1. p. 478.

Lin. syst. *Monadélphia, Polyándria.* Calyx naked, campanulate, unequally 2-5-lobed, or truncately 5-toothed. Petals 5, joined together, and somewhat connected at the base with the column of the stamens. Stamens numerous, monadelphous at the base, but free at the apex. Anthers inserted by the middle, kidney-shaped or oblong, opening above by a transverse chink. Capsules large, 5-celled, 5-valved, woody; cells many-seeded. Seeds albuminous, enwrapped in silky cotton.—Large trees with soft spongy wood, commonly used for making canoes, palmate leaves, and large scarlet or white flowers usually rising laterally from the trunk or branches, either singly or in clusters.

1 B. Ceìba (Lin. spec. 959.) trunk prickly; leaves palmate, with 5 leaflets; fruit turbinate, concave at the apex. ♄. S. Native of South America, Jamaica, &c. &c. B. quinàtum, Jacq. amer. 192. t. 176. f. 1. Flowers large, pale-red. This is a very large tree; it is called *Ceiba* in some parts of South America. The wood is very light, and not much valued except for making canoes. Their trunks are so large, as when hollowed to make very large ones. In Columbus's first voyage it was related, that a canoe was seen at the island of Cuba made of one of these trees, which was 95 palms long, of a proportionable width, and capable of containing 150 men; and some writers have affirmed that there are trees of the silk-cotton growing in the West Indies, so large as not to be fathomed by 16 men, and so tall that an arrow cannot be shot to their tops. The canoes now made in the West Indies from this tree frequently carry from 15 to 20 hogsheads of sugar from six to twelve hundred weight each, the average about twenty-five tons burden. When sawn into boards and then well saturated with lime-water, the wood bears exposure to the weather many years; it is also formed into laths for roofs, curing pots, and hogshead heading. When the tree decays it becomes a nest for the Macaca beetle, the caterpillar which, when gutted and fried, is esteemed by many persons one of the greatest delicacies. The down which is enclosed in the seed-vessels is very soft and silky; it is seldom used except by the poorer inhabitants to stuff pillows or chairs; and it is generally thought unwholesome to lie upon. The same may be said of most of the species of *Bómbax* and *Eriodéndron*.

Ceiba, or Common Silk-cotton Tree. Clt. 1692. Tree 100 ft.

2 B. Malaba'ricum (D. C. prod. 1. p. 479.) trunk prickly; leaves palmate, with 5 or 7 oblong, entire, acuminated leaflets; fruit oblong, blunt. ♄. S. Native of Malabar and Bengal; also of Java. B. heptaphýllum, Cav. diss. 5. p. 296. Roxb. cor. 3. t. 247.—Rheed. mal. 3. t. 52. Flowers in fascicles near the extremities of the branches, scarlet or red on the inside, but pale on the outside. Calyx irregularly 2 or 3-lobed, or 5-6-cleft. The wool in the pods is used in India to stuff pillows and beds.—There is also a variety of this tree with white flowers.

Malabar Silk-cotton Tree. Tree 80 feet.

3 B. insi'gne (Wall. pl. rar. asiat. 1. p. 74. t. 79 and 80.) trunk unarmed; leaflets 9, obovate, short-acuminated, glaucous beneath, as well as the petioles; corolla 4-times longer than the 2-lobed calyx; stamens shorter than the corolla; petals villous on the outside; capsule very long. ♄. S. Native of the Burman empire near Yenangheun. Flowers large, red, very showy, solitary on the naked branches. Stamens monadelphous at the base, but separating into 4-5 bundles at the top. Anthers kidney-shaped, fixed by the middle, yellow.

Shewy Silk-cotton Tree. Tree 20 to 30 feet.

4 B. septena'tum (Jacq. amer. 193. exclusive of the synonymes,) trunk unarmed, corky; leaves palmate, with 7 entire leaflets. ♄. S. Native of Carthagena. B. heptophýllum, Lin. spec. 960. Flowers crimson. Fruit like that of *Eriodéndron anfractuòsum*.

Seven-leaved Silk-cotton Tree. Clt. 1699. Tree 66 feet.

5 B. Buonopoze'nse (Beauv. fl. d. ow. et de ben. 2. p. 42. t. 83.) trunk unarmed. ♄. S. Native of Guinea in the kingdom of Waree near Buonopozo. Calyx quite entire, capsule formed with a small circle on the margin. Flowers red, woolly on the outside.

Buonopozo Silk-cotton Tree. Tree 100 feet.

6 B. globòsum (Aubl. guian. 2. p. 701. t. 281.) trunk unarmed; leaves palmate, with 5 oval, blunt, entire, emarginate leaflets; calyx bluntly 5-lobed; fruit globose. ♄. S. Native of Guiana and Cayenne. Cav. diss. 5. p. 297. t. 155. Flowers disposed in axillary and terminal racemes. Pedicels 1-flowered. Calyxes smooth. Petals oblong, woolly on the outside, pale on the inside. Stamens shorter than the petals.

Globose-fruited Silk-cotton Tree. Clt. 1824. Tree 20 feet.

7 B. TOMENTO'SUM (St. Hil. fl. bras. 1. p. 263.) trunk unarmed; leaflets 5, ovate-lanceolate, entire, scabrous above, but cinereously-tomentose beneath, and dotted with black; peduncles hoary-tomentose, inflated just under the flower, hollow inside. ♄. S. Native of Brazil in the province of Goyaz near Villa Boa. Flowers in axillary fascicles, silky, white; petals obliquely emarginate; anthers 2-celled?

Tomentose Silk-cotton Tree. Fl. June. Tree 30 feet?

8 B. ELLI'PTICUM (H. B. et Kunth, nov. gen. amer. 5. p. 299.) trunk unarmed; leaves palmate, with 5 rounded, elliptical, quite entire, smooth leaflets, which are retuse at the apex; calyx entire. ♄. S. Native of South America. Petals rose-coloured on the inside, but covered with rusty tomentum on the outside. Filaments red, length of petals.

Elliptical-leafletted Silk-cotton Tree. Tree 60 feet.

9 B. PARVIFLÒRUM (Mart. fl. bras. 1. p. 91. t. 57.) trunk unarmed; leaflets 3-5, obovate-lanceolate, obtuse or emarginate, coriaceous, smooth; peduncles and calyxes smooth; petals tomentose, 3-times longer than the calyx; ovary smooth. ♄. S. Native of Brazil in the province of Minas Geraes at the river St. Francisco. Flowers silky-villous, 3 or 4 in a fascicle, rarely solitary. Anthers kidney-shaped.

Small-flowered Silk-cotton Tree. Fl. June, July. Tree 25 feet.

10 B. PUBE'SCENS (Mart. fl. bras. 1. p. 91. t. 58.) trunk unarmed; lower leaves quinate, upper ones ternate; leaflets obovate, elliptical, emarginate, coriaceous, smooth, or covered with black dots of stellate pili beneath; pedicels inflated and hollow under the flower, and are as well as calyxes, covered with black dots of stellate tomentum; petals tomentose, 3-times longer than the calyx; ovary smooth. ♄. S. Native of Brazil in the province of Minas Geraes, where the tree is called *Embirussu*, from the bark being very tough, which is made into ropes. Flowers white from silky tomentum.

Pubescent Silk-cotton Tree. Tree 25 to 30 feet.

11 B. CORIA'CEUM (Mart. fl. bras. 1. p. 93.) unarmed; leaflets 3, oblong, acutish, entire, coriaceous, smooth, marginated; fruit scabrous, pear-shaped. ♄. S. Native of Brazil on mount Arara-coara on the confines of Peru.

Coriaceous-leaved Silk-cotton Tree. Tree 30 feet.

12 B. RETU'SUM (Mart. fl. bras. 1. p. 92. t. 59.) trunk unarmed; leaflets 3-4 or 5, obovate, retuse, smooth; peduncles and calyxes smooth; petals 6-times longer than the calyx, finely tomentose; ovary tomentose. ♄. S. Native of Brazil in the province of Minas Geraes on hills. Peduncles axillary or terminal, solitary, or twin. Corolla white from tomentum. Anthers oblong.

Retuse-leaved Silk-cotton Tree. Fl. July. Tree 20 to 25 ft.

13 B. MUNCU'BA (Mart. fl. bras. 1. p. 93. t. 99.) trunk unarmed; leaflets 8, oblong, acuminated, quite entire, smooth; calyx cup-shaped; petals coriaceous, reflexed; stamens numerous, bifid at the top. ♄. S. Native of Brazil in the province of the river Niger, where it is called by the inhabitants *Muncuba*. It is also to be found on the banks of the river Amazon. Petals clothed on the outside with olive villi, but white inside. Flowers 2 or 3 together at the tops of the branches.

Muncuba Silk-cotton Tree. Fl. March, April. Tree 80 to 100 feet.

14 B. DI'SCOLOR (H. B. et Kunth, l. c.) trunk unarmed; leaves palmate, with 5 oblong, acuminated, crenulate leaflets, hairy and green above, hoary from tomentum beneath. ♄. S. Native of South America in warm places near St. Felipe in the province of Jaen de Bracamoros. Flowers white, about the size of those of a citron.

Two-coloured-leaved Silk-cotton Tree. Tree 30 feet.

† *Species not sufficiently known.*

15 B.? VILLÒSUM (Mill. dict. no. 3.) leaves 5-angled, villous; stem jointed. ♄. S. Native of New Spain. Flowers unknown. The down enclosed in the pod is of a fine purple colour, and the inhabitants of New Spain spin it and work it into garments, which they wear without dyeing.

Villous Silk-cotton Tree. Tree?

16 B. CUMANE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 300.) unarmed; leaves palmate, with 7 stalked, lanceolate, acuminate, quite entire, smooth leaflets, which are paler beneath. ♄. S. Native of South America near Cumana. Perhaps different from *B. septenàtum*.

Cumana Silk-cotton Tree. Tree 50 feet.

17 B. MOMPOXE'NSE (H. B. et Kunth, l. c.) trunk prickly; leaves palmate, with 7 and 9 almost sessile, obovate-lanceolate, acuminated, membranaceous, smooth leaflets, which are remotely toothletted towards the apex. ♄. S. Native of South America on the banks of the river Magdalena near Mompox. Flowers and fruit unknown.

Mompox Silk-cotton Tree. Tree 40 feet.

18 B. ORINOCE'NSE (H. B. et Kunth, l. c.) trunk unarmed; leaves palmate, with 5 and 6 oblong, acuminated, quite entire, membranaceous, smooth leaflets. ♄. S. Native on the banks of the river Orinoco. Flowers unknown.

Orinoco Silk-cotton Tree. Tree 60 feet.

Cult. The species of *Bómbax* grow best in rich loamy soil. Cuttings should not be too ripe, and if they are taken off at a joint they will root freely in sand under a hand-glass, in a moist heat; but plants raised from seeds brought from the places of their natural growth make finer trees. None of the species have ever flowered in our stoves, and it is not likely they ever will, as the most of them acquire a height of 50 or 60 feet before they attempt to flower in their native countries.

XI. ERIODE'NDRON (from *εριον, erion*, wool, and *δενδρον, dendron*, a tree; alluding to the capsule being filled with a fine silky woolly substance). D. C. prod. 1. p. 479.—Ceìba, Plum. gen. 42. t 32. Gært. fruct. 2. p. 244. t. 133.

LIN. SYST. *Monadélphia, Polyándria*. Calyx naked, irregularly 5-lobed; lobes usually twin. Petals 5, joined together as well as being connected with the column of the stamens at the base. Filaments joined together into a short tube at the base, but divided into 5 bundles at the apex; which are filiform and bearing each 1, 2, or 3 linear or anfractuous anthers at the apex, which have the appearance of one anther, they are either adnate or versatile. Style crowned by a 5-6-cleft stigma. The rest of the character as in *Bómbax*. Large trees with spongy wood, which is of little use except for making canoes, as the larger species of *Bómbax*. The leaves are palmate. The flowers are large, red, white, scarlet, rising singly or in clusters from the sides or tops of the branches.

1 E. LEIANTHE'RUM (D. C. prod. 1. p. 479.) anthers reticulated; leaflets 5-7, ovate, cuspidate, quite entire. ♄. S. Native of Brazil near Rio Janeiro. Bómbax eriánthus, Cav. diss. 5. p. 294. t. 152. f. 1. Trunk and branches prickly. Flowers subterminal and lateral at the tops of the branches. Corolla large, white, woolly on the outside. Anthers adnate, the whole length of the filaments.

Smooth-anthered Wool-tree. Clt. 1818. Tree 70 feet.

2 E. ANFRACTUÒSUM (D. C. prod. 1. p. 479.) anthers versatile, anfractuous; leaflets 5-7-8, entire, or serrulated above, lanceolate, cuspidate, glaucous beneath; trunk usually prickly. ♄. S. Bómbax pentándrum, Lin. spec. 959. Cav. diss. 5. p. 293. t. 151. Bómbax orientàle, Spreng. syst. 3. p. 124. Trunk prickly or rarely unarmed. Corolla smaller than that of *B. occi-*

dentàle, clothed with silky wool on the outside and yellowish on the inside.

Var. α, *I'ndicum* (D. C. prod. 1. p. 479.) flowers in fascicles from a short peduncle; yellowish on the inside, white on the outside. ♄. S. Native of the East Indies.—Rheed. mal. 3. t. 49. and 51.—Rumph. amb. 1. t. 80.

Var. β, *Africànum* (Brown, cong. p. 10.) flowers large, crimson, fascicled. ♄. S. Native of Guinea. This is the largest and tallest tree in Guinea, the trunk of which is made into very large canoes.

Winding-anthered Wool-tree. Clt. 1739. Tree 150 feet.

3 E. OCCIDENTA'LE; anthers anfractuous, versatile; leaflets 7, serrulated, smooth and green on both surfaces; flowers fascicled, pentandrous, woolly outside, and rose-coloured on the inside; trunk prickly. ♄. S. Native of the Caribbee islands and South America. Bómbax pentándrum, Jacq. amer. 191. t. 176. f. 70. B. occidentàle, Spreng. syst. 3. p. 124. Eriod. anfractuòsum β, Caribæ'um, D. C. prod. 1. p. 479. The flowers are said to be in short compound racemes by Jacquin.

Western Wool-tree. Clt. 1739. Tree 30 to 60 feet.

4 E. SAMAU'MA (Mart. fl. bras. 1. p. 89. t. 98.) anthers anfractuous, versatile; leaflets 5-7, oblong, quite entire, acuminated; trunk prickly; petals obovately-spatulate, covered with fulvous down on the outside. ♄. S. Native of Brazil near the river Japura, Bómbax Samaùma, Spreng. Flowers on the tops of the branches, solitary, lateral, or subterminal, cream-coloured. The wool contained in the fruit is called *Samauma* in Brazil, with which the natives stuff pillows and bolsters.

Samauma Wool-tree. Tree 80 to 100 feet.

5 E. ÆSCULIFÒLIUM (D. C. prod. 1. p. 479.) anthers anfractuous; leaflets 7-8, sharply serrated; trunk unarmed. ♄. S. Native of New Spain by the sea-shore near Campeche. Bómbax axillàre, Moc. et Sesse. fl. mex. icon. ined. Bómbax æsculifòlium, H. B. et Kunth. Leaflets lanceolate-oblong, acuminated and mucronate, smooth. Petals rose-coloured, hairy on the outside, equal in length with the stamens. Flowers, according to the figure in the fl. mex., axillary, and usually solitary, on very short thick pedicels. Flowers pentandrous, covered with rusty tomentum on the outside and rose-coloured and smooth within. (Kunth.)

Horse-chesnut-leaved Wool-tree. Tree 60 feet.

6 E. JASMINODÒRUM (St. Hil. fl. bras. 1. p. 265. t. 52.) anthers anfractuous; style jointed; leaflets 3, ovate, acute, apiculated, with entire undulated margins; petals reflexed, puberulous; tube of stamens thickened at the top and entire; filaments 1-anthered; petals reflexed, puberulous. ♄. S. Native of Brazil in the province of Minas Novas. Trunk unarmed. Peduncles solitary, axillary, and on the naked branches. Flowers smelling of jasmine. Petals white, obovate.

Jasmine-scented Wool-tree. Fl. May. Tree.

Cult. These trees thrive best in a rich loamy soil, and cuttings, not too ripe, taken off at a joint, not deprived of their leaves, will root freely if planted in sand under a hand-glass, placed in a moist heat; but plants raised from seeds make better trees. The trees grow to a large size before they flower in their native countries, it is therefore not likely they can ever be brought to flower in the stoves of this country.

XII. CHORI'SIA (in honour of J. L. Choris, an eminent artist who went round the world with Kotzebue, at the expense of Count Romanzoff, see *Romanzòvia*). Kunth. diss. malv. p. 6. nov. gen. amer. 5. p. 295. D. C. prod. 1. p. 480.

LIN. SYST. *Monadélphia, Polyándria.* Calyx campanulate, 2-5-lobed, with 3 permanent bracteas at the base. Petals 5, elongated. Staminiferous tube double, inner one slender, terete, bearing on the outside at the apex 5 2-anthered lobes, adnate to the base of the outer one, which is short and of 5 bifid sterile lobes. Ovary sessile, ovate, 5-celled? Style 1, filiform, exceeding in length the stamens, crowned by a 5-lobed capitate stigma. Capsule 5-valved, 1-celled? many-seeded. Seeds enveloped in wool. Prickly trees with digitate leaves and large flowers, which are solitary, twin, or tern, in the axils of the upper leaves, with 2 or 3 bracteas under each. Petals villous. Wood soft, spongy.

1 C. INSI'GNIS (H. B. et Kunth, nov. gen. amer. 5. p. 297. t. 485. f. 1.) petals oblong-spatulate, emarginate at the apex, with flat margins. ♄. S. Native on the banks of the river Amazon. Trunk ventricose. Leaflets 5, obovate-oblong, acuminate, smooth, glaucous beneath, obsoletely and undulately-crenated towards the top. Flowers white.

Remarkable Chorisia. Tree 50 feet.

2 C. SPECIÒSA (St. Hil. pl. usu. bras. no. 63. fl. bras. 1. p. 267.) petals ovately-spatulate, emarginate at the apex, with rather undulated margins; leaflets 5-7, lanceolate, acuminated, entire at the base, but the rest acutely serrated. ♄. S. Native of the provinces of Rio Janeiro and Minas Geraes, where it is called by the inhabitants *Arvore de Paina.* Petals white on the outside from down, but reddish and smooth within. The wool which accompanies the seeds is used to stuff bolsters and pillows in Brazil.

Shewy Chorisia. Fl. March. Tree 40 feet.

3 C. VENTRICÒSA (Nees. et Mart. act. bon. xi. p. 101. t. 9.) petals lanceolate-linear, acute, waved, pubescent outside; leaflets 5-7, ovate, acuminated; calyx 2-lobed. ♄. S. Native of Brazil on the banks of Rio das Contas and Rio Itiquirica. Trunk bulged in the middle, covered with spine-like processes. Flowers white. Bómbax ventricòsa, Arrud. in Kost. trav. p. 489. Neuw. bras. reis. 2. p. 247.

Ventricose-stemmed Chorisia. Tree 20 feet.

4 C. CRISPIFLÒRA (H. B. et Kunth, l. c. t. 485. f. 2.) petals linear, blunt, with undulately-curled margins; leaflets 5-7, lanceolate, acuminated, acutely serrated, reticulately nerved. ♄. S. Native of Brazil in woods near Rio Janeiro. Flowers white on the outside from down, but smooth and reddish within.

Curled-flowered Chorisia. Tree 40 feet.

Cult. The species of *Chorísia* require the same treatment as that recommended for *Eriodéndron* and *Bómbax*.

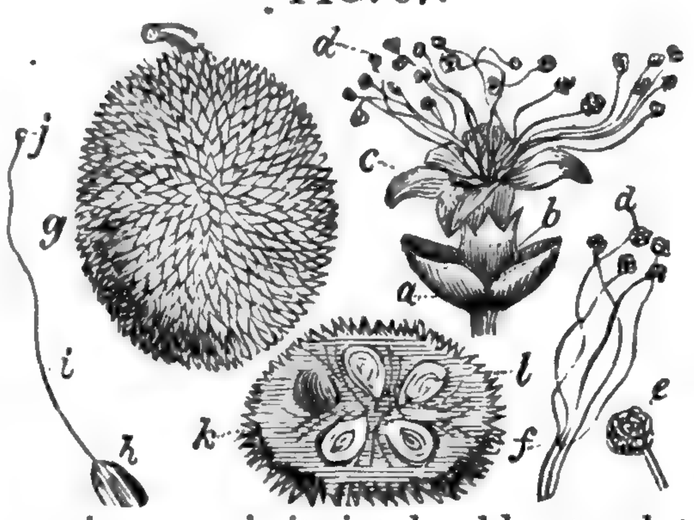
XIII. DU'RIO (from *Duryon*, the name of the fruit in the Malay language, which comes from *dury*, a thorn, in the same language, in allusion to the prickly fruit). Lin. syst. 698. but not of Adans. D. C. prod. 1. p. 480. Konig, in Lin. trans. vol 7. p. 266.

LIN. SYST. *Polyadélphia, Polyándria.* Calyx 5-lobed (f. 87. *b.*), girded by a 2-lobed, concave involucel (f. 87. *a.*). Petals 5, joined together at the base into a tube, longer than the calyx, with a spreading limb (f. 87. *c.*). Stamens numerous, disposed in 5 bundles (f. 87. *d.*), each of these bundles is divided into 5 1-anthered filaments (f. 87. *f.*). Anthers anfractuous (f. 87. *e. d.*). Ovary scaly (f. 87. *h.*). Style filiform (f. 87. *i.*). Stigma roundish (f. 87. *j.*). Fruit roundish (f. 87. *g.*), muricated, about the size of the bread-fruit, 5-celled (f. 87. *k.*); cells filled with pulp, 4-5-seeded (f. 87. *l.*). Seeds shining, ovate-oblong. A large tree with oblong, acuminated leaves, rounded at the base, of a lurid-silvery colour beneath and lepidoted.

1 D. ZIBETHÌNUS (Lin. syst. 698. Lam. ill. t. 641. Konig, in Lin. trans. vol. vii. t. 14, 15, and 16.). ♄. S. Native of the East Indies.—Rumph. amb. 1. p. 99. t. 20.—Rheed. mal. Leaves like those of the cherry, green and smooth above and covered with brownish scales beneath. The fruit is about the

size of a man's head. It is said to be the most delicious of all the fruits of India. The eatable part of it is that aril-like substance which contains the kernels, and which most resembles cream or the blanc-manger of our tables; but a considerable drawback from the extreme gratification it procures to the palate of the epicurean, is its intolerable stench; even the rinds emit such an offensive effluvia, that at Amboyna, as Rumphius and Valentine state, it is forbidden by the law to throw them out near any public path. Some compare this smell to that of putrid animal substances, others to that of rotten onions; but all agree that if the first repugnance is once overcome no fruit is more enticing than the *durion*. These qualities are so very well known, that it is surprising to find it mentioned in the Histoire des Voyages, and copied from thence by Lamarck in his Encyclopedie, that the fruit of the *durion* diffuses an excellent odour, but that its taste is rather unpleasant, it being that of fried onions. The fruit is used as a bait to entrap the civet-cat, which is very fond of it; hence the specific name.

FIG. 87.



Civet-cat Durion. Clt. 1825. Tree 80 feet.

Cult. This tree will thrive well in a rich loamy soil, and cuttings not too ripe, taken off at a joint, not deprived of their leaves, will root in sand under a hand-glass, in a moist heat.

XIV. OCHRO'MA (from ωχρος, *ochros*, yellow; in allusion to the wool in the pods being yellow, as well as to the colour of the flowers). Swartz, act. holm. 1798. p. 148. t. 6. D. C. prod. 1. p. 480.

Lin. syst. *Monadélphia, Pentándria.* Calyx tubular at the base, somewhat funnel-shaped, hardly 5-cleft, with 3 rounded flat lobes and 2 acutish ones. Petals 5, larger than the calyx. Anthers anfractuous. Stigmas 5. Capsules 5-celled, clothed on the inside with silky brownish wool. Seeds numerous, oblong. Trees with soft spongy wood, and long leaves, and solitary, terminal, 1-flowered peduncles.

1 O. lago'pus (Swartz, fl. ind. occ. 2. p. 1144. t. 23.) leaves cordate, 5-7-angled, rather lobed, toothletted, downy beneath, with rusty nerves. ♄. S. Native of Jamaica, Hispaniola, Porto-Rico and the hotter parts of Mexico on the mountains. Bómbax pyramidàle, Cav. diss. 5. p. 294. t. 155. Flowers large, erect, pale-brown or yellowish. Capsule more than a foot long. The wood of this tree is white, tender, and so light, that it is used instead of corks to fishing nets. The capsules contain a very fine, soft, rufous down, in which the seeds are involved, and which down is said to be used in the manufacture of English beavers.

Hare's-foot Ochroma. Clt. 1802. Tree 40 feet.

2 O. tomentòsa (Willd. enum. 693.) leaves cordate, somewhat 3-lobed, repand, rather tomentose beneath. ♄. S. Native of South America.

Tomentose-leaved Ochroma. Clt. 1816. Tree 20 feet.

Cult. These trees grow freely in a mixture of loam and peat, and cuttings will root freely under a hand-glass, in heat.

XV. CHEIROSTE'MON (from χειρ, *cheir*, the hand, and στημον, *stemon*, a stamen; the stamens are 5 in number, the filaments are united at the base, and are recurved at their top, which gives them the appearance of a hand). H. B. pl. æquin. 1. t. 44. nov. gen. amer. 5. p. 302. D. C. prod. 1. p. 480. Chiranthodéndron, Larr. diss. with a figure.

Lin. syst. *Monadélphia, Decándria.* Calyx somewhat campanulate, 5-parted, furnished with 3 bracteas on the outside at the base; sepals deciduous, thick, coloured on the inside, foveolate at the base, 5 inches long in the bud. Petals none. Stamens? Filaments connate into a tube which is 5-cleft at the top, with the lobes leaning to one side, exserted at the apex, mucronate, bearing on the back of each lobe two linear anthers which open lengthwise. Style 1. Stigma acute. Capsule oblong, 5-angled, 5-celled, 5-valved, with a villous dissepiment in the middle of each valve. Seeds 15-18 in each cell, egg-shaped, corunculate. Albumen fleshy. Embryo slender. Cotyledons flat. A tall tree 15 feet in diameter, with 5 or 6 lobed, palmate-nerved leaves, and solitary hoary-tomentose flowers on the branches nearly opposite the leaves, bi-bracteolate at the base.

1 C. platanoi'des (H. B. l. c.). ♄. S. Native of New Spain near Toluco. Tiles. act. Petrop. 5. p. 321. t. 9. Fisch. p. 581.—Hern. mex. 383. f. 1. and 459. f. 2.

Plane-like Cheirostemon. Clt. 1820. Tree 100 feet.

Cult. This fine tree succeeds well in a mixture of turfy loam and peat, or any rich light soil; and half-ripened cuttings, planted in pots of mould, without shortening their leaves, placed under a hand-glass in heat, will soon strike root.

Order XXXII. STERCULIA'CEÆ (plants agreeing with *Stercùlia* in important characters). Vent. R. Brown, cong. Kunth, diss. malv. p. 6. nov. gen. amer. 5. p. 309.—Byttneriàcæ, Tribe 1. Stercùleæ, D. C. prod. 1. p. 1. p. 481.

Flowers unisexual from abortion. Calyx naked, 4-5-lobed, deciduous, constantly valvate in æstivation. Petals wanting. Stamens 4-5-20, monadelphous around the rudiment of the pistil, always quinary or quaternary in number. Anthers bilocular. Styles equal in number to the cells of the ovary, joined into one, crowned by as many stigmas or lobes. Carpels 4-5, distinct, sometimes fewer from abortion, usually pedicellate, each crowned by a style, 1, or many-seeded, dehiscent above or indehiscent. Albumen fleshy or wanting. Embryo erect, in the seeds with albumen the cotyledons are flat and leafy, in those without albumen they are very thick and unequal, with an ovate, short radicle, pointing towards the hilum. This order is distinguished from *Malvàceæ* and *Bombàceæ* in the anthers being 2-celled, not 1-celled, from *Byttneriàceæ* in the carpels being distinct and stellately disposed, not joined together into 1 fruit. It is distinguished from *Tiliàceæ* in the filaments being monadelphous at the base, not free. The order is composed of large umbrageous tropical trees, with simple or compound leaves, and axillary panicles or racemes of small, white, greenish, or brownish flowers. The seeds of many of the *Stercùlias* are eatable, especially those of the famous *Kola* or *Cola* of Africa, which possess the property, being chewed, of rendering bad water pleasant to the palate. The seeds of the *Chica*, another noble species of the same genus, are highly esteemed in Brazil for the dessert. The seeds retain their vegetative properties a considerable length of time, therefore they are easily introduced in a living state from their places of natural growth, but the most secure mode would be to plant them in a box of mould, and either send them off directly, or allow them to vegetate before they are shipped.

Synopsis of the Genera.

1 STERCU'LIA. Flowers polygamous or monoecious. Stamens monadelphous; anthers 10-20 in one or two series, solitary or ternately aggregate. Carpels 5, distinct, stipitate, legume-formed, 1 or many-seeded, opening on the upper side.

2 TRI'PHACA. Flowers monoecious. Stamens 15, monadelphous. Style 1. Carpels 3, legume-formed, many-seeded.

3 REEVE'SIA. Flowers hermaphrodite. Stamens monadelphous. Anthers 15, sessile on the top of the tube. Capsule stipitate, 5-celled, 5-valved; cells 2-seeded; seeds winged at the base.

4 HERETIE'RA. Flowers monoecious. Stamens monadelphous; anthers 10, sessile on the top of the tube. Carpels 5, at length drupaceous, and carinately-winged, indehiscent; 1-seeded from abortion.

I. STERCU'LIA (from Sterculius, a god, derived from *stercus*. The Romans, in the height of Paganism have deified the objects of their greatest dislike, and the most immoral actions. They have the gods Sterculius Crepitus, and the goddesses Caca and Pertunda, &c. The flowers as well as the leaves of some species are fetid.) Lin. gen. no. 1086. D. C. prod. 1. p. 481.

LIN. SYST. *Monoe'cia, Monadélphia.* Calyx 5-lobed, somewhat coriaceous. Stamens monadelphous, disposed in a short sessile, or stipitate urceolus. Anthers adnate, 10-15-20 in one or two rows, solitary, or ternately-aggregate. Ovary stipitate or sessile. Carpels follicular, 5, or fewer from abortion, distinct, 1-celled, 1 or many-seeded, opening on the upper side; seeds disposed in 2 series, along the suture of the carpels. Seeds with fleshy albumen, and flat, leafy, equal cotyledons. Trees with simple or compound leaves and axillary panicles or racemes of flowers. This genus requires to be divided into other genera or sections according to the fructification, but as many of the species are not sufficiently known, they are here disposed artificially.

§ 1. *Leaves ovate or oblong, entire, or rarely 3-lobed.*

1 S. BLU'MII; leaves oblong-lanceolate, obtusely acuminated, quite entire, smooth; racemes simple; calycine segments connected at the apex; carpels ovate. ♄. S. Native of Java. S. lanceolàta, Blume, bijdr. ex. Schlecht. Linnæa. 1. p. 654.

Blume Sterculia. Tree 20 feet.

2 S. LANCEOLA'TA (Cav. diss. 5. p. 287. t. 144. f. 1.) leaves quite entire, smooth; racemes simple; calycine segments spreading; carpels few-seeded. ♄. G. Native of China. Lindl. bot. reg. 1256. Carpels oblong, crimson. Seeds black. Flowers reddish-brown, stellate, in small, axillary panicles. Leaves ovate-lanceolate. This differs from the preceding species in the sepals being spreading, not cohering at the base.

Lanceolate-leaved Sterculia. Tree 20 feet.

3 S. BALA'NGHAS (Lin. spec. 1438. excl. syn. Rumph.) leaves elliptic-oblong, bluntish, entire, nearly smooth; flowers panicled; segments of calyx linear, cohering at the apex; carpels ovate or obovate, many-seeded. ♄. S. Native of Malabar and Java. Cavàlam, Rheed. mal. 1. t. 49. S. Balánghas, Cav. diss. 5. p. 286. t. 143. Lois. herb. amer. t. 843.—Balánghas dicta, Burm. zeyl. 84. Flowers purplish. According to Rumphius the seeds are considered as esculent by the inhabitants of Amboyna, who roast them for this purpose, while the capsules are burned for the preparation of the pigment called cassoumba.

Balanghas Sterculia. Fl. June, Sept. Clt. 1787. Tree 30 feet.

4 S. NO'BILIS (Smith, in Rees' cyclop. no. 4.) leaves elliptic-oblong, entire, smooth; segments of calyx linear, cohering at the apex; carpels ovate, mucronate, 1-4-seeded. ♄. S. Native of China. S. monospérma, Vent. malm. t. 91. S. Balánghas, Ait. hort. kew. ed. 2. vol. 5. p. 338. Southwéllia nóbilis, Sal. par. lond. t. 69. exclusive of the synonymes. Flowers panicled, pale buff-coloured, with the odour of *Vanílla*. Seed black.

Noble Sterculia. Clt. 1787. Tree 20 feet.

5 S. ACUMINA'TA (Beauv. fl. d'ow. 1. t. 24.) leaves oblong-acuminated, quite entire, smooth, on long stalks; flowers in axillary panicles; anthers in two rows, sessile; carpels 1-2-seeded. ♄. S. Native of the tropical parts of Africa, particularly on the western coast. Flowers white, with spreading segments. Carpels usually 2, opposite from abortion. There are two varieties of the *Cola*, one with white, the other with reddish seeds. The seeds are about the size of horse-chesnuts.

The seeds of this species are known throughout tropical Africa by the name of *Cola* or *Kola*. They have long been celebrated by voyagers as possessing a high degree of value among the natives of Guinea, who take a portion of one of them before each of their meals, for they believe them to enhance the flavour of any thing they may subsequently eat or drink. The seeds formerly were said to be held in such high estimation among the natives of Guinea, that 50 of them were sufficient to purchase a wife, but at present 20 or 30 seeds can be purchased for a handful of cowries, while 2 or 3 tons of cowries would not purchase a perfect female at the present day. We have eaten the seeds, they have a very bitter taste; they are about the size of a pigeon's egg, of a brownish colour; they are supposed to possess the same properties as Peruvian-bark.

Acuminated-leaved Sterculia or Cola. Clt. 1795. Tr. 40 ft.

6 S. MACROCA'RPA; leaves oblong, acuminate, entire, smooth, on long stalks; flowers axillary, panicled; anthers in two rows, sessile? carpels 4-6-seeded. ♄. S. Native of Guinea. Flowers white. Pods generally 2 from abortion, opposite. The seeds of this tree are also known under the name of *Cola* in Guinea; they possess the same qualities as those of *Stercùlia acuminàta*.

Long-fruited Cola. Tree 40 feet.

7 S. LONGIFÒLIA (Vent. malm. no. 91. in adn.) leaves ovate-oblong, smooth, quite entire; flowers panicled, terminal; segments of calyx erect, hairy on the inside. ♄. S. Native of the East Indies. Flowers white from down. Fruit unknown.

Long-leaved Sterculia. Tree 20 feet.

8 S. RUBIGINÒSA (Vent. malm. no. 91. adn.) leaves oblong, acuminated, smooth above, but clothed with rusty tomentum beneath; racemes simple, tomentose; segments of calyx conniving at the apex; carpels acuminate, many-seeded, wrinkled, and naked on the inside. ♄. S. Native of Java. This tree, according to Smith, is the same as *S. Balánghas* of Cav.

Rusted-leaved Sterculia. Tree 20 feet.

9 S. PUBE'SCENS; leaves oval-oblong, cordate at the base, entire, rarely tricuspidate at the apex, covered with rusty down beneath, as well as the petioles and young branches, on long stalks; flowers in panicles, axillary, crowded; segments of calyx cohering at the apex; carpels 4-5, pubescent, 4-5-seeded. ♄. S. Native of Guinea. S. tragacántha, Lindl. bot. reg. 1363. Resembles *S. Balánghas*. Flowers greenish-red from down. Seeds small, red. There is a gum collected from this tree resembling gum tragacanth in its properties, but it is probable that many of the species have the same kind of substance, as it seems nothing more than the concrete state of the mucilage which is so universal in this order and the two preceding.

Downy-leaved Sterculia. Clt. 1793. Tree 20 feet.

10 S. GRANDIFLO'RA (Vent. malm. no. 91. in a note.) leaves

ovate, acuminated, entire, smooth; calycine segments spreading; tube of stamens almost sessile; styles 5, reflexed. ♄. S. Native of the East Indies and the Mauritius.

Great-flowered Sterculia. Clt. 1820. Tree.

11 S. NI'TIDA (Vent. malm. no. 91. in a note.) leaves lanceolate-oblong, acuminated, entire, smooth; calycine segments spreading; urceolus of stamens almost sessile. ♄. S. Native of Africa. Flowers probably dioecious, in axillary panicles.

Shining-leaved Sterculia. Tree 20 feet.

12 S. FRONDÒSA (Rich. act. soc. nat. par. p. 111.) leaves oblong-obovate, very blunt, somewhat repand, smooth, shining, crowded at the top of the branches; panicles axillary, on long peduncles. ♄. S. Native of French Guiana.

Leafy Sterculia. Tree 20 feet.

13 S. URCEOLA'TA (Smith, in Rees' cycl. no. 3.) leaves elliptical-oblong, acute, pale, coriaceous, smooth, young ones velvety beneath; panicles contracted, few-flowered, hardly longer than the petioles, tomentose; calyx bottle-shaped, stellately-tomentose, with the segments connected at the base. ♄. S. Native of the island of Honimoa near Amboyna. Clompànus mìnor. Rumph. amb. 3. p. 169. t. 107. Carpels many-seeded, scarlet. Flowers of a dirty-white colour, with an offensive smell. Seeds small, red.

Urceolate-calyxed Sterculia. Tree 20 feet.

14 S. COCCÍNEA (Roxb. hort. beng. p. 50.) leaves oblong-lanceolate, obtusely acuminated, smooth; panicles axillary and lateral, nodding; segments of calyx linear, spreading. ♄. S. Native of the East Indies in Silhet. Carpels scarlet, 6-seeded. Seeds covered with a black aril.

Scarlet-follicled Sterculia. Clt. 1817. Tree 20 feet.

15 S. LÆ'VIS (Wall. in Hook. bot. misc. pt. 3. p. 287.) leaves oblong-lanceolate, bluntly acuminated, glabrous; racemes axillary and lateral, drooping; segments of the calyx linear, spreading; follicles scarlet. ♄. S. Native of Pulo-Pinang. S. coccínea, Jack, mal. misc. vol. 1. pt. 1. Hook, bot. misc. pt. 3. p. 287. but not of Roxb. from which it differs in the follicles only containing 2-3 seeds, and in the flowers being racemose, not panicled. The seeds are covered with black pulpy aril.

Smoothed Sterculia. Shrub 10 feet.

16 S. SUBPELTA'TA (Blume, ex. Schlecht. Linnæa. 1. p. 654.) leaves on long petioles, somewhat peltate, oval-oblong, acuminated, quite entire, covered with cobwebbed tomentum beneath; racemes simple; carpels stalked, oblong, tapering to both ends. ♄. S. Native of Java. Young leaves cordate.

Subpeltate-leaved Sterculia. Tree 25 feet.

17 S. ANGUSTIFÒLIA (Roxb. hort. beng. p. 50.) leaves elliptic-lanceolate, tapering to both ends, acuminated, quite smooth; racemes axillary. ♄. S. Native of Nipaul. Reevèsia, Lindl.?

Narrow-leaved Sterculia. Tree 20 feet.

18 S. PARVIFLÒRA (Roxb. hort. beng. p. 50.) leaves obovate, acuminate, somewhat cordate at the base, smooth, except the nerves beneath, which are clothed with rusty down as well as petioles, panicles, and young branches; panicles axillary; sepals conniving at the apex. ♄. S. Native of Silhet and Pulo-Pinang. S. angustifòlia, Jack. mal. misc. 1. no. 1. p. 21. D. C. prod. 1. p. 482. but not of Roxb.

Small-flowered Sterculia. Shrub.

19 S. GUTTA'TA (Roxb. hort. beng. p. 50.) leaves ovate, blunt, thick, smooth, entire; racemes somewhat fascicled, spreading, longer than the leaves; calyxes woolly on the inside, spreading. ♄. S. Native of Malabar on the mountains. Ramena-Pou-Maram, Rheed. mal. 4. t. 61. Root aromatic. Flowers sweet-scented, pale-red, woolly on the inside.

Spotted Sterculia. Clt. 1825. Tree 70 feet.

20 S. WALLI'CHII; leaves ovate-oblong, entire, or with a few large teeth at the apex, smooth above, but villous on the nerves beneath; racemes long; flowers in fascicles; sepals very villous, at length spreading. ♄. S. Native of the East Indies.

Wallich's Sterculia. Tree 20 feet.

21 S. OBLONGIFÒLIA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 482.) leaves oblong, acute, tapering to the base, quite entire, smooth; flowers in lax racemes; calyxes spreading; genitals almost sessile; carpels somewhat drupaceous, 2-seeded. ♄. S. Native of Mexico.

Oblong-leaved Sterculia. Tree 30 feet.

22 S. HETEROPHY'LLA (Beauv. fl. d'ow. 1. t. 40.) leaves oblong, smooth, tapering to the base, on long stalks, entire or 3-lobed, irregularly toothed; flowers panicled, terminal. ♄. S. Native of Guinea in the kingdom of Waree. Flowers dirty-yellow. The seeds of this species are also called *Cola* in Guinea.

Various-leaved Sterculia. Tree 50 feet.

23 S. IVI'RA (Swartz, fl. ind. occ. 2. p. 1160.) leaves ovate, smooth, acuminated at the apex, entire, rarely 3-lobed; flowers panicled, hermaphrodite. ♄. S. Native of South America in woods. Ivìra prùriens, Aubl. guian. t. 279. I. crinìta, Cav. diss. 5. t. 162. Flowers yellowish, with spreading segments. Carpels covered with stiff bristles at the base, clothed on the inside with stinging, minute, rufous bristles. Seeds 3-5, black. This tree is called *Ivira* in South America.

Ivira Sterculia. Clt. 1793. Tree 60 feet.

24 S. IMBE'RBIS (D. C. prod. 1. p. 483.) leaves ovate, smooth, very blunt and cordate at the base, entire, acuminate; carpels naked at the base, pedicellate. ♄. S. Native of Cayenne. S. Ivìra, Rich. in Pers. ench. no. 10.

Beardless-carpelled Sterculia. Tree 30 feet.

25 S. DIVERSIFÒLIA (G. Don, in Loud. hort. brit. p. 392.) leaves coriaceous, oblong-lanceolate or lanceolate, entire or 3-lobed; lobes acuminate, smooth. ♄. G. Native of New Holland. The rest not seen. S. heterophylla, Cung. mss.

Diverse-leaved Sterculia. Clt. 1824. Tree 20 feet?

§ 2. *Leaves cordate, entire, or somewhat 3-lobed.*

26 S. ALA'TA (Roxb. cor. 3. p. 83. t. 287.) leaves very broad, ovate, acuminated, quite entire, smooth on both surfaces, cordate at the base, with a spreading recess, on long petioles; racemes axillary, solitary, shorter than the petioles; sepals long, lanceolate, acuminated, rusty on the outside as well as the peduncles. ♄. S. Native of Silhet, where the natives eat the seeds as a substitute for opium. Leaves 5-7-nerved at the base. Flowers reddish; sepals reflexed.

Winged Seven-Seeded Sterculia. Tree 30 feet.

27 S. MACROPHY'LLA (Vent. malm. no. 91. adn.) leaves cordate, roundish, entire, thick, tomentose beneath; carpels ovate, very smooth on the inside, 2-seeded. ♄. S. Native of the East Indies. Panicles terminal.

Large-leaved Sterculia. Tree 30 feet.

28 S. CORDA'TA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 654.) leaves subcordate, oval, acuminated, quite entire, tomentose beneath; panicle nodding; flowers monoecious; calyx 5-cleft; ovaries joined. ♄. S. Native of Java.

Cordate-leaved Sterculia. Tree 30 feet.

29 S. CANDO'LLII (Wall. pl. rar. asiat. 1. p. 4.) leaves roundish, cordate, obtuse, entire, smooth, rather membranaceous; carpels ovate, quite smooth both on the inside and outside, 3-seeded. ♄. S. Native of the island of Timor. S. populifòlia, D. C. prod. 1. p. 483. but not of Roxb. Flowers unknown.

De Candolle's Sterculia. Tree 23 feet.

30 S. POPULIFÒLIA (Roxb. hort. beng. p. 50. Wall. pl. rar. asiat. 1. p. 3. t. 3.) leaves roundish-cordate, entire, membranaceous, acuminated, smooth; racemes axillary, branched, stalked; segments of the calyx linear, obtuse, revolute; follicles ovate, ventricose, terminated by a cultriform, very blunt wing, on long

stipes, smooth without, but villous within. ♄. S. Native of the Coromandel coast. S. populifòlia var. acutiúscula, D. C. prod. 1. p. 483. Flowers downy, scarlet inside, but yellowish on the outside. Seeds grey.

Poplar-leaved Sterculia. Fl. April. Tree 20 feet.

31 S. CHI'CA (St. Hil. fl. bras. 1. p. 278.) leaves 3-lobed, cordate, smooth above, but tomentose beneath; petioles smooth; panicle subterminal, broad, tomentose, rusty; genitals stipitate; ovary very villous; cells 8-ovulate. ♄. S. Native of Brazil in the province of Goyaz, where it is called *Chìca* by the inhabitants, who eat the seeds, which have a very agreeable taste; they are about the size of a pigeon's egg. Cambess. in St. Hil. pl. usu. bras. no. 46. Calyx spreading, yellowish on the outside, and brownish within.

Chica Sterculia. Fl. June. Tree 30 to 40 feet.

32 S. CORDIFÒLIA (Cav. diss. 5. p. 144. f. 2.) leaves subcordate, somewhat acuminate, smooth, sometimes bluntly 3-lobed; carpels acuminated, downy, bristly on the inside, many-seeded. ♄. S. Native of Senegal.

Heart-leaved Sterculia. Tree 20 feet.

33 S. TOMENTÒSA (Thunb. jap. icon. p. 38. but not fl. jap.) leaves cordate, 3-lobed, pubescent beneath; panicle very long, branched; sepals reflexed. ♄. G. Native of Japan.

Tomentose Sterculia. Tree 20 feet.

34 S. TRI'LOBA; leaves large, cordate, with a spreading recess, smooth on both surfaces, 7-nerved, and with 3-acuminated lobes. ♄. S. Native of the East Indies. (v. s. herb. Lamb.)

Three-lobed-leaved Sterculia. Tree 20 feet.

§ 3. *Leaves cordate, 5-lobed.*

35 S. PLATANIFÒLIA (Lin. fil. suppl. 423.) leaves palmately 3-5-lobed, smooth on both surfaces; panicle branched, axillary; calyxes rotate, reflexed. ♄. H. Native of Japan and China. Cav. diss. 5. t. 145. Hibíscus símplex, Lin. spec. 977. Firmiàna, Mars. act. pat. 1. t. 1, 2. Culhàmia, Forsk. descr. 96. syn. dub. ex Salisb. Flowers green. Carpels membranous. A beautiful tree, with leaves like those of the *Sycamore*.

Plane-tree-leaved Sterculia. Fl. July. Clt. 1757. Tree.

36 S. COLORA'TA (Roxb. cor. 1. p. 26. t. 25.) leaves smooth, palmately 5-lobed; lobes acuminate; calyxes cylindrical-clavate; carpels oblong, smooth, membranaceous, on long stalks. ♄. S. Native of the East Indies on the mountains. Calyxes and carpels reddish-scarlet. Flowers racemose. Seeds yellow.

Coloured-calyxed Sterculia. Fl. April. Clt. 1818. Tree 40 feet.

37 S. U'RENS (Roxb. cor. 1. p. 26. t. 24.) leaves pubescent, 7-8-nerved at the base, and cordate with the lobes overlapping each other, 5-lobed at the apex; lobes acuminate; calyxes campanulate; carpels ovate, hispid. ♄. S. Native of the mountains on the Coromandel coast. Panicles terminal, every part covered with a glutinous, farinaceous, yellow down. Flowers small, yellow. The wood is soft and spongy. It is used to make Hindoo guitars. The bark is exceedingly astringent, and tinges the saliva reddish. The seeds are roasted and eaten by the natives; they taste very like parched peas. The capsules are covered on the outside with yellow down, and many stiff, stinging hairs.

Stinging Sterculia. Clt. 1793. Tree 40 feet.

38 S. VILLÒSA (Roxb. hort. beng. p. 50.) leaves 5-7-lobed, acute, villous beneath; lobes 3-lobed; calyxes 5-parted, spreading; carpels coriaceous, scabrous from stellate hairs. ♄. S. Native of Coromandel. Smith in Rees' cycl. no. 16. Racemes panicled.

Villous Sterculia. Clt. 1805. Tree 30 feet.

39 S. PELTA'TA; leaves on long footstalks, peltate, 5-lobed, middle and lower lobes acuminated, the 2 intermediate ones obtuse, with wide, rounded recesses, smooth above, and pubescent beneath; petioles and young branches white from tomentum. ♄. G. Native of China. (v. s. herb. Lamb.)

Peltate-leaved Sterculia. Tree 20 feet.

40 S. HELI'CTERES (Pers. ench. 2. p. 240.) leaves half 5-lobed, somewhat villous beneath; lobes ovate-roundish, acute; calyxes campanulate, with spreading segments, velvety on the outside. ♄. S. Native of Carthagena in woods. Helícteres apétala, Jacq. amer. 238. t. 181. f. 79. Stamens 14-15. Carpels divaricating. Flowers dirty-yellow, with purple spots.

Helicteris-like Sterculia. Clt. 1820. Tree 40 feet.

41 S. CARICÆFÒLIA; leaves palmately 5-lobed, with wide recesses; lobes spatulately-obovate, acuminated at the apex, beset with brown hairs on the nerves beneath, and petioles. ♄. S. Native of Sierra Leone. (v. s. herb. Lamb.)

Carica-leaved Sterculia. Tree 20 feet.

42 S. ACERIFÒLIA (Cuning. mss. in Loud. hort. brit. p. 392.) leaves palmate, 5-lobed. ♄. S. Native of New Holland.

Maple-leaved Sterculia. Clt. 1824. Tree 30 feet.

43 S. PUNCTA'TA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 483.) leaves villous beneath, palmately 5-cleft; lobes ovate-roundish, acuminate; branches and petioles dotted; calyx rotate; carpels 4-seeded, bristly on the inside. ♄. S. Native of New Spain. Panicle branched. Sepals acutish, villous as well as the peduncles.

Dotted-branched Sterculia. Tree 20 feet.

44 S. ABYSSI'NICA (R. Br. in Salt's trav. app.) leaves 3 or obsoletely 5-lobed, coriaceous, smooth, peltately cordate, with the recess closed; racemes panicled; sepals villous, spreading. ♄. S. Native of Abyssinia. Leaves like those of the *Ivy*.

Abyssinian Sterculia. Tree.

§ 4. *Leaves palmate, compound.*

45 S. FŒ'TIDA (Lin. spec. 1431.) leaves compound, with 7-9-oblong, lanceolate, acuminated leaflets; flowers panicled. ♄. S. Native of the East Indies. Cav. diss. 5. t. 141. Sonn. voy. t. 132. Clompànus màjor, Rumph. amb. 3. t. 107. Anthers 15. Carpels many-seeded. Flowers brownish, tinged with red at the base, of an ungrateful smell, as well as every part of the plant when bruised or cut. The wood is pale, lasting, and does not split; it is therefore very proper for the turner, and being well varnished makes handsome vases, &c. It has nothing of the ill smell which the flowers have. The leaves, and especially the bark, are aperient, repellent, diuretic, and diaphoretic. The seeds are oily, and if swallowed incautiously they bring on nausea and vertigo. This happens probably when eaten raw.

Fetid Sterculia. Fl. June, July. Clt. 1690. Tree 20 feet.

46 S. VERSI'COLOR (Wall. pl. asiat. rar. 1. p. 48. t. 59.) leaves peltately-digitate; leaflets 5, oblong, acuminated, tomentose beneath; panicles axillary, branched; flowers monoecious. ♄. S. Native of the East Indies on hills about Segaen, opposite the city of Ava. Flowers at first yellow, but changing to deep orange-colour. Peduncles red. Segment of the calyx connivent at the apex, but at length spreading.

Party-coloured-flowered Sterculia. Fl. Oct. Tree 16 feet.

† *Species the names of which are only known.*

47 S. SCATI'GERA (Wall. mss. in Lin. soc. herb.) carpels large, membranous, veiny, with a seed or tubercle at the base of each. ♄. S. Native of Malabar.

Spine-bearing Sterculia. Tree.

48 S. LANCÆFÒLIA (Roxb. hort. beng. p. 50.) ♄. S. Native of the East Indies at Silhet.

Lance-leaved Sterculia. Tree 30 feet.

Cult. All the species will thrive in a light loamy soil, or a mixture of loam and peat. Ripened cuttings, not deprived of their leaves, will strike root readily in sand under a hand-glass;

those of the stove species require a moist heat. The seeds are difficult to import, therefore they should be sown in boxes, and the plants raised before they are sent off from the places of their natural growth.

II. TRI'PHACA (from τρεις, *treis*, three, and φακη, *phake*, a lentil; in allusion to the three carpels.) Lour. coch. 577. D.C. prod. 1. p. 483.

Lin. syst. *Monoe'cia*, *Monadélphia*. Flowers monoecious. Calyx 5-cleft. Petals none. Stamens in the male flower 15, monadelphous. Style one in the female flower, crowned by a trifid stigma. Carpels 3, legume-shaped, inflated, acuminated, tomentose, many-seeded. Seeds 4-5, oblong-ovate.

1 T. Africa'na (Lour. l. c.) ♄. S. Native on the eastern coast of Africa on the Mozambique coast. Leaves on long stalks, cordate, quite entire. Cymes lateral and terminal. Flowers yellow. Perhaps a species of *Stercùlia*.

African Triphaca. Tree 40 feet.

Cult. This tree will thrive well in a mixture of loam and peat, and ripened cuttings, not deprived of their leaves, will root freely in sand under a hand-glass, in a moist heat.

III. REEVE'SIA (in honour of John Reeves, F. L. S., now resident at Canton, from whose exertions the botany of China has received material assistance, and to whom the British gardens are indebted for many of the fairest ornaments they contain). Lindl. bot. reg. 1236.

Lin. syst. *Monadélphia*, *Dodecándria*. Calyx campanulate, 5-toothed, imbricate in æstivation, tomentose. Petals 5, unguiculate, convolute in æstivation. Stamens joined into a long filiform tube. Anthers 15, sessile, collected into a little head, 2-celled, bursting lengthwise. Ovary sessile, within the antheriferous head. Capsule stipitate, woody, obovate, 5-angled, 5-celled, 5-valved, without any central axis. Seeds 2 in each cell, winged at the base.—A tree with alternate, exstipulate, lanceolate, acuminated, smooth, entire leaves, with the petioles jointed at the top, and compound, terminal, or axillary racemes of white flowers. This tree joins the *Sterculiàceæ* with *Byttneriàceæ*. It agrees with *Stercùlia* in the flowers, but with *Pterospérmum* in the seeds.

1 R. thyrsoi'dea (Lindl. bot. reg. 1236.) ♄. G. Native of China.

Thyrse-like-flowered Reevesia. Fl. Jan. Clt. 1824. Tree 20 feet.

Cult. This tree will require to be propagated and cultivated in the same manner as that recommended for the green-house species of *Stercùlia*.

IV. HERETIE'RA (in honour of Charles Louis L. Heretier de Brutelle, a celebrated French botanist, died in 1800, author of many botanical works,) Dry. in Ait. hort. kew. 3. p. 546. D. C. prod. 1. p. 484.—Balanópteris, Gært. fruct. 2. p. 94.—Samandùra, Lin. fl. zeyl. no. 433.

Lin. syst. *Monoe'cia*, *Monadélphia*. Flowers monoecious. Calyx 5-toothed. Stamens in male flowers 5-10, with the filaments joined into a tube; anthers sessile on the top of the tube. Anthers in the female flowers 10, sessile, 2 between each carpel. Carpels 5, 1-styled, containing few ovulæ, at length drupaceous, coriaceous, with a winged keel, indehiscent, 1-seeded from abortion. Albumen none. Embryo very thick, with fleshy unequal cotyledons, and an ovate, acuminated, radicle. Plumule 2-leaved.—Trees with simple, alternate, lepidoted, entire leaves, and axillary panicles of small, red flowers.

1 H. littora'lis (Ait. hort. kew, l. c.) leaves oval-oblong, rounded at the base, coriaceous, silvery beneath; carpels marked lengthwise with a nerve above. ♄. S. Native of the Philippine islands, Moluccas, Java, &c.—Rheed. mal. 6. t. 21.—Rumph. amb. 3. t. 63. Balanópteris Tothìla, Gært. fruct. 2. t. 99. Leaves large, coriaceous. Flowers small, reddish.

Shore Looking-glass Plant. Clt. 1788. Tree 20 feet.

2 H. Fo'mas (Willd. spec. 4. p. 971.) leaves reticulately veined beneath. ♄. S. Native of the East Indies on the banks of rivers in the kingdom of Ava, where it is called *Fómas*.—Syms. itin. ed. gall. 3. p. 100. t. 28. Leaves silvery beneath.

Fomas Looking-glass Plant. Tree 20 feet.

3 H. mi'nor (Lam. dict. 3. p. 229.) carpels with a longitudinal furrow above. ♄. S. Native of the Mauritius, where it is probably cultivated. Balanópteris mìnor, Gært. fruct. 2. t. 98. f. 2. This is probably the same as *H. Fòmas*.

Smaller Looking-glass Plant. Clt. 1824. Tree 14 feet.

Cult. These trees thrive well in sandy loam, or a mixture of loam and peat. Large ripened cuttings root freely in sand under a hand-glass, in a moist heat. Trees with fine large foliage. Seeds do not retain their vegetative powers long.

Order XXXIII. BYTTNERIA'CEÆ (plants agreeing with *Byttnèria* in some important characters.) Brown congo, Kunth, diss. malv. p. 6. nov. gen. amer. 5. p. 309.—Hermanniàceæ, Vent.

Calyx sometimes naked (f. 92. *a.* f. 88. *b.*), sometimes girded by an involucre (f. 93. *b.*). Sepals more or less connected at the base (f. 92. *a.* f. 93. *a.* f. 94. *a.*), constantly valvate in æstivation. Petals 5, hypogynous, alternating with the sepals (f. 93. *c.*), convolute in æstivation, of various forms, rarely unequal or wanting (f. 90. *c.*). Stamens equal in number to the sepals or petals (f. 91. *f.*), or double triple, or multiple, that number (f. 92. *d.* f. 93. *d.*), filaments monadelphous (f. 92. *d.* f. 93. *e.*), or variously divided at the top (f. 92. *c.* f. 89. *h.*), some of them are sometimes sterile (f. 92. *d.*); anthers 2-celled (f. 92. *c.*), behind. Carpels 5 (f. 88. *d.* f. 89. *g.* f. 91. *d.* f. 92. *e.* f. 93. *h.*), joined into one ovary, crowned by as many distinct or connected (f. 92. *g.* f. 93. *g.*) styles. Albumen oily or fleshy, rarely wanting. Embryo straight, with an inferior radicle, and leafy, flat, or plaited cotyledons, or they convolute around the plumule, but they are sometimes very thick in the exalbumenous seeds. This order differs from *Malvàceæ*, *Bombàceæ*, *Tiliàceæ*, and *Eleocárpeæ*, with which it agrees in habit, in the valvate æstivation of the calyx, and the convolute æstivation of the corolla: from *Malvàceæ* and *Bombàceæ* in the anthers being 2-celled, not 1-celled, as in those orders; from *Tiliàceæ* and *Eleocárpeæ* in the filaments being monadelphous, and from *Sterculiàceæ* in the carpels being connected into one fruit, not distinct, as in that order. It is composed of trees and shrubs, usually natives within the tropics; some few are to be found in the north and south of Africa, and a few in the north of Asia. They are furnished with simple lobed or toothed stipulate leaves, and usually with beautiful flowers. *Astrapæ'a*, and some genera related to it, are amongst the most elegant plants in the world. The flowers of a species of *Pentápetes*, called by the Indians *Machucunha*, give out a mucilaginous refrigerent juice, which is employed in gonorrhœa. *Guazùma ulmifòlia* has its fruit filled

with a pleasant mucilage, which is sweet and very agreeable. An extract of the bark of the same plant is used in Martinique to clarify sugar; its old bark is employed in the form of a strong decoction as a sudorific. The *Walthèria Durandínha* contains a great deal of mucilage, and is employed by the Brazilians as an antisyphilitic. The seeds of *Theobròma Cacào* are the cacao of the shops, and from whence the chocolate is obtained. Seeds of most of the genera are easily introduced in a living state from their native places, but those of *Theobròma* soon become rancid.

Synopsis of the Genera.

TRIBE I.

BYTTNERIE'Æ. *Petals usually concave, and arched at the base* (f. 88. *b.*), *but expanded into a ligula at the apex. Stamens* 10-30 *or more, divided into* 5 (f. 89. *h.*) *or* 10 *bundles. Filaments* 5, *sterile, ligulate* (f. 88. *b.*), *with* 5 *alternate fertile ones, solitary or ternately-pentadelphous* (f. 89. *l. h.*), *rarely* 1-*anthered; these are opposite the petals. Ovary* 5-*celled* (f. 88. *d.*); *cells usually* 2-*seeded. Seeds sometimes exalbumenous, with thick cotyledons, sometimes albumenous, with leafy, flat, or convolute cotyledons.*

1 THEOBRO'MA. Sepals 5 (f. 88. *a.*). Petals 5 (f. 88. *b.*), arched at the base. Urceolus of stamens with 5 horns, and between them 5 2-anthered filaments. Style filiform, crowned by a 5-parted stigma. Capsule 5-celled, valveless (f. 88. *d.*). Seeds imbedded in pulp (f. 88. *c.*). Albumen wanting. Cotyledons thick, oily, corrugated.

2 ABRO'MA. Calyx 5-parted. Petals 5, with the claws saccate at the base. Urceolus of stamens 10-cleft, 5 of which bear 3 anthers each, the other 5 petal-formed. Capsule 5-celled, 5-winged, many-seeded. Seeds arillate. Albumen fleshy. Cotyledons leafy, transversely flexuous.

3 GUAZU'MA. Sepals 5 or diversely connate, 2-3-parted. Petals 5, 2-horned at the apex. Filaments hardly connate at the base, divided into 5 sterile lobes, and 5 alternate threads, which are trifid at the apex, each division bearing an anther. Styles 5, conniving. Capsule woody, tubercled, valveless, 5-celled, opening by 10 holes at the apex, many-seeded. Seeds ovate. Cotyledons plaited.

4 GLOSSOSTE'MON. Calyx 5-parted. Petals 5, terminating in a filiform acumen. Stamens 25-35, monadelphous at the base, divided into 5 bundles; and 5 sterile strap-formed processes. Ovary 1, 5-celled; cells many-seeded. Style 1, crowned by 5 stigmas. Capsule covered with bristles.

5 COMMERSO'NIA. Calyx 5-parted. Petals 5, dilated, and saccate at the base, tapering gradually into a ligula at the apex. Stamens 10, connate at the base, 5 of which are sterile and petaloid, stellately spreading; the other 5 are awl-shaped and fertile, bearing 1-2 anthers each. Styles 5. Ovary 5-celled; cells 3-5, ovulate. Capsule 3-5 valved, echinated with bristles. Albumen fleshy. Inflorescence cymose.

6 BYTTNE'RIA. The same as *Commersònia*, but the fertile filaments are awl-shaped, bearing 2anthers each, and the petals are drawn out into a ligula on the back, between the lobes of the concave part. Albumen wanting.

7 AYE'NIA. Calyx 5-parted. Petals with long claws, arched, broadest at the apex, terminated by pedicellate glands. Urceolus of stamens 10-15-toothed, 5 or 10 of these are sterile, and 5 fertile, 1-anthered. Style crowned by a pentagonal stigma. Carpels 5, 2-valved, conniving into a subglobose, echinated, single fruit. Albumen wanting.

8? KLEINHO'VIA. Calyx 5-parted. Petals 5, one of which is longer than the rest, and cleft at the apex. Stamens monadelphous, divided at the top into 5 bundles opposite the petals, each bundle bearing 3 anthers on the back. Ovary stipitate. Style crowned by a subcrenated stigma. Capsule inflated, turbinate, 5-angled, 5-celled, 5-seeded. Seeds roundish. Cotyledons spirally twisted around the plumule.

TRIBE II.

LASIOPETA'LEÆ. *Calyx* 5-*parted, petaloid* (f. 80. *b.*), *permanent or marcescent. Petals minute* (f. 90. *c.*), *scale-formed, rarely wanting. Filaments awl-shaped, connate at the base, when* 5 *they are opposite the petals and fertile, when* 10 *the alternate ones are sterile. Anthers incumbent, with contiguous lobes. Ovary* 3-5-*celled; cells* 2-8-*ovulate. Carpels* 5, 2-*valved, usually closely connected, or sometimes nearly free. Seeds strophiolate at the base. Albumen fleshy. Embryo straight. Cotyledons flat, leafy.*

9 SERI'NGIA. Calyx marcescent. Petals wanting. Filaments 10, alternate ones sterile. Anthers bursting by dorsal chinks. Carpels 5, 2-valved, 2-3-seeded. Strophiola of seeds crenate. Stipulas small, deciduous.

10 LASIOPE'TALON. Calyx permanent (f. 90. *c.*). Petals 5, gland-formed. Filaments 5, free. Anthers bursting by 2 pores on the inside. Ovary 1, 3-celled; cells containing 2-ovulæ. Capsule 3-valved (f. 90. *b.*), with valvular dissepiments, opening at the cells. Strophiola of seeds jagged. Stipulas wanting.

11 GUICHENO'TIA. Calyx permanent. Petals 5, gland-formed. Filaments 5, free. Anthers opening by lateral chinks. Ovary 5-celled; cells containing 5-ovulæ, densely tomentose on the inside. Stipulas wanting.

12 THOMA'SIA. Calyx permanent, veiny. Petals 5, scale-formed or wanting. Filaments for the most part connate at the base, 5 or 10. Anthers bursting by lateral chinks. Ovary 3-celled; cells containing 2-8-ovulæ. Capsule 3-valved, with valvular dissepiments, opening at the cells. Strophiola of seed crenate. Stipulas leafy, permanent.

13 KERAUDRE'NIA. Calyx permanent. Petals wanting. Filaments 5, fertile, imbricately conniving at the base. Anthers bursting by dorsal chinks. Ovary 3-celled; cells containing many-ovulæ. Styles 3, partly connected. Capsule echinately-tomentose, 1-celled from abortion, 3-valved. Strophiola of seed entire. Stipulas minute, permanent.

TRIBE III.

HERMANNIE'Æ. *Calyx* 5-*lobed, permanent, sometimes naked, sometimes involucrated. Petals* 5, *spirally twisted before expan-*

sion. Stamens 5 (f. 91, *e.*), *monadelphous at the base, all fertile, and opposite the petals* (f. 91. *b.*). *Anthers ovate, 2-celled* (f. 91. *e.*). *Carpels connected into a single fruit* (f. 91. *d.*). *Albumen fleshy. Embryo inclosed, curved with an inferior, ovate radicle, and flat leafy entire cotyledons.*

14 Melo'chia. Calyx naked, or furnished with 1-3 bracteas at the base. Petals spreading. Styles 5. Capsule 5-celled, 5-valved. Valves with a dissepiment in the middle of each. Seeds 1-2 in each cell. Peduncles many-flowered, opposite the leaves.

15 Riedle'ia. Calyx naked, or furnished with 1-3 bracteas at the base. Petals spreading. Styles 5. Carpels 5, connected into a sub-globose 5-celled capsule, at length becoming distinct, and opening by a longitudinal chink, each containing 1-2 seeds, with the central axis free.

16 Walthe'ria. Calyx furnished with a 3-leaved lateral deciduous involucel. Style 1, crowned by a pencil-formed stigma. Capsule 1-celled, 2-valved, 1-seeded, or perhaps there are 5 carpels, and 4 of which are abortive.

17 Althe'ria. Calyx girded by a 3-leaved involucel. Stamens 5, joined into a monadelphous tube. Anthers bursting on the outside. Ovary pentagonal. Styles 5, connected. Carpels 5, joined, 1-seeded. Seeds fixed by the centre.

18 Herma'nnia. Calyx naked, campanulate. Filaments monadelphous at the base, lanceolate, usually winged. Styles 5, connected together. Capsule 5-celled, 5-valved; cells many-seeded.

19 Mahe'rnia. Calyx naked, campanulate. Limbs of petals obcordate (f. 91. *b.*), spirally convolute. Filaments monadelphous at the base (f. 91. *c.*), each dilated in the middle into a cordate tubercle, or a little hollow (f. 91. *g.*). Styles 5, sometimes joined (f. 91. *d.*). Capsule 5-celled, 5-valved (f. 91. *d.*), many-seeded.

Tribe IV.

Dombeya'cea. *Calyx 5-lobed* (f. 92. *a.* f. 93. *a.*). *Petals* 5 (f. 92. *b.* f. 93. *c.*), *flat, large, somewhat unequal-sided, convolute in æstivation. Stamens* (f. 92. *e.* f. 93. *e.*) *multiple the number of petals in one series, monadelphous* (f. 92. *c.* and *d.*), *rarely all fertile* (f. 92. *d*), *usually with some of them sterile* (f. 92. *d.*); *these are either awl-shaped or strap-formed, others fertile. There are commonly* 2 *or* 3 (f. 92. *c.*) *fertile ones between each sterile one* (f. 92. *d.*), *more or less joined together. Styles* 3-5, *joined* (f. 92. *g.*), *or free. Ovulæ in each cell* 2 *or more. Embryo straight in the axis of a fleshy albumen. Cotyledons leafy, usually bifid, twisted or flat.*

20 Rui'zia. Calyx girded by a 3-leaved involucel. Stamens numerous, monadelphous, all bearing anthers. Style 10. Carpels 10, 2-seeded, closely cohering. Seeds somewhat triquetrous, not winged.

21 Penta'petes. Calyx girded by an unilateral, 3-leaved involucel. Stamens with 3 antheriferous filaments between each sterile one. Style 1, 5-toothed at the apex, or styles 5, connected. Capsule 5-celled, 5-valved, many-seeded. Seeds naked, not winged.

22 Asso'nia. Calyx girded by a 3-crenate, 1-leaved involucel. Antheriferous filaments 15, 3 fertile between each sterile one. Styles 5, very short. Carpels 5, 2-seeded, closely connected into a single capsule. Seeds rather triquetrous, not winged.

23 Dombe'ya. Calyx girded by an unilateral 3-leaved involucel. Stamens 15-20, hardly monadelphous at the base, 5 sterile, with 2 or 3 fertile ones between each sterile one. Style 1, divided at the apex into 5 reflexed stigmas. Carpels 5, 2-valved, 1 or many-seeded, closely connected into a single capsule. Cotyledons twisted, bifid.

24 Melha'nia. In every respect the same as *Dombèya*, but the stamens are 10, 5 sterile, and 5 alternate fertile, bearing 1-2 anthers each.

25 Troche'tia. Calyx without an involucel (f. 92. *a.*). Stamens 20, monadelphous at the base (f. 92. *e.*), 5 of which are sterile (f. 92. *d.*). Style filiform (f. 92. *f.*). Capsule 5-celled, 5-valved. Seeds small, roundish, wingless.

26 Pterospe'rmum. Calyx naked or involucrated, tubular at the base. Stamens 20, 5 of which are sterile. Style cylindrical, crowned by a thickish stigma. Capsule woody, 5-celled, 5-valved. Seeds ending in a wing. Albumen sparing or wanting.

27 Vise'nia. Calyx naked. Stamens 5, monadelphous at the base, without any sterile ones. Carpels 5, connate, 2-valved, 1-seeded. Seeds fixed to the bottom of the carpels, ending in a wing at the apex. Albumen sparing.

28 Astrapæ'a. Umbel of flowers girded by a many-leaved common involucrum; leaflets roundish-ovate, 2 outer ones opposite. Calyx of 5 sepals, furnished with 1 bractea on the outside. Petals convolutely closed, as in *Malvaviscus*. Stamens 2-5, in a long tube, 5 sterile, and 20 fertile. Ovary 5-celled. Style 1, crowned by 5 stigmas. Seed free, not winged.

Genera allied to Dombeyàceæ.

29 Ky'dia. Calyx campanulate, 5-toothed, girded by a 4-6-leaved involucel; leaflets of involucel adnate to the calyx. Petals 5, obliquely obcordate. Stamens in a long tube, divided at the apex into 5 4-anthered bundles. Ovary 1. Style trifid. Stigmas dilated. Capsule 3-celled, 3-valved, 3-seeded. Seeds fixed to the bottom of the cells.

30 Glu'ta. Calyx campanulate, deciduous, naked. Petals 5, lanceolate, adhering to the long stipe-formed torus. Stamens monadelphous, adhering around the torus. Anthers round, versatile. Ovary obovate. Style 1.

31 Mara'nthus. Calyx naked, about the length of the petals. Stamens numerous, rather connate at the base, all fertile. Anthers 2-celled. Style 1, lateral, crowned by a simple stigma. Drupe oval, villous, 2-celled; cells 1-seeded. Seeds fixed by the base.

Tribe V.

Wallichie'æ. *Calyx 5-lobed* (f. 93. *a.*), *girded by a* 3-5 *leaved* (f. 93. *b.*) *involucel, which is distant from the flower. Petals* 5 (f. 93. *c.*), *flat. Stamens numerous, in a long tube* (f. 93. *e.*), *outer ones smallest. Anthers* 2-*celled, erect.*

32 ERIOLÆ'NA. Calyx tomentose, girded by a 5-leaved involucel; leaflets jagged, 3 inner ones largest, all shorter than the calyx. Petals unguiculate. Stamens disposed in many series, monadelphous, outer ones shortest, all fertile. Style solitary, villous, crowned by numerous aggregate, small stigmas.

33 WALLI'CHIA. Involucel small, of 3-4 leaves, distant from the flower. Calyx 4-parted. Petals 4, reflexed, with thick velvety claws. Stamens about 20, in a monadelphous conical tube, outer ones shortest. Ovary ovate, 8-celled. Style 1, crowned by 8 stigmas. Cells of capsule 1-seeded.

34 GOETHE'A. Calyx girded by a large, bladdery, 4-5-parted involucel (f. 93. *b.*). Petals 5, connected a little at the base (f. 93. *c.*). Filaments in a long monadelphous column (f. 93. *e.*). Anthers ovate, 2-celled. Style elongated, cleft at the apex into 8-10 stigmas (f. 93. *g.*). Carpels 5, coriaceous, 1-seeded (f. 93. *h.*).

Tribe I.

BYTTNERIE'Æ (plants agreeing with *Byttnèria*, in important characters,) D. C. prod. 1. p. 484.—Byttneriàceæ veræ, Kunth. diss. malv. p. 6. nov. gen. et spec. amer. 5. p. 309.

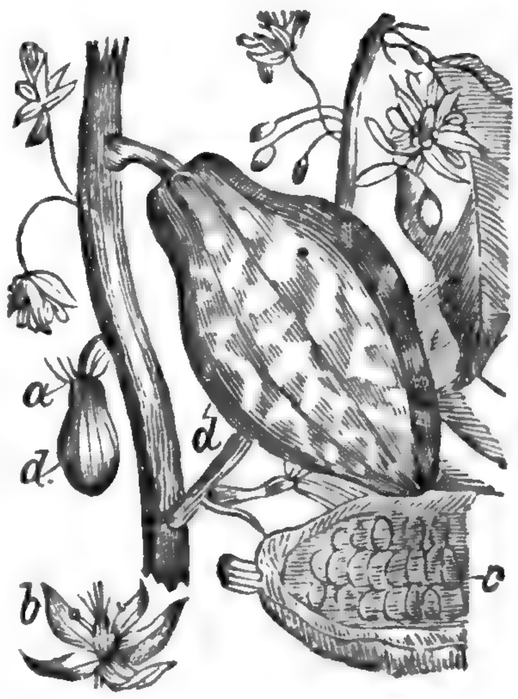
Petals 5, generally concavely arched at the base (f. 88. *b.*), expanding into a ligula at the apex (f. 88. *b.*). Stamens 10-30 or more. Tube of stamens variously divided, with 5 or 10 sterile segments (f. 88. *c.*), and 5-30 2-celled anthers opposite the petals. Styles 5 or style 5-cleft. Ovary 5-celled (f. 88. *d.*); cells usually 2, rarely many-seeded (f. 88. *c.*). Seeds sometimes exalbuminous, with thick cotyledons, sometimes albuminous, with leafy, flat, or convolute cotyledons.

I. THEOBRO'MA (from θεος, *theos*, god, and βρωμα, *bromà*, food; celestial food. The seeds of *T. cacáo* furnish the chocolate.) Juss. gen. 276. Kunth, nov. gen. amer. 5. p. 316. D. C. prod. 1. p. 484.—Cacào, Tourn. inst. t. 444.

LIN. SYST. *Monadélphia, Decándria.* Calyx of 5 sepals (f. 88. *a.*). Petals 5, arched at the base (f. 88. *b.*), drawn out into a spatulate ligula at the apex. Urceolus of stamens furnished with 5 little horns, and between each there are 5 2-anthered filaments. Style filiform. Stigma 5-parted. Capsule 5-celled, without valves (f. 88. *d.*). Seeds embedded in a soft pulp (f. 88. *c.*). Albumen none. Cotyledons thick, oily, wrinkled. Trees with large simple leaves, and with the flowers rising in clusters from the branches, only 1-3 of which produce fruit.

1 T. CACA'O (Lin. spec. 1100.) leaves quite entire, elliptic-oblong, acuminated, quite smooth; fruit oblong, smooth. ♄. S. Native of South America at the height of 600 feet. Lodd. bot. cab. t. 554. Cacào satìva, Lam. dict. 1. p. 553. ill. t. 653. Cacào theobròma, Tuss. ant. t. 13. Cacào mìnus, Gært. fruct. 2. p. 190. t. 122. Cat. carol. 3. t. 6. Flowers brownish, inodorous. The Mexicans call the beverage obtained from these nuts *chocolalt*; hence chocolate, from *chacot*, sound, and *alte* or *atte*, water. Fruit large, long, smooth, yellow, red, or of both colours, about 3 inches in diameter; rind fleshy, near half an inch in thickness, flesh-coloured within; pulp whitish, the consistence of butter, separating from the rind in a state of ripeness, and adhering only to it by filaments, which penetrate it and reach to the seeds. Hence it is known when the seeds are ripe by the rattling of the capsule when it is shaken. The pulp has a sweet and not unpleasant taste, with a slight acidity; it is sucked and eaten raw by the natives. The seeds are large, about 25 in number in each capsule; when fresh they are of a flesh-colour: gathered before they are ripe, they preserve them in sugar, and thus they are very grateful to the palate: they quickly lose their power of vegetation if taken out of the capsule, but kept in they preserve that power for a long time. The trees bear leaves, fruit, and flowers all the year through; but the usual seasons for gathering the fruit are June and December. The third year from seed it shows for fruit. A tree yields from two to three pounds of seed annually. These seeds are remarkably nourishing, and agreeable to most people, which occasions them to be kept in most houses in America as a necessary part of the provisions of the family. In this intention they are first brought to a pulverisable state by drying or roasting in a proper apparatus; they are then ground or powdered very fine, a little arnotta, and sometimes orange-water, aromatic spices, and some aromatic perfumes added, and made into a paste, which is formed into cakes or rolls of one pound each; they are much charged with oil, but mix well with milk or water. This simple preparation of chocolate is the most natural and the best. It is daily used amongst most families in the eastern part of South America, where the tree is largely cultivated, and affords a nutritious food for children as well as adults. But chocolate made abroad cannot by law be imported into this country, consequently all chocolate consumed in Great Britain ought to be made here. It is composed principally of the kernel of the cacao as above mentioned, but the art is in very few hands; and it is believed that a small portion of soap is added to most British chocolate, in order to cause it to froth when it is dissolved in hot water. The original manner of making chocolate by the Spaniards was to use cacao nut, maize, and raw sugar, as expressed from the cane, with a little arnotta added to give it a colour, mixed together and ground between two stones; they made a kind of bread, which served them equally for solid food and for drink, eating it dry when hungry, and steeping it in hot water when thirsty. The Indians to one pound of roasted nut put one pound of sugar, dissolved in rose-water, and half a pound of flour of maize. But the Spaniards and other nations afterwards added a great number of other ingredients to the composition of chocolate; all of which rather spoil than mend it, vanilla excepted. In Spain chocolate is made up in various ways, with almonds, pepper, arnotta, cinnamon, anise, vanilla, &c. which is mixed at discretion; they frequently mix their paste with orange water, which they think gives it a greater consistence and firmness. The *cacào* used on board of ships and in the West Indies, usually is nothing more than the ground seeds without any admixture.

FIG. 88.



The trees in the island of Trinidad and the Spanish Main are planted in low moist savannahs under the shade of *Erythrìna umbròsa*, generally two rows of *Cacào* for one of *Erythrìna*. Those grown in the jurisdiction of Carthagena are said to excel those of the Caraccas, Maracayba, and Guayaquil, both as to size and goodness of fruit. The Magdalena *cacào* is said to be much more oily than that grown at Caraccas; to correct this the former is mixed with the latter. The fruit is gathered when ripe, after which it is opened and the seeds taken out, and left in the air to dry. When fully dried they are put into bags, and sent to the market and sold. The *Cacào* trees so much delight in water, that the ground where they are planted must be reduced to a mire, and if not carefully supplied with water they

do not thrive. They must also be planted in the shade of other trees; for this purpose the plantations are always formed some years before the cacao seeds are sown, by planting *Erythrìna umbròsa*, or other umbrageous trees, in rows at certain distances, so as to admit of 1, 2 or 3 rows of *Cacào* between each row of such trees. The seeds are sown 2 or 3 together, at about 2 yards distant in the rows, and when the plants are about a foot high all are removed except the strongest plant. No countries are better adapted for *Cacào* than Guayaquil, the Caraccas, and the island of Trinidad, as they consist of savannahs or wide plains overflowed with water, and in summer plentifully supplied by canals or rivulets. The culture of the tree requires no other attention besides that of clearing the ground from weeds and shrubs. This is so necessary that if neglected these vegetables will in a few years destroy the *cacào* plantations by robbing the soil of all its nourishment.

There are several varieties which differ chiefly in the size, colour, and shape of the capsules.

Common *Cacao* or Chocolate-nut. Clt. 1739. Tree 16 feet.

2 T. Guiane'nsis (Willd. spec. 3. p. 1422.) leaves acuminate, repandly-toothed, tomentose beneath. ♄. S. Native of Guiana in moist woods. Cacào Guianénsis, Aubl. guian. 2. t. 275. Calyx green without, but yellow within. Petals yellow. Fruit ovate, 5-angled, clothed with rusty down. The kernel is white, and very good eating when fresh. This is probably the *Dùrio eriopìla*, Lin.

Guiana Chocolate-nut. Clt. 1803. Tree 10 feet.

3 T. sylve'stris; leaves entire, downy beneath; fruit downy. ♄. S. Native of Guiana. Cacào sylvéstris, Aubl. guian. 2. p. 687. t. 276. This is asserted by Willdenow to be the *Dùrio eriopìla* of Lin. but upon what authority we know not, as there is no specimen of it in the Linnean herbarum. Flowers yellow.

Wood Chocolate-nut. Tree 16 feet.

4 T. bi'color (H. B. pl. equin. 1. p. 104. t. 30.) leaves oblong, obliquely-cordate, whitish beneath, and 7-nerved. ♄. S. Native of New Granada in warm valleys. Fruit drupaceous, oval, indehiscent, variously excavated, silky. The seeds are mixed with the common *Cacào* by the inhabitants.

Two-coloured-leaved Chocolate-nut. Clt. 1820. Tree 20 ft.

5 T. angustifòlia (Moc. et Sesse, fl. mex. ined. D. C. prod. 1. p. 484.) leaves oblong, tapering to both ends, acuminated at the apex, 3-nerved at the base, pale beneath. ♄. S. Native of Brazil and Mexico. T. speciòsa, Willd. herb. ex Spreng. Flowers of a dirty peach-colour. Limb of petals oblong, stipitate. Sterile filaments obovate-oblong, a little longer than the petals. Fruit ovate.

Narrow-leaved Chocolate-nut. Tree 20 feet.

6 T. ovatifòlia (Moc. et Sesse, fl. mex. icon. ined.) leaves ovate, very entire, 3-nerved at the base, somewhat cordate-peltate, blunt at the apex, hoary from tomentum beneath. ♄. S. Native of Mexico. Flowers small. Sepals acuminate. Fruit egg-shaped, wrinkled from elevated ribs.

Ovate-leaved Chocolate-nut. Tree 15 feet.

Cult. All the species of *Theobròma* will thrive well in a light rich soil, or a mixture of loam and peat, in a moist heat. Cuttings will root in sand under a hand-glass, in heat. Seeds do not long retain their power of vegetation.

II. ABRO'MA (from *a* priv. and *βρωμα*, *broma*, food; not fit for food, in opposition to *Theobròma*,) Lin. fil. suppl. 341. Sal. par. 102. Kunth, nov. gen. 5. p. 318.

Lin. syst. *Monadélphia*, *Decándria*. Calyx 5-parted. Petals 5, with the claws dilated and saccate at the base. Urceolus of stamens 10-cleft, 5 of which bear 3 anthers each, with the alternate 5 petal-like, and sterile. Capsules 5-celled, 5-winged, many-seeded. Seeds arillate. Albumen fleshy. Cotyledons leafy, transversely flexuous. Small trees, with hairy lobed leaves and extra-axillary or terminal few-flowered peduncles at the tops of the branches.

1 A. augu'sta (Lin. fil. suppl. 341.) branches soft, velvety-tomentose; adult leaves cordate, ovate-oblong, acuminated, serrulated, glabrous, or covered with simple or stellate down beneath, lower leaves roundish, cordate, 3-5-angled; wings of capsule truncated at the apex, with the exterior angle acutish. ♄. S. Native of the East Indies. A. augústa and A. Whelèri, Willd. spec. 3. p. 1424 and 1425. A. fastuòsa, Jacq. vind. 3. p. 3. t. 1. Gært. fruct. 1. p. 306. t. 64. Peduncles terminal opposite the leaves. Lower leaves cordate, 3-5-lobed, 5-7-nerved, upper ones ovate-lanceolate, undivided. Flowers drooping, of a dark dirty purple-colour.

August Abroma. Fl. Aug. Clt. 1770. Tree 10 feet.

2 A. fastuo'sa (R. Br. in hort. kew. ed. 2. vol. 4. p. 409.) branches muricated; adult leaves scabrous from forked or simple bristles; wings of capsule somewhat truncate at the apex, with the exterior angle acuminated. ♄. S. Native of the island of Timor and New Holland. A. fastuòsum, Gært. fruct. 1. p. 307. t. 64. Sal. par. lond. t. 102. Lower leaves cordate, acutely 5-lobed, upper ones ovate, somewhat cordate, undivided. Flowers dark-purple.

Disdainful Abroma. Fl. June, Oct. Clt. 1800. Tree 10 ft.

3 A. mo'llis (D. C. prod. 1. p. 485.) branches rather velvety; adult leaves cordate, acuminated, serrated, velvety from very short, soft, crowded down, and stellate bristles; lower leaves roundish, cordate, somewhat 5-lobed; wings of capsule truncate at the apex, with the exterior angle obtuse. ♄. S. Native of the Moluccas and Java. Lower leaves cordate, roundish, scarcely lobed; upper ones also cordate, acuminated, serrated, on very short stalks, all are soft and velvety to the touch. Flowers dark-purple.

Soft-leaved Abroma. Tree 10 feet?

Cult. The species of *Abròma* will thrive well in any light rich soil, or a mixture of loam and peat. Cuttings will root freely in sand under a hand-glass, in heat. Seeds ripen in abundance.

III. GUAZU'MA (a name of Mexican origin, employed by Plumier,) Plum. gen. 36. t. 18. Juss. Cav. and Pers. D. C. prod. 1. p. 485.—Bubròma, Schreb. gen. no. 1216.

Lin. syst. *Monadélphia*, *Decándria*. Calyx of 5 sepals, diversely connate, 2-3-parted. Petals 5, ending in a bifid ligula at the apex. Filaments of stamens monadelphous at the base, with a very short exserted tube, divided into 5 sterile, ovate, entire lobes, and 5 linear fertile ones, which are trifid at the apex, each division bearing 1 anther each at their apexes. Styles 5, conniving. Capsules woody, tubercled, filled with mucilage, imperfectly 5-valved, 5-celled, opening by a tenfold number of holes, many-seeded. Seeds angular. Albumen fleshy. Cotyledons flattish. Trees covered with stellate down. Leaves alternate, simple, cordate and unequal at the base, caducous. Stipulas lateral. Peduncles axillary and terminal, somewhat dichotomously branched. The species are probably mere varieties.

1 G. ulmifòlia (Lam. dict. 3. p. 52.) adult leaves smooth on both surfaces. ♄. S. Native of the West Indies. Theobròma Guazùma, Lin. spec. 1100. Plum. ed. Burm. t. 144. but with the leaves less cordate, and the racemes less elongated. Pluk. alm. t. 77. f. 5. Bubròma Guazùma, and perhaps B. Invìra, Willd. enum. 806. The leaves, according to M. De Candolle, are ovate or oblong, unequally toothed, acuminate at the apex; younger ones hardly downy on the nerves, with stellate hairs. Petals yellow, with two purple awns at the apex. A wide spreading tree, not unlike the elm, with leaves that sleep hanging quite down, whilst the petioles remain entirely stiff and straight.

It grows in the lowlands of Jamaica and other West India Islands, forming a very agreeable shade for the cattle, and supplying them with food in dry weather, when all the herbage is burned up or exhausted. The pods are filled with mucilage, which is very agreeable to the palate; it can be sweetened at pleasure. It has the taste of green figs. The wood is light, and so easily wrought, that it is generally used by coach-makers in all the side pieces. (Browne.) It is also frequently cut into staves for casks. A decoction of the inner bark is very glutinous, and very like that of elm. It is said to be excellent in elephantiasis, a disorder to which the negroes are much subject. The old bark passes for a sudorific, and is said to be excellent in diseases of the chest, for this purpose boil three or four ounces in three pints of water, and let it be reduced to two.

Elm-leaved Bastard-cedar or Orme d'Amerique. Fl. Aug. Sep. Clt. 1739. Tree 40 to 60 feet.

2 G. tomentò'sa (H. B. et Kunth, nov. gen. amer. 5. p. 320.) leaves rather hairy above, but clothed with fine white tomentum beneath. ♄. S. Bubròma tomentòsum, Spreng. Perhaps sufficiently distinct from both the other species. Flowers yellow; petals ciliated. Leaves serrated.

Var. α, *Mompoxénsis* (H. B. et Kunth, l. c.) corymbs twice as long as the leaves; calyx 2-parted. ♄. S. Native of South America about Mompox, at the river Magdalena, and in New Andalusia.

Var. ? β, *Cumanénsis* (H. B. et Kunth, l. c.) panicles one-half shorter than the leaves; calyx 3-parted. ♄. S. Native of South America near Cumana. Perhaps a proper species.

Tomentose-leaved American Elm. Clt. 1816. Tree 12 feet.

3 G. polybo'trya (Cav. icon. 3. p. 51. t. 299.) leaves velvety-tomentose from starry down beneath, younger ones pubescent above, adult ones smooth. ♄. S. Native of New Spain and St. Domingo, and perhaps of Brazil, if Bubròma polybótryum, Willd. enum. 806. is the same.—Guacìmo, Hern. mex. 401. f. 1. Leaves equal at the base and toothed.

Many-racemed Bastard-cedar. Clt. 1816. Tree 20 feet.

4 G. Blu'mii; leaves ovate-oblong, acuminated, cordate at the base, unequal-sided and unequally toothed, stellately-puberulous above, white beneath from stellate down. ♄. S. Native of Java. G. tomentòsa, Blum. bijdr. ex Schlecht. Linnæa. 1. p. 655. but not of Kunth.

Blume's Bastard-cedar. Tree 30 feet.

5 G. grandiflòra; leaves large, oblong, abruptly acuminated, quite entire, 3-nerved, pale beneath; peduncles subracemose, and are as well as the calyxes densely tomentose. ♄. S. Native of Brazil. Bubròma grandiflòrum, Willd. herb. ex Spreng. syst. 3. p. 332.

Great-flowered American Elm. Tree 40 feet.

6 G. Invi'ra; leaves subcordate, lanceolate, unequally serrated, smoothish. ♄. S. Native of Brazil, where it is called *Invira*. Bubròma Invìra, Willd. enum. 806.

Invira American Elm. Tree 40 feet.

Cult. The species thrive well in a mixture of loam and peat, or any rich light soil; and cuttings root freely in any kind of soil if placed under a hand-glass in heat. The seeds retain their power of vegetation a considerable time.

IV. GLOSSOSTE'MON (from γλωσσα, *glossa*, tongue, and στημων, *stemon*, a stamen; in allusion to the shape of the sterile filaments,) Desf. mem. mus. 3. p. 238. t. 2. H. B. et Kunth, nov. gen. amer. 5. p. 311. in a note. D. C. prod. 1. p. 485.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-parted. Petals 5, each terminated by a filiform point. Stamens 25-35, monadelphous at the base, divided at the top into 5 distinct bundles, with a sterile tongue-shaped filament in the middle of each bundle. Ovary 1, 5-celled; cells many-seeded. Style 1. Stigmas 5. Capsule globose, covered with bristles. This genus is allied on the one hand to *Sparmánnia* and on the other to *Byttnèria*.

1 G. Bruguie'ri (D. C. prod. 1. p. 486.) ♄. F. Native of Persia near Bagdad. Leaves stalked, ovate, roundish, somewhat lobed, toothed, hispid from starry hairs. Flowers corymbous, rose-coloured.

Bruguiere's Glossostemon. Shrub 10 feet?

Cult. This shrub only requires to be sheltered from the frost. Cuttings will root freely in sand under a hand-glass.

V. COMMERSO'NIA (in honour of Philibert Commerson, M.D. a French botanist from Bourg in Brest. He accompanied M. de Bougainville in his voyage round the world; on this voyage he stopped at the Isle of France, where he died in 1774, after having explored that island, and collected a great number of new plants). Forst. gen. 43. t. 22. H. B. et Kunth, nov. gen. amer. 5. p. 311. in a note. D. C. prod. 1. p. 486.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-cleft, petal-like, permanent. Petals 5, dilated and saccate at the base, with inflexed margins tapering gradually into a long ligula at the top, adhering to the fertile filaments at the base. Stamens 10, with the filaments connate at the base, with 5 sterile petal-like filaments, which spread stellately at the apex, alternating with 5 fertile 1-2-anthered ones; these are opposite the petals. Anthers 2-lobed, opening by a chink on both sides. Styles 5. Ovary 5-celled, 5-valved, each cell containing 3 or 5 ovulæ. Capsules 3-5-valved, echinated with villous bristles. Albumen fleshy. Cotyledons flat. Inflorescence cymose. Perhaps sufficiently distinct from *Byttnèria*.

1 C. echina'ta (Forst. l. c.) stem arboreous; leaves ovate-lanceolate, smoothish above, hoary beneath. ♄. S. Native of the Moluccas, New Caledonia, as well as the Friendly and Society Islands.—Rumph. amb. 3. p. 119. There is a variety with cordate, ovate, or unequal leaves. Flowers panicled, hoary.

Echinate-fruited Commersonia. Fl. June, July. Clt. 1806. Tree 20 feet.

2 C. a'spera (Colebr. mss. in Roxb. fl. ind. 2. p. 383. under *Buttnèria*,) leaves broad, cordate, entire, obtuse, with a short acumen, pubescent beneath, twice as long as the petioles; umbels of flowers axillary, corymbose; capsules very large, with stout short, remote thorns. Shrubby, unarmed. ♄. ب. S. Native of Chittagong in the East Indies. B. grandifòlia, D. C. prod. 1. p. 486. Stems 2 or 3 feet in circumference. Flowers small, yellowish, and villous without; pink-coloured within. This is probably the largest species known. The fruit resembles *Datùra*, whence its Bengalee name, *Climbing Dhootura*. It is a large, rambling, or climbing shrub.

Rough Commersonia. Shrub cl.

3 C. Jave'nsis; stem arboreous; leaves ovate-oblong, acuminated, unequally cordate, scabrous from stellate down above, and white beneath from tomentum. ♄. S. Native of Java. C. echinàta, Blum. bijdr. ex Schlecht. Linnæa. 1. p. 655.

Java Commersonia. Tree.

4 C. herba'cea; leaves cordate, acuminated, toothed; calyx reflexed; mucrones of petals hairy; peduncles axillary, few-flowered. ♃. S. Native on the coast of Coromandel on the Circar mountains. Buttnèria herbàcea, Roxb. cor. 1. t. 29. Flowers small, purple.

Herbaceous Commersonia. Pl. 1 foot.

5 C. Jackia'na (Wall. in Roxb. fl. ind. 2. p. 386. under *Buttnèria*,) leaves oblong, acuminated, entire, on very short petioles; flowers axillary, corymbose, on long peduncles; capsules echinated, with softish thorns. ♄. ب. S. Native of the East Indies on the hills of Penang. A large, climbing, unarmed shrub, rough

with stellate hairs. Flowers larger than those of the *C. áspera* species, yellowish ?

Jack's Commersonia. Fl. Sept. Shrub cl.

6 C. PLATYPHY'LLA (Andr. bot. rep. no. 603. t. 519. under *C. echinàta*,) hairy; stem shrubby; leaves broad, ovate, acuminated, unequally toothed, obliquely cordate, hairy on both surfaces. ♄. S. Native of the Molucca Islands. Sims, bot. mag. t. 519. Flowers white, in axillary panicles.

Var. β, Leschenáultii (D. C. prod. 1. p. 486.). M. de Candolle has a specimen from the botanic garden of Calcutta which is very like *C. platyphýlla*, but the leaves are equally serrate, smooth above; the panicles are axillary and leafy, and the floriferous branches opposite the leaves. Perhaps a proper species ?

Broad-leaved Commersonia. Fl. Ju. Jul. Clt. 1806. Sh. 4 ft.

7 C. PILÒSA (Roxb. fl. ind. 2. p. 381. under *Buttnèria*) leaves with from 3-5 acute angles, toothed, 7-nerved, with a large long gland on the middle one near the base; umbels of flowers axillary, proliferous; mucrones of petals filiform; stem twining. ♄. ◡. S. Native of Chittagong in the East Indies. Petals yellow on the outside and red within, of a bright orange-colour at the top. Younger branches hairy. This climbs to a great extent.

Hairy-branched Commersonia. Fl. Sept. Shrub cl.

8 C. GAUDICHAU'DI (Gay. in litt. D. C. prod. 1. p. 486.) stem shrubby; leaves profoundly cordate, unequal-sided; hispid above, tomentose beneath. ♄. G. Native of New Holland on the eastern coast. Flowers probably white.

Gaudichaud's Commersonia. Shrub 3 feet.

9 C. FRASE'RI (Gay, ex Spreng. syst. 1. p. 954.) leaves ovate-oblong, serrated, tomentose beneath; cymes opposite the leaves; sterile filaments elongated, petal-like, spatulate. ♄. G. Native of New Holland.

Fraser's Commersonia. Shrub 3 to 4 feet.

Cult. These shrubs will grow well in a mixture of loam and peat, and ripened cuttings will root readily in sand under a hand-glass, those of the first seven in heat.

VI. BYTTNE'RIA (in honour of David Sigismund Augustus Byttner, once a professor of botany in the University of Gottingen; who published in 1750 a catalogue of the plants in the garden of an amateur named Cunon). Lœfl. itin. 313. Lin. gen. no. 268. but not of Duhamel. D. C. prod. 1. p. 486.

LIN. SYST. *Monadélphia, Decándria.* Calyx 5-cleft. Petals 5, unguiculate, concave at the base, drawn into a ligula between the lobes of the concave part, which is variously divided. Tube of stamens urceolate, variously divided, with 5 sterile segments and 5 alternate, fertile ones opposite the petals, bearing twin or subglobose anthers. Style short, smooth, crowned by 5 stigmas. Capsule subglobose 5-lobed, echinated; carpels 1-seeded from abortion. Albumen wanting. Cotyledons convolute. Erect or scandent shrubs. Leaves simple. Umbels simple, disposed in something like racemes or panicles, rarely in corymbs. Flowers small, usually dark purple. Calyx and corolla valvate. This genus differs from *Commersònia* in the ligula of the petals being inserted on the back of the cucullate part of the petals, not gradually ending in a ligula as in that genus.

§ 1. *Unarmed species, native of New Holland (allied to Commersònia). Rulingia, R. Brown. These plants perhaps agree better with Commersònia than with Byttnèria. This section is no doubt a distinct genus.*

1 B. DASYPHY'LLA (Gay, in litt. D. C. prod. 1. p. 486,) leaves ovate-lanceolate, unequally serrated, hairy on both surfaces; mucrones of petals exceeding the calyx. ♄. G. Native of Van Diemen's Land. Commersònia diphýlla, Andr. bot. rep. t. 603. Flowers white, in terminal corymbs.

Thick-leaved Byttneria. Fl. June, Jul. Clt. 1780. Sh. 4 ft.

2 B. PANNÒSA (D. C. prod. 1. p. 486.) leaves ovate-lanceolate, unequally serrate-toothed, pubescent above, hairy beneath; mucrones of petals shorter than the segments of the calyx. ♄. G. Native of New Holland. Rulíngia pannòsa, R. Br. in bot. mag. t. 2191. Byttnèria inodòra, Gay. ined. Lasiopétalum tomentòsum, Cels. B. austràlis, Sieb. Flowers white from tomentum, in axillary panicles.

Cloth-leaved Byttneria. Fl. Ju. Jul. Clt. 1800. Sh. 3 ft?

3. B. HERMANNIÆFÒLIA (Gay, in litt. D. C. prod. 1. p. 486.) leaves ovate, unequally crenate-toothed, tomentose beneath; mucrones of petals shorter than the segments of the calyx. ♄. G. Native of New Holland about Port Jackson. Flowers white.

Hermannia-leaved Byttneria. Fl. June, Jul. Clt. 1823. Sh.

§ 2. *Unarmed species, natives of America, and one from the Mauritius.*

4 B. MACROPHY'LLA (H. B. et Kunth, nov. gen. amer. 5. p. 315.) leaves cordate, ovate-roundish, obtuse, serrate-crenate, marked at the base with a clear spot, and are as well as branches pubescent; peduncles many-flowered, axillary, usually in threes. ♃. S. Native of New Granada near Honda. Points of petals dark-purple.

Long-leaved Byttneria. Pl. 1 to 2 feet.

5 B. MELASTOMOÌDES (St. Hil. fl. bras. 1. p. 144. t. 28.) stem suffruticose, nearly simple; leaves ovate, quite entire, smooth, upper ones lanceolate; panicle terminal, elongated, nearly simple; tube of stamens 5-lobed; lobes very obtuse, 3-crenate, sterile; anthers sessile beneath the lobes. ♄. S. Native of Brazil. Racemes compound, involucrated, disposed in umbel-like fascicles along the rachis.

Melastoma-like Byttneria. Fl. July. Shrub 2 feet.

6 B. GAYA'NA (St. Hil. fl. bras. 1. p. 145.) stem shrubby, scandent, unarmed; leaves oblong, or oblong-lanceolate, long-acuminated, quite entire, smoothish; peduncles axillary, umbelliferous; tube of stamens 5-cleft, with the antheriferous divisions a little below. ♄. ◡. S. Native of Brazil in the province of St. Paul. Petals dark-purple, ending in yellow points.

Gay's Byttneria. Fl. March. Shrub climbing.

7 B. SIDÆFÒLIA (St. Hil. fl. bras. 1. p. 146.) stem suffruticose, climbing, unarmed; leaves heart-shaped, acuminated, very acute, quite entire; corymbs sublateral; tube of stamens 10-cleft, 5 sterile divisions broadest, antheriferous, 5, very short and narrow. ♄. ◡. S. Native of Brazil on the banks of the river Parahyba near Uba. Petals smooth, white.

Sida leaved Byttneria. Fl. Feb. Shrub cl. or tw.

8 B. BRASILIE'NSIS (Spreng. syst. 1. p. 790.) leaves subcordate-oblong, acuminated, triple-nerved, serrated, floccosely-tomentose; peduncles axillary, subracemose; branches terete, tomentose. ♄. S. Native of Brazil.

Brazilian Byttneria. Shrub.

9 B. CATALPÆFÒLIA (Jacq. hort. schœnbr. 1. t. 46.) leaves cordate, quite entire, smooth, acuminate; stem climbing. ♄. ◡. S. Native of Caraccas. Flowers white. Peduncles solitary or tern, axillary, panicled.

Catalpa-leaved Byttneria. Clt. 1823. Shrub cl.

10 B. HETEROPHY'LLA (Hook, bot. misc. pt. 3. p. 287. t. 61.) climbing; leaves cordate, with a short acumen, entire, lobed, or palmate; petals with a tooth on each side of the saccate part. ♄. ◡. S. Native of the Mauritius, and Madagascar. Telfàiria volùbilis, Newm. mss. Heterophýllum ramòsum, Bojer. mss. Panicles axillary. Leaves pubescent in the axils of the veins. Calyx scarlet. Petals yellow, but reddish on the back, ending in a long, linear, ciliated point.

Various-leaved Byttneria. Shrub climbing.

§ 3. *Species prickly on the stems, branches, petioles, and nerves.*

11 B. HIRSU`TA (Ruiz et Pav. fl. per. 3. p. 10.) leaves cordate, acute, crenate, hairy beneath, with the ribs and petioles prickly; peduncles compound, crowded. ♄. S. Native of Peru on the Andes. Flowers umbellate, involucrate. Petals yellow at the base but purple at the apex.

Hairy Byttneria. Shrub 2 to 3 feet.

12 B. MO'LLIS (H. B. et Kunth, nov. gen. amer. 5. p. 314. t. 481. *a* and *b*.) leaves cordate, acuminated, crenate, unarmed, soft, tomentose, marked with a clear spot at the base; branches prickly, villous, tomentose; umbels 7-11-flowered, axillary, and opposite the leaves, solitary or tern. ♄? S. Native of South America near Santa Fe de Bogota. Calyx red. Points of petals white.

Soft-leaved Byttneria. Shrub 3 to 4 feet.

13 B. CORDA`TA (Lam. dict. 3. p. 523.) leaves cordate, acuminate, serrate, with 1 gland beneath, pubescent; petioles unarmed; stems prickly; peduncles pendulous, usually tern, unequal 6-7-flowered, umbellate. ♄. S. Native of Peru near Lima, in hedges at Chancay. Cav. diss. 5. p. 291. t. 150. Ræm. et Schultz. syst. 1. p. 469. exclusive of synonym of Willd. Petals white, villous, with yellow mucrones.

Cordate-leaved Byttneria. Fl. July. Clt. 1793. Sh. 4 ft.

14 B. CELTOÌDES (St. Hil. fl. bras. 1. p. 141. t. 24.) stem shrubby, procumbent, prickly; leaves ovate-oblong, with a long acumen, cordate at the base, obsoletely serrated, puberulous on both surfaces, roughish above; panicle axillary, umbelliferous, shorter than the leaves; tube of stamens 10-cleft, each division containing 5 anthers. ♄. S. Native of Brazil near Canabraba. Petals dark-purple.

Celtis-like Byttneria. Fl. April. Shrub 6 to 7 feet.

15 B. SAGITTÆFÒLIA (St. Hil. fl. bras. 1. p. 142. t. 27.) stem suffruticose, erect; leaves arrow-shaped, acute, upper ones toothed at the top; petioles triquetrous; raceme terminal; tube of stamens 5-lobed; lobes 3-toothed, sterile; anthers sessile beneath the lobes. ♄. S. Native of Brazil in the province of Minas Geraes. Petals yellowish-green, ending in dark-purple ligulæ. Raceme composed of involucrated umbels. The stem is covered with tubercles or prickles, which are evident under a microscope.

Var. β, *pubérula* (St. Hil. l. c.) stem puberulous; leaves less rough, entire at the apex; bracteas leafy; umbels much longer than in the species. Province of St. Paul.

Arrow-leaved Byttneria. Shrub 2 feet.

16 B. AUSTRA`LIS (St. Hil. fl. bras. 1. p. 145.) stem shrubby, prickly, scandent? leaves oblong with long acumens, obtuse at the base, quite entire, bearded in the axils of the nerves; peduncles sublateral, umbelliferous; tube of stamens 5-lobed. ♄. ⏑. S. Native of Brazil in the province of St. Catherine. Petals ending in dark purple points.

Southern Byttneria. Shrub cl.

17 B. SULCA`TA (Ruiz. et Pav. fl. per. 3. p. 10.) leaves cordate, ovate, serrated, pubescent, with the ribs and petioles prickly; peduncles twin, 3-5-flowered. ♄. S. Native in the warmer parts of Peru. Petals green at the base, with dark-purple points.

Furrowed-stemmed Byttneria. Shrub.

18 B. LANCEOLA`TA (Moc. et Sesse, fl. mex. icon. ind. D. C. prod. 1. p. 487.) leaves ovate-lanceolate, somewhat cordate, rarely serrated, acuminate, and are unarmed as well as the petioles; stem prickly, climbing, angular; peduncles tern, 5-7-flowered. ♄. S. Native of Mexico on the mountains. Petals white with purple points.

Lanceolate-leaved Byttneria. Shrub cl.

19 B. OVA`TA (Lam. dict. 1. p. 522.) leaves ovate, serrate-toothed, smooth; petioles unarmed; branches 5-angled, prickly; stem erect; pedicels 3-6, axillary, 1-flowered, drooping. ♄. S. Native of Peru. Cav. diss. 5. p. 291. t. 149. f. 1. Flowers villous, white, with purple ciliated mucrones.

Ovate-leaved Byttneria. Shrub 8 feet.

20 B. MICROPHY'LLA (Lin. mant. 209.) leaves elliptical, quite entire, but emarginate at the apex; prickles stipular; pedicels short, 3-9, axillary, 1-flowered. ♄. S. Native of St. Domingo near Port au Prince. Cav. diss. 5. p. 292. t. 143. f. 2. Jacq. hort. vind. t. 29. Flowers white with purple mucrones.

Small-leaved Byttneria. Fl. Ju. Clt. 1816. Shrub 5 ft.

21 B. TERETICAU'LIS (Lam. dict. 1. p. 523.) leaves lanceolate, acuminated, quite entire; branches, petioles, and stems terete, prickly; pedicels solitary, lateral, 1-flowered. ♄. S. Native of Peru. Cav. diss. 5. p. 292. t. 149. f. 2. Flowers white, with purple mucrones?

Round-stemmed Byttneria. Shrub 4 feet.

22 B. SCA`BRA (Lin. syst. 197.) leaves lanceolate, toothed, somewhat hastate at the base; branches, petioles, and peduncles angular; stems prickly; peduncles axillary, numerous, subumbellate; tube of stamens 10-crenate. ♄. S. Native of South America between Cayenne and Couron. Cav. diss. 5. p. 291. t. 148. f. 1. Aubl. guian. t. 96. Flowers white, with red mucrones; anthers yellow.

Scabrous Byttneria. Fl. July. Clt. 1793. Shrub 3 to 5 ft.

23 B. CARTHAGENE'NSIS (Jacq. amer. ed. pict. p. 41.) cauline leaves ovate, those of the branches ovate-lanceolate, bluntly acuminate, entire; ribs of leaves, petioles, and rambling branches prickly; racemes short, axillary, aggregate. ♄. S. Native of Carthagena at the margins of woods. B. aculeàta, Jacq. amer. 76. Chætæ`a aculeàta, Jacq. enum. 17. Flowers small, white, withered mucrones.

Carthagena Byttneria. Fl. Sept. Oct. Shrub 5 to 6 feet.

† *Species not sufficiently known.*

24 B. ACUMINA`TA (Bred. ex Willd. rel. in Ræm. and Schult. syst. 5. p. 470.) leaves ovate, acuminate, unarmed; petioles somewhat prickly; stem round, prickly. ♄. S. Native of Caraccas.

Acuminate-leaved Byttneria. Shrub.

25 B. SALICIFÒLIA (H. et. B. ex Willd. rel. in Ræm. and Schult. syst. 5. p. 470.) leaves lanceolate, smooth; stem angular, and is as well as the petioles and ribs of leaves prickly. ♄. S. Native of Cumana.

Willow-leaved Byttneria. Shrub.

26 B. CORYLIFÒLIA (H. et B. l. c.) leaves oblong, somewhat cordate, serrate, acute; stem prickly. ♄. S. Native of South America.

Hazel-leaved Byttneria. Fl.? Shrub?

Cult. The species of this genus are of easy culture; they thrive best in a mixture of loam and peat. Ripened cuttings of the stove species root freely in mould or sand under a hand-glass, in heat, and young cuttings of the greenhouse species will root freely in sand under a hand-glass; they also may be raised from seeds, which sometimes ripen in this country. The herbaceous kinds may be either increased by dividing the plants at the roots or by seeds. None of them are worth cultivating except in general collections.

VII. AYE`NIA (in honour of the Duke D'Ayen of the house of Noailles, who has contributed to the progress of botany by

his zeal in collecting plants), Lin. gen. no. 1020. D. C. prod. 1. p. 487.

LIN. SYST. *Monadélphia, Decándria.* Calyx 5-parted. Petals 5, arched, broadest at the apex, with long claws, ending each in 1 or 2 pedicellate glands. Urceolus of stamens 10-15-toothed, 5 or 10 of which are sterile, and the 5 alternate ones bearing 1 anther each. Style 1. Stigma 5-angled. Carpels 5, 2-valved, 1-seeded, conniving into a somewhat globose echinated fruit. Albumen wanting. Cotyledons leafy, convolute. Plants with simple, serrate leaves, and axillary, few-flowered peduncles.

1 A. PUSI'LLA (Lin. spec. 1354.) leaves ovate, smoothish, sharply serrated; stems prostrate; peduncles short, 2-3-flowered, axillary. ☉. S. Native of the Caribbee Islands, as well as of Peru. Cav. diss. 5. p. 289. t. 147. Lin. in act. holm. 1756. p. 23. t. 2. Dayènia, Mill. illust. t. 118.—Sloane, hist. t. 132. f. 2. A weak shrubby plant. Petals reddish, each ending in a black mucrone.

Least Ayenia. Fl. July, Oct. Clt. 1756. Shrub ½ foot.

2 A. LÆVIGA'TA (Swartz, fl. ind. occ. 2. p. 1131.) leaves ovate, quite smooth, entire; urceolus exserted, 10-toothed, besides the stamens. ♄. S. Native of Jamaica in bushy places, but rare. Flowers blood-coloured. Peduncles axillary, solitary, filiform, 1-flowered.

Smooth-leaved Ayenia. Shrub 2 feet.

3 A. TOMENTÒSA (Lin. spec. 1354.) leaves ovate, roundish, tomentose; urceolus exserted, 5-toothed besides the stamens. ♄? S. Native of Cumana in South America. Lœfl. itin. 230. no. 3.

Tomentose Ayenia. Shrub 2 feet.

4 A. SIDÆFÒLIA (Lœfl. itin. 257.) leaves ovate-oblong, doubly serrated, tomentose beneath. ♄. S. Native of South America. This species is joined by Linneus to *A. tomentòsa*. Flowers reddish. Urceolas 5-toothed besides the stamens.

Sida-leaved Ayenia. Shrub.

5 A. MA'GNA (Lin. spec. 1354.) leaves cordate, ovate, acuminate, serrated, pubescent; peduncles many-flowered, longer than the petioles; urceolus 5-toothed. ♄. S. Native of Cumana in South America and in Mexico. A. cardiopétala, Moc. et Sesse, fl. mex. icon. ind. Flowers small, greenish, or red.

Large Ayenia. Shrub 2 to 5 feet.

6 A. CORDIFÒLIA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 488.) leaves cordate, serrated, pubescent; pedicels numerous, aggregate, shorter than the petioles. ☉. S. Native of Mexico on the mountains.

Heart-leaved Ayenia. Fl. June, July. Pl. 1 foot.

Cult. The species of *Ayènia* are of easy culture; they succeed best in a rich loamy soil. Cuttings of the shrubby kinds root freely in sand, under a hand-glass, in a moist heat. The seeds of *A. cordifòlia* requires to be sown on a hot-bed, and when the plants are of sufficient size they may be planted out in the open border in a sheltered situation. None of the species are worth cultivating, except in general collections.

VIII. KLEINHO'VIA (in honour of Kleinhoff, once director of the botanic garden in Batavia). Lin. gen. no. 1024. Gært. fruct. 2. p. 261. t. 137. H. B. et Kunth, nov. gen. amer. 5. p. 313. D. C. prod. 1. p. 488.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-parted (f. 89. *a.*). Petals 5, (f. 89. *e.*) one of which is longer than the rest and cut at the apex (f. 89. *b.*). Filaments of stamens monadelphous at the base (f. 89. *d.*), divided into 5 bundles at the top (f. 89. *h.*), each bundle bearing 3 2-lobed anthers on the back (f. 89. *l.*), opposite the petals. Ovary stipitate. Carpels 5 (f. 89. *g.*), constantly connected together, each containing 5-ovulæ. Style 1. Stigma somewhat crenate. Capsule inflated, turbinate, 5-angled, 5-celled, 5-seeded (f. 89. *g.*). Seeds roundish. Cotyledons spirally twisted about the plumule.

1 K. HO'SPITA (Lin. spec. 1365.) ♄. S. Native of the Molucca Islands.—Rumph. amb. 3. p. 113. Cav. diss. 5. p. 18. t. 146. This is a smooth tree, with broad, cordate, acuminate, entire leaves, bearing divaricate racemes of small, pink flowers, so as to form a terminal panicle. Rumphius observes that the leaves when bruised have a smell like violets. especially the young ones.

FIG. 89.

We have seen this plant in Trinidad, where it appears to be herbaceous, about 6 or 8 feet high, with many stems rising from the root.

Stranger Kleinhovia. Fl. July, Sept. Clt. 1800. Tr. 20 ft.

Cult. This tree will grow well in any light rich soil, and cuttings will root freely in sand under a hand-glass, in heat.

Tribe II.

LASIOPETA'LEÆ (plants agreeing with *Lasiopétalum* in important characters.) Gay, diss. p. 8. and mem. du mus. 7. p. 431. H. B. et Kunth, nov. gen. amer. 5. p. 313. Calyx 5-parted, petal-like (f. 90. *b.*), permanent or marcescent. Petals minute, scale-formed (f. 90. *c.*), rarely wanting. Filaments of stamens awl-shaped, connate at the base, sometimes 5, opposite the petals, sometimes 10, alternately sterile and fertile. Anthers incumbent, with contiguous lobes. Ovary 3-5-celled; cells containing from 2 to 8-ovulæ. Carpels 5, 2-valved, usually closely connate into a single fruct, but sometimes somewhat free. Seeds strophiolate at the base. Albumen fleshy. Embryo straight. Cotyledons flat, leafy. New Holland shrubs.

IX. SERI'NGIA (Nicholas Charles Seringe, a Swiss botanist, author of numerous papers in De Candolle's Prodromus). Gay, diss. p. 12. D. C. prod. 1. p. 488.

LIN. SYST. *Decándria, Monogýnia.* Calyx marcescent. Petals wanting. Filaments 10, with the 5 alternate ones sterile. Anthers bursting by dorsal chinks. Carpels 5, 2-valved, 2-3-seeded, each ending in a style. Strophiola of seed crenate.

1 S. PLATYPHY'LLA (Gay, diss. p. 13. t. 1. and 2.). ♄. G. Native of New Holland on the eastern coast. Lasiopétalum arboréscens, Ait. hort. kew. ed. 2. vol. 2. p. 36. Peduncles opposite the leaves, bearing many flowers, in crowded cymes. Stipulas small, deciduous. Leaves ovate-lanceolate, grossly toothed. Flowers yellowish from tomentum.

Broad-leaved Seringia. Fl. April, July. Clt. 1802. Shrub 4 to 5 feet.

Cult. This shrub will thrive well in a mixture of sand, loam, and peat, and young cuttings planted in the same kind of soil under a hand-glass will root readily, or it may be increased by seeds, which occasionally ripen in this country.

X. LASIOPE'TALUM (from λασιος, *lasios*, woolly, and πεταλον, *petalon*, a petal; in allusion to the calyx being woolly.) Smith, in Lin. trans. 4. p. 216. D. C. prod. 1. p. 489.

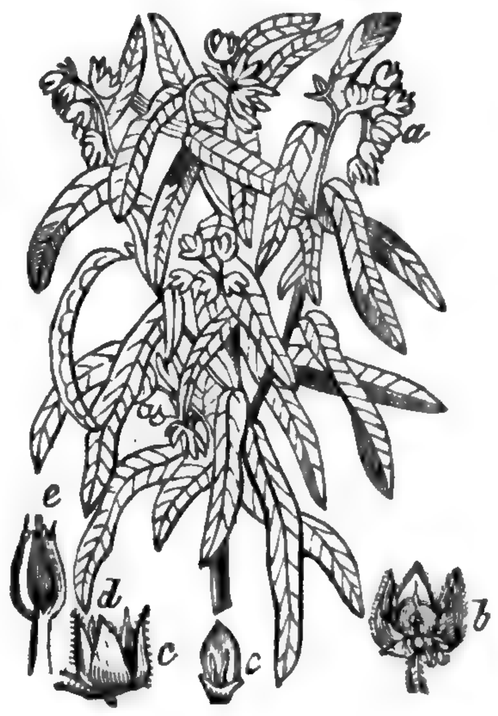
LIN. SYST. *Pentándria, Monogýnia.* Calyx permanent (f. 90. *b.*). Petals 5, in the form of glands. Filaments 5, free. Anthers bursting by 2 pores on the inside (f. 90. *e.*). Ovary 1, 3-celled; cells containing 2-ovulæ. Capsules 3-valved, with valvular dissepiments opening at the cells. Strophiola of seeds jagged. Stipulas wanting. Leaves linear-lanceolate, quite entire, rusty beneath. Inflorescence in cymes opposite the leaves.

1 L. FERRUGI'NEUM (Smith, in Andr. bot. rep. t. 208.) segments of calyx tomentose on both sides. ♄. G. Native of New Holland. Vent. malm. t. 59. Sims, bot. mag. t. 1766. Cav. diss. p. 16. t. 3. Calyx covered with brown tomentum. Petals small, dark-purple.

Rusty Lasiopetalum. Fl. April, July. Clt. 1791. Sh. 2 to 4 ft.

2 L. PARVIFLÒRUM (Rudge, in Lin. trans. 10. p. 297. t. 19. f. 1.) segments of calyx smooth on the inside. ♄. G. Native of New Holland. Gay, diss. p. 17. t. 4. Flowers small, yellowish-brown from tomentum.

FIG. 90.



Small-flowered Lasiopetalum. Fl. Apr. Jul. Clt. 1810. Sh. 3 ft.

Cult. These are very pretty shrubs; they grow best in a mixture of loam, peat, and sand, and ripened cuttings will root freely in sand under a hand-glass.

XI. GUICHENO'TIA (in honour of Anthony Guichenot, who went round the world with Captain Baudin along with Riedle and Leschenault.) Gay, diss. p. 20. D. C. prod. 1. p. 489.

LIN. SYST. *Pentándria, Monogýnia.* Calyx permanent. Petals 5, gland-formed. Filaments 5, free. Anthers bursting by lateral chinks. Ovary 5-celled; cells containing 5 ovulæ, clothed with dense tomentum within. Stipulas wanting. Leaves 3 in a whorl, linear-lanceolate, entire. Inflorescence racemose.

1 G. LEDIFÒLIA (Gay, diss. p. 19. t. 5.). ♄. G. Native of New Holland on the western coast. Shrub hoary all over. This is a perfectly distinct genus from *Lasiopétalum ledifòlium* of Vent., which is now *Borònia ledifòlia*. Calyx grey-tomentose. Petals dark-purple.

Ledum-leaved Guichenotia. Shrub 2 feet.

Cult. This is a very pretty shrub, which will thrive well in a mixture of sand, loam, and peat, and ripened cuttings will root readily in sand under a hand-glass.

XII. THOMA'SIA (in memory of Peter and Abraham Thomas, collectors of Swiss plants in the time of Haller.) Gay, diss. p. 20. D, C. prod. 1. p. 489.

LIN. SYST. *Penta-Decándria, Monogýnia.* Calyx permanent, veiny. Petals 5, scale-formed, or wanting. Filaments 5 or 10, for the most part connate at the base. Anthers bursting by lateral chinks. Ovary 3-celled; cells containing from 2-8-ovulæ. Capsules 3-valved, dissepiments formed from the edges of the valves. Strophiola of seed crenate. Stipulas leafy, permanent. Leaves ovate, lobed, clothed on both surfaces with hispid tomentum. Inflorescence racemose, opposite the leaves. Bracteas 3-parted.

§ 2. *Pentandrous species with a long style, and with 2 seeds in each cell of the capsule.*

1 T. PURPU'REA (Gay, diss. p. 22. t. 6.) leaves linear-elliptical, entire; stipulas leafy; petals 5; capsules stipitate, smooth, with 3 deep furrows. ♄. G. Native of New Holland on the south-west coast. Lasiopétalum purpùreum, Sims, bot. mag. t. 1755. Lasiopétalum purpuráscens, Lois. herb. amat. t. 294. Calyx purple.

Purple-flowered Thomasia. Fl. April, July. Clt. 1803. Shrub 1 to 2 feet.

2 T. FOLIÒSA (Gay, diss. p. 24. t. 7.) leaves ovate, cordate, bluntly 5-7-lobed; stipulas minute; petals wanting; capsules sessile, tomentose, with 3 furrows. ♄. G. Native of New Holland on the south-west coast.

Leafy Thomasia. Fl. April, July. Clt. 1823. Shrub 1 ft.

§ 2. *Decandrous species with a short style, and from 3 to 8 seeds in each cell of the capsule.*

3 T. SOLANA'CEA (Gay, diss. p. 26. t. 6.) petals 5; leaves sinuate-lobed, hairy. ♄. G. Native of New Holland on the south-west coast. Lasiopétalum triphýllum, Smith in Rees' cyclop. Lasiopétalum solanàceum, Sims, bot. mag. t. 1486. Leaves the largest of all the genus. Calyx pinkish-purple.

Solanum-flowered Thomasia. Fl. April, July. Clt. 1803. Shrub 1 to 5 feet.

4 T. TRIPHY'LLA (Gay, diss. p. 28.) leaves sinuately-angular, smoothish on the back; petals wanting; capsules mucronate. ♄. G. Native of New Holland in Van Lewin's Land. Lasiopétalum triphýllum, Labill. nov. holl. 1. p. 63. t. 88. Leaves appearing ternate from being furnished with a large, stalked stipula on each side.

Three-leaved Thomasia. Fl. April, July. Clt. 1824. Shrub 2 to 4 feet.

5 T. QUERCIFÒLIA (Gay, diss. p. 29.) leaves 3-lobed, pinnatifid, clothed with rough tomentum beneath; petals wanting; capsules mutic. ♄. G. Native of New Holland. Lasiopétalum quercifòlium, Andr. bot. rep. t. 459. Sims, bot. mag. 1485. Flowers purplish.

Oak-leaved Thomasia. Fl. April, July. Clt. 1803. Shrub 1 to 3 feet.

6 T. DIFFU'SA; leaves 3-lobed; stems diffuse; petals wanting? ♄. G. Native of New Holland. Flowers white.

Diffuse Thomasia. Fl. April, July. Clt. 1825. Sh. ½ foot.

Cult. *Thomàsia* is a genus of pretty under shrubs, which deserve to be cultivated in every collection; they will thrive well in a mixture of loam, sand, and peat, and ripened cuttings will root freely in sand, under a hand-glass.

XIII. KERAUDRE'NIA (in honour of — Keraudren, a French nobleman?). Gay, diss. p. 31. D. C. prod. 1. p. 489.

LIN. SYST. *Pentándria, Monogýnia.* Calyx permanent. Petals wanting. Filaments 5, fertile, imbricate and conniving at the base. Anthers bursting by dorsal chinks. Ovary 3-celled, each cell containing many ovulæ. Styles 3-parted, connected. Capsules echinately-tomentose, 1-celled from abortion, 3-valved, with valvular dissepiments. Seeds twin, with an entire strophiola. Stipulas minute, permanent. Leaves sinuately waved. Inflorescence corymbose, with jointed pedicels.

1 K. HERMANNIÆFÒLIA (Gay, diss. p. 32. t. 8.). ♄. G. Native of New Holland on the western coast. A stiff shrub.

Hermannia-leaved Keraudrenia. Fl.? Shrub 1 foot.

Cult. This shrub will thrive well in a mixture of loam and peat, and ripened cuttings will root readily in sand under a hand-glass.

Tribe III.

HERMANNIE Æ (plants agreeing with *Hermánnia* in important characters). D. C. prod. 1. p. 490. Hermanniàceæ, Kunth, malv. p. 11. nov. gen. amer. 5. p. 312. Flowers hermaphrodite. Calyx 5-lobed, permanent, sometimes naked, sometimes somewhat involucrated. Petals 5, spirally twisted before expansion, with the claws usually adnate to the tube of the stamens. Stamens 5, monadelphous at the base, all fertile and opposite the petals. Anthers ovate, 2-celled. Styles 5, connected into 1, crowned by as many stigmas. Carpels 5, joined into 1 fruit; cells or carpels usually 2-seeded. Albumen fleshy. Embryo enclosed, straight, or curved, with an ovate, inferior radicle, and flat, leafy, entire cotyledons.

XIV. MELO'CHIA (a name altered from the Arabic name of *Córchorus olitòrius*, *Melóchich* or *Melókhych*, which is used in the East as a salad-plant). H. B. et Kunth, nov. gen. amer. 5. p. 322.—Melòchia, spec. Lin. gen. no. 829. D. C. prod. 1. p. 490.

LIN. SYST. *Monadélphia*, *Pentándria*. Calyx 5-cleft, naked, or furnished with 1-3 calyculate bracteas. Petals 5, spreading. Stamens 5, monadelphous at the base. Styles 5, more or less connected. Capsules 5-celled, 5-valved, opening at the cells, bearing a dissepiment in the middle of each valve. Seeds from 1-2 in each cell. Herbs or subshrubs with simple serrated leaves. Flowers terminal, axillary, and opposite the leaves, capitate, umbellate, or glomerate, spicate, corymbose or panicled, rarely solitary, white, red, lilac, yellow, purple, violet, and of 2 colours. Calyx valvate. Petals twisted. The genus *Reidlèia* does not appear to differ generically from *Melòchia*, and perhaps it would be better if these two genera were again united. Those species said to have 10-valved capsules, more properly belong to the genus *Riedlèia* as it now stands.

1 M. PYRAMIDA'TA (Lin. syst. p. 510.) leaves ovate, acute, serrated, smooth; upper ones oblong or linear-oblong; peduncles 5-10-flowered, capitate, opposite the leaves; petioles and branches puberulous; tube of stamens 5-cleft at the top; capsule pyramidal at both ends. ♄. S. Native of the Caribbee Islands and Brazil. Cav. diss. 6. p. 319. t. 172. f. 1. M. Domingénsis, Jacq. vind. 1. t. 30. Flowers flesh-coloured or violaceous, yellow at the claws.

Pyramidal-capsuled Melochia. Fl. July, Aug. Clt. 1768. Shrub 1 to 2 feet.

2 M. ULMARIOÌDES (St. Hil. fl. 1. p. 159.) stem twiggy; cauline leaves ovate, heart-shaped, acute, dentately serrated, smoothish above, but pubescent beneath; panicle terminal, cymose, elongated; tube of stamens cleft in 5, even to the middle; capsule globose, villous, 10-valved at the apex. ♄. S. Native of Brazil in the province of Rio Grande do Sul at the river Uruguay.

Ulmaria-like Melochia. Fl. Jan. Shrub 1 to 2 feet.

3 M. SERI'CEA (St. Hil. fl. bras. 1. p. 160.) stem twiggy, nearly simple, hairy; cauline leaves heart-shaped, unequally silky; panicle terminal, simple, interrupted; tube of stamens deeply 5-cleft; capsule globose, villous, 10-valved at the apex. ♄. S. Native of Brazil near Villa Rica. Flowers yellow?

Silky Melochia. Fl. Feb. Pl. 3 to 5 feet.

4 M. GRAMINIFÒLIA (St. Hil. fl. bras. 1. p. 160. t. 31.) stem nearly simple, twiggy; leaves on short petioles, linear, acute, remotely serrated, smooth; panicle terminal, very slender; tube of stamens nearly entire; capsule subglobose, at length 10-valved. ♄. S. Native of Brazil in the province of Minas Novas in dried-up marshes. Petals purple, but yellow at the base with purple veins.

Grass-leaved Melochia. Fl. June. Pl. 1 to 1½ foot.

5 M. TURPINIA'NA (H. B. et Kunth, nov. gen. amer. 5. p. 323. t. 432.) leaves somewhat unequal-sided, ovate, acute, truncate, and somewhat cordate at the base, doubly crenate-serrated, pubescent above, hoary from tomentum beneath; umbels 7-10-flowered, longer than the petioles. ♄. S. Native of New Granada. Flowers red or violaceous.

Turpin's Melochia. Fl. June, July. Shrub 1 to 2 feet.

6 M. TOMENTÒSA (Lin. spec. 932.) leaves unequal-sided, ovate-oblong, acute, serrated, with plaited lines, hoary from tomentum on both surfaces as well as the branchlets; umbels 3-8-flowered, axillary, longer than the petioles, but they are opposite the leaves on the branchlets. ♄. S. Native of the Caribbee Islands in dry fields as well as on the sandy sea-coast of Cumana. H. B. et Kunth, nov. gen. amer. 5. p. 323. Flowers purple. Style 5-cleft.

Var. β, *frutéscens* (Jacq. obs. 2. p. 24.) differing from the species in its habit being much harder, as well as the leaves being much smaller. Flowers violaceous. Perhaps a distinct species.

Tomentose Melochia. Fl. May, June. Clt. 1768. Shrub 6 to 7 feet.

7 M. MACROPHY'LLA (H. B. et Kunth, nov. gen. amer. 5. p. 324.) leaves equal-sided, ovate, acute, cordate, crenate-serrated, hairy above, but clothed with fine, soft, hoary tomentum beneath; umbels many-flowered, equal in length with the petioles. ♄. S. Native of New Andalusia near Bordones. Flowers white.

Long-leaved Melochia. Shrub 3 to 6 feet.

8 M. LILACÌNA (St. Hil. fl. bras. 1. p. 162.) stems decumbent, branched; leaves on short petioles, cordate at the base, unequally serrated, plaited, silky-villous on both surfaces, lower ones somewhat oblong-ovate, intermediate ones ovate or ovate-roundish, uppermost ones roundish-ovate, or roundish; flowers glomerate, disposed in interrupted spikes; tube of stamens entire; capsule ovate, 5-lobed, villous, 5-valved. ♃. S. Native of Brazil in the province of Minas Geraes, not far from the river St. Francisco. Flowers lilac.

Lilac-flowered Melochia. Fl. Aug. Pl. decumbent.

9 M. HERMANNIOÌDES (St. Hil. fl. bras. 1. p. 163. t. 32.) stem suffruticose, prostrate; leaves usually obovate, very obtuse, toothed, quite entire at the base, pilose on both surfaces; heads of flowers subumbellate; peduncles opposite the leaves, hairy; tube of stamens 5-cleft; capsule somewhat obcordately-globose, 5-lobed. ♄. S. Native of Brazil in the province of the Missions, in grassy fields. Petals violaceous.

Hermannia-like Melochia. Fl. Jan. Feb. Shrub prostrate.

10 M. SI'MPLEX (St. Hil. fl. bras. 1. p. 164.) stem suffruticose, nearly simple; leaves lanceolate, finely denticulated, puberulous on the nerves; flowers axillary, and at the tops of the branches in fascicles; capsule spherical, pilose, 5-valved. ♄. S. Native of Brazil in the province of St. Paul, in the northern part. Petals purple or violet at the top but yellow at the base.

Simple-stemmed Melochia. Fl. Mar. Shrub 1 foot.

11 M. NEPETOÌDES (St. Hil. fl. bras. 1. p. 165.) stem suffruticose; leaves ovate, cordate at the base, crenate, puberulous above, but pubescent beneath; heads of flowers axillary; peduncles longer than the petioles, pubescent; capsule pyramidal at both ends, broad. ♄. S. Native of Brazil in the province of Minas Novas, on the banks of a rivulet called Sucuriu. Flowers purplish.

Nepeta-like Melochia. Fl. May. Shrub 1½ foot.

12 M. BETONICÆFÒLIA (St. Hil. fl. bras. 1. p. 165.) leaves ovate-oblong, cordate at the base, crenate-toothed, rather pubescent above, but pubescent beneath; heads of flowers axillary, with the peduncle shorter than the petiole; tube of stamens 5-cleft; capsule pyramidal at both ends, pubescent, with the lobes of the exterior angle furnished with a tooth. ♄. S. Native of Brazil in the province of Minas Novas. Flowers white.

Betony-leaved Melochia. Fl. May. Shrub 1 to 2 feet.

13 M. CORDIFO'RMIS (St. Hil. fl. bras. 1. p. 160.) leaves heart-shaped, acute, somewhat doubly-toothed, puberulous above, but tomentose beneath; heads of flowers axillary, stalked; tube of stamens 5-cleft at the apex. ♄. S. Native of Brazil in the province of Minas Novas. Flowers pale-purple.

Heart-leaved Melochia. Fl. June. Shrub 1 to 2 feet.

14 M. PARVIFÒLIA (H. B. et Kunth, nov. gen. amer. p. 325.) leaves small, oblong or obovate-oblong, obtuse at both ends, crenate-serrated, roughish above, but clothed with close-pressed hairs beneath; flowers crowded in umbels at the tops of the branches. ♄. S. Native of South America in arid places near Caraccas. Flowers white.

Small-leaved Melochia. Fl. Jul. Aug. Clt. 1819. Sh. 1½ ft.

15 M. LANA'TA (St. Hil. fl. bras. 1. p. 167.) stem suffruti-

cose, erect, branched, woolly, canescent; leaves ovate-elliptical, toothed, quite entire at the base, silky-villous above, but woolly and hoary beneath; heads of flowers stalked, opposite the leaves, dense; tube of stamens profoundly 5-cleft. ♄. S. Native of Brazil in the province of Minas Geraes, near Olho d'Agoa.

Var. β, inclùsa (St. Hil. l. c.) leaves narrower, elliptic, less woolly; heads of flowers less woolly; stamens inclosed; petals much smaller; style a little longer than the petals.

Woolly Melochia. Fl. Sep. Oct. Shrub 1 to 2 feet.

16 M. Portorice'nsis (Spreng. syst. 3. p. 29.) leaves oblong, obtuse, crenated, hoary tomentose on both surfaces; peduncles umbelliferous, short. ♄. S. Native of Porto-Rico. M. crenàta, Bertero.

Porto-Rico Melochia. Shrub 1 to 2 feet.

Cult. Melòchia is a genus of plants hardly worth cultivating except in botanic gardens. They thrive well in any light rich soil, and cuttings root readily in the same kind of soil under a hand-glass, in heat. They may be also increased by seeds, which generally ripen in this country.

XV. RIEDLE'IA (in honour of M. Riedle, a French naturalist, who accompanied Captain Baudin round the world.) D. C. prod. 1. p. 490.—Riedlèia, Vent. choix. no. 37.—Mougeòtia, Kunth. diss. p. 12. nov. gen. amer. 5. p. 326.—Visènia, Houtt. Pfl. syst. 6. p. 287. Spreng. syst. 3. p. 29.

Lin. syst. *Monadélphia, Pentándria.* Calyx 5-cleft, naked, or furnished with 1-3 calyculate bracteas. Petals 5, spreading. Stamens 5, monadelphous at the base. Styles 5. Carpels 5, joined into a simple fruit, which is therefore 5-celled and 5-valved, at length separating into 5 1-2-seeded divisions, which open longitudinally, and are free from the central axis.—Inflorescence various. Flowers small, white, yellow or red.

1 R. polysta'chia (D. C. prod. 1. p. 490.) leaves oblong, acute, blunt and serrated at the base, pubescent above, but beset with silky hairs beneath, as well as on the branchlets; panicle terminal, leafless, of many stalked cymose or side-flowered racemes. ♂. S. Native of South America near Honda at the river Magdalena. Mougeòtia polystàchia, H. B. et Kunth, nov. gen. amer. 5. p. 328. t. 483. f. a and b. Flowers yellow.

Many-spiked Riedleia. Fl. July, Aug. Clt. 1827. Pl. 2 to 3 feet.

2 R. chamæ'drys; stems prostrate, hairy; leaves ovate or roundish-ovate, very blunt, dentately serrated, pilose, younger ones silky; racemes sub-corymbose, axillary; tube of stamens profoundly 5-cleft; capsule globose, composed of 5 bifid carpels. ♄. S. Native of Brazil. Melòchia chamæ'drys, St. Hil. fl. bras. 1. p. 161. Flowers yellow.

Germander-like Riedleia. Fl. Jan. Pl. prostrate.

3 R. mo'llis (D. C. prod. 1. p. 491.) leaves ovate, acute, rounded and somewhat cordate at the base, serrated, clothed with silky pubescence above, but hoary from soft tomentum beneath; umbels axillary, many-flowered, much longer than the petioles. ♄. S. Native of South America near Honda and Santanna in New Granada. Mougeòtia móllis, H. B. et Kunth, l. c. Petals white, but yellow towards the middle.

Soft Riedleia. Shrub 1 to 2 feet.

4 R. tiliæfo'lia (D. C. prod. 1. p. 491.) leaves cordate, toothed, younger ones clothed with velvety tomentum, adult ones smooth; corymbs terminal, many-flowered; fruit velvety. bluntly 5-sided. ♄. S. Native of the island of Timor. Habit almost of *R. odoràta* or *R. velutìna.*

Lime-tree-leaved Riedleia. Shrub 2 feet.

5 R. crena'ta (D. C. prod. 1. p. 491.) leaves roundish, crenated, tomentose, lined; umbels stalked, axillary, and terminal. ♄. S. Native of South America. Melòchia crenàta, Vahl. symb. 3. p. 86. t. 68. Flowers white or yellow.

Crenate-leaved Riedleia. Shrub.

6 R. odora'ta (D. C. prod. 1. p. 491.) leaves ovate, somewhat cordate, doubly serrated, acute, smooth; corymbs axillary, stalked. ♄. S. Native of the islands of Tanna and Tongataboo in the South Seas. Melòchia odoràta, Forst. prod. 253. Wisènia I'ndica, Gmel. syst. 505. Visènia I'ndica, Houtt. pfl. syst. 6. t. 46. f. 3. Flowers white or red.

Sweet-scented Riedleia. Shrub.

7 R. veluti'na (D. C. prod. 1. p. 491.) lower leaves cordate, upper ones ovate, acuminate, simply serrated, soft and velvety on both surfaces; corymbs axillary, stalked, few-flowered. ♄. S. Native of Bengal and Java. Very like *R. odoràta.* Flowers probably red or white.

Velvety Riedleia. Fl. June, July. Clt. 1823. Shrub 1 to 2 ft.

8 R. corymbòsa (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 491.) leaves cordate, orbicular, acuminated at the apex, villous; corymbs axillary, loose, stalked. ♄. S. Native of Mexico on mountains. Flowers purple, twice the size of those of *R. odoràta.*

Corymbose-flowered Riedleia. Shrub 3 feet.

9 R. trunca'ta (D. C. prod. 1. p. 491.) leaves wedge-shaped, toothed at the apex, smooth above, hoary from stellate tomentum beneath; flowers solitary; capsules depressed. ♄. S. Native of the East Indies. Melòchia truncàta, Willd. spec. 3. p. 601. Flowers white or flesh-coloured.

Truncated-leaved Riedleia. Fl. June, July. Clt. 1817. Shrub 2 feet.

10 R. depre'ssa (D. C. prod. 1. p. 491.) leaves ovate, serrated, velvety-tomentose; pedicels 1-3-flowered, opposite the leaves; capsules bluntly 5-sided, with ciliated angles. ♄. S. Native of the island of Cuba near Havannah, and of St. Martha. Melòchia depréssa, Lin. spec. 910. exclusive of the synonyme of Miller. Cav. diss. 6. p. 320. t. 173. f. 1. a. differs from ours in the stipulas being spreading, lanceolate, not erect subovate. Pedicels shorter, axillary, 1-flowered. Flowers flesh-coloured, but according to Cavanilles sulphur-coloured.

Depressed Riedleia. Fl. June, July. Clt. 1817. Shrub ½ ft.

11 R. Peruvia'na (D. C. prod. 1. p. 491.) leaves ovate, serrated, tomentose; flowers solitary, axillary; capsules globose, villous. ♄. S. Native of Peru. Melòchia Peruviàna, Desrous. in dict. encyl. 4. p. 83. Stem shrubby, dwarf. Flowers citron-coloured.

Peruvian Riedleia. Shrub 2 feet.

12 R. supi'na (D. C. prod. 1. p. 491.) leaves ovate, serrated; flowers capitate; stems procumbent. ⊙. S. Native of the East Indies. Melòchia supìna, Lin. spec. 944.—Pluk. alm. t. 132. f. 4. Flowers red.

Trailing Riedleia. Fl. June, July. Clt. 1823. Pl. trailing.

13 R. corchorifo'lia (D. C. prod. 1. p. 491.) leaves ovate, somewhat 3-lobed, serrated, smooth; flowers generally terminal, capitate, sessile. ⊙. S. Native of Ceylon and Java. Melòchia corchorifòlia, Lin. spec. 944. Cav. diss. 6. p. 321. t. 174. f. 2.—Dill. elth. t. 176. f. 217. Corolla pale-purple, with a yellow bottom.

Corchorus-leaved Riedleia. Fl. June, July. Clt. 1733. Pl. 1 ft.

14 R. radia'ta (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 655.) leaves ovate-lanceolate, acuminated, serrated, rather pubescent on the midrib on both surfaces; lower leaves ovate, sublobate; spikes umbellate, terminal. ⊙? S. Native of Java.

Rayed Riedleia. Pl. 1 to 2 feet.

15 R. infla'ta (D. C. prod. 1. p. 491.) leaves ovate, somewhat acuminated, obsoletely cordate, doubly-serrated, clothed on both surfaces with close-pressed hairs; peduncles axillary, trifid, many-flowered, one-half shorter than the petioles. ♃? S. Na-

tive of New Granada in humid shady places. Mougeòtia inflàta, H. B. et Kunth, nov. gen. amer. 5. p. 330. t. 484. Flowers white, but yellow towards the base.

Inflated Riedleia. Pl. 1 foot.

16 R. NODIFLO'RA (D. C. prod. 1. p. 491.) leaves ovate, acuminated, serrated, smooth, younger ones covered with close-pressed hairs; flowers axillary, conglomerate, sessile. ♄. S. Native of South America and the West India Islands in hedges. Melòchia nodiflòra, Swartz. fl. ind. occ. 2. p. 1139. Mougeòtia nodiflòra, H. B. et Kunth, nov. gen. amer. 5. p. 330. Melòchia carpinifòlia, Wendl. obs. 52. Flowers pale-red.

Knot-flowered Riedleia. Fl. June, July. Clt. 1800. Shrub 2 to 6 feet.

17 R. BORBO'NICA (D. C. prod. 1. p. 491.) leaves ovate-lanceolate, acuminate, serrated, somewhat villous; flowers axillary, conglomerate, sessile. ♄. S. Native of the island of Bourbon. Melòchia Borbónica, Cav. diss. 6. p. 321. t. 174. f. 1. Corolla yellow, hardly longer than the calyx. Fruit villous.

Bourbon Riedleia. Shrub 3 feet.

18 R. BERTERIA'NA (D. C. prod. 1. p. 492.) leaves ovate, somewhat cordate, serrated, smooth; heads of flowers globose, dense on stalks, which are the length of the petioles. ♄. S. Native of Guadaloupe. Melòchia Berteriàna, Balb. in litt.

Bertero's Riedleia. Shrub 2 feet.

19 R. ERIA'NTHA (D. C. prod. 1. p. 492.) leaves ovate, toothed, hairy, on very short petioles; flowers axillary, crowded, sessile; calyxes villous; carpels 5, distinct. ♄. S. Native of Cayenne. Flowers yellow?

Woolly-flowered Riedleia. Shrub 2 to 3 feet.

20 R. HIRSU'TA (D. C. prod. 1. p. 492.) leaves ovate, acute, villous; heads of flowers terminal, rather spike-formed, crowded, hairy; calyxes with 3 bracteas. ♄. S. Native of New Granada and the Caribbee islands. Melòchia hirsùta, Cav. diss. 6. p. 323. t. 175. f. 1. Mougeòtia hirsùta, H. B. et Kunth, nov. gen. amer. 5. p. 331. Flowers yellow.

Hairy Riedleia. Shrub 1½ foot.

21 R. VENO'SA (D. C. prod. 1. p. 492.) leaves ovate, serrated, veiny, tomentose beneath; peduncles distinct, terminal, many-flowered; stem hairy. ♄. S. Native of Jamaica in very arid places. Melòchia venòsa, Swartz. fl. ind. occ. 2. p. 1137. Flowers large, yellow.

Veiny-leaved Riedleia. Shrub 3 feet.

22 R. CONCATENA'TA (D. C. prod. 1. p. 492.) leaves ovate-lanceolate, toothed, smooth; racemes terminal, crowded. ♃. S. Native of the East Indies. Melòchia concatenàta, Lin. spec. 944. Cav. diss. 6. t. 175. f. 2.—Pluk. alm. t. 9. f. 5. Flowers yellow. Capsule globose, sessile.

Concatenated-flowered Riedleia. Fl. June, July. Clt. 1810. Shrub 3 feet.

23 R. JAMAICE'NSIS (D. C. prod. 1. p. 492.) leaves ovate-lanceolate, toothed, clothed with close-pressed villi, but smoothish above; racemes terminal, leafless, interrupted. ♄. S. Native of Jamaica. Melòchia Jamaicénsis, Balb. ined. Stamens joined into a cylinder. Fruit velvety. Flowers yellow?

Jamaica Riedleia. Shrub 2 feet.

24 R. CARACASA'NA (D. C. prod. 1. p. 492.) leaves cordate, crenate, tomentose beneath; flowers capitate, almost sessile, axillary, and opposite the leaves. ♄. S. Native of Caraccas. Mougeòtia Caracasàna, H. B. et Kunth, nov. gen. amer. 5. p. 329. Melòchia Caracasàna, Jacq. icon. rar. 3. t. 507. Flowers large, white.

Caraccas Riedleia. Fl. May, July. Clt. 1817. Shrub 2 feet.

25 R. SERRA'TA (Vent. choix. t. 37.) leaves ovate, cordate, acuminated, serrated, villous on both surfaces; petioles and branches hispid; stipulas lanceolate-linear, almost the length of the petioles; flowers axillary, glomerate, almost sessile. ♃. S. Native of Porto-Rico and St. Domingo. Flowers purple, 3 to 5 in a bundle, disposed in an interrupted spike.

Serrated-leaved Riedleia. Pl. 1 to 2 feet.

Cult. *Riedlèia* is a genus of plants not worth cultivating except in botanic gardens; they will thrive well in any light rich soil, and cuttings of the shrubby and herbaceous perennial kinds will root freely in sand under a hand-glass, in heat, but this will in most cases be unnecessary, as the greater part of the species ripen seed freely in this country; these require to be sown in pots in spring, and placed in a hot-bed, as well as those of the annual species, and when the plants are of a sufficient size they should be potted off into separate pots, and placed in the stove.

XVI. WALTHE'RIA (in honour of Augustus Frederick Walther, a German botanist, once professor of medicine in the university of Leipsic; he described the plants of his own garden in 1735. It is also understood to commemorate Thomas Walter, an English botanist, author of Flora Caroliniana in 1798, and Richard Walter, who went round the world with Admiral Anson in 1740 and 1744.) Lin. gen. no. 827. D. C. prod. 1. p. 492.

LIN. SYST. *Monadélphia, Pentándria.* Calyx 5-cleft, furnished with a lateral 1-3-leaved deciduous involucel. Petals 5. Style 1. Stigma pencilled or tubercled. Capsule 1-celled, 2-valved, 1-seeded, or truly of 5 carpels, 4 of which are abortive.—Shrubs with the habit of *Melòchia.* Flowers small, usually yellow, disposed in terminal or axillary, stalked heads, rarely in panicles, rising in clusters from the branches.

1 W. AMERICA'NA (Lin. spec. 941. exclusive of the synonymes of Smith and Breyn,) leaves ovate-oblong, plaited, acutely and unequally toothed, tomentose on both surfaces; heads of flowers axillary, stalked; calyx very villous; petals rather pubescent. ♂. S. Native of the Bahama Islands, Surinam, and Caribbee Islands. W. arboréscens, Cav. diss. 6. p. 316. t. 170. f. 1. W. I'ndica, Jacq. icon. rar. 1. t. 130. There is a variety of this plant which bears sessile heads of flowers, and perhaps not distinct from *W. I'ndica;* and there is also another variety with elongated peduncles, bearing as if it were many concatenated bundles of flowers. Flowers yellow.

American Waltheria. Fl. May, Oct. Clt. 1691. Shrub 4 ft.

2 W. I'NDICA (Lin. spec. 941.) leaves oval, plaited, downy, bluntly-toothed; heads of flowers axillary, sessile. ♄. S. Native of the East Indies. The heads of flowers being sessile, of a tawny-yellow colour, is sufficient to distinguish it from *W. Americàna.*

Indian Waltheria. Fl. July, Aug. Clt. 1759. Shrub 1 to 3 ft.

3 W. VISCOSI'SSIMA (St. Hil. fl. bras. 1. p. 150.) plant very clammy; stem suffruticose; leaves ovate-oblong, acuminated, cordate at the base, somewhat falcate, velvety-tomentose on both surfaces; panicle leafy; flowers glomerate; calyx hairy; tube of stamens nearly entire; stigma oblong, tuberculated. ♄. S. Native of Brazil in the northern parts of the provinces of Minas Geraes and Minas Novas. Flowers of an orange-yellow colour.

Very-clammy Waltheria. Fl. May, June. Shrub 1 to 2 feet.

4 W. FERRUGI'NEA (St. Hil. fl. bras. 1. p. 150.) stem arborescent, branched; leaves oblong, acute, velvety-tomentose above, but truly tomentose beneath; heads of flowers axillary, on short peduncles; petals shorter than the calyx; tube of stamens 5-cleft; stigma simple. ♄. S. Native of Brazil in the province of Minas Geraes, not far from Villa do Principe. Flowers yellow.

Rusty Waltheria. Fl. March. Shrub 5 to 6 feet.

5 W. ANGUSTIFO'LIA (H. B. et Kunth, nov. gen. amer. 5. p. 332.) leaves oblong, narrow, and acute at the top, rounded at the base, serrated, clothed with soft tomentum; spikes of flowers glomerate, stalked, much longer than the petioles. ♄. S. Native

of South America between Bordones and Cumana. Resembles *W. Americàna*. Perhaps *W. angustifòlia*, Lin. spec. 941. exclusive of the synonymes? Flowers yellow.

Narrow-leaved Waltheria. Shrub 1 to 2 feet.

6 W. corchorifo'lia (Pers. ench. 2. p. 216.) leaves oblong-elliptic, tomentose on both surfaces; heads of flowers axillary, compact, on long peduncles; calyx very villous; corolla smooth. ♄. S. Native of Rio Janeiro in Brazil. W. ellíptica, St. Hil. fl. bras. 1. p. 152. Flowers yellow.

Corchorus-leaved Waltheria. Shrub 2 feet?

7 W. gla'bra (Poir. dict. 7. p. 325.) leaves ovate-lanceolate, mucronately serrated, and are as well as the stem very smooth; heads of flowers ranged alternately on an axillary stalk; calyxes ciliated. ♄. S. Native of Guadaloupe. W. læ'vis, Schrank. pl. monac. t. 55. Link. enum. 2. p. 179. Petals yellow, linear.

Smooth Waltheria. Fl. July. Clt. 1823. Shrub 3 feet.

8 W. corda'ta (Smith in Rees' cyclop. vol. 37.) leaves smooth, cordate, broad-ovate, even, acutely and unequally toothed; heads of flowers solitary, axillary, on stiff peduncles. ♄. S. Native of the West Indies. Flowers yellow.

Heart-leaved Waltheria. Shrub 3 feet.

9 W. cinera'scens (St. Hil. fl. bras. 1. p. 152.) stem shrubby, naked; leaves somewhat imbricated, somewhat ovate-orbicular, very obtuse, cordate at the base, coarsely-serrated, tomentose on both surfaces, cinereous; heads of flowers terminal; calyx villous; tube of stamens 5-cleft. ♄. S. Native of Brazil in the province of Minas Novas. Flowers yellow.

Cinereous Waltheria. Shrub 4 feet.

10 W. mari'tima (St. Hil. fl. bras. 1. p. 153.) stem suffrutescent, branched; leaves rather imbricate, ovate, obtuse, deeply-serrated; pilose on both surfaces, and with fine glandular tubercles; heads of flowers terminal; calyx acuminated, pilose; tube of stamens nearly entire. ♄. S. Native of Brazil near Meiahype, not far from Benevente. Flowers yellow.

Sea-side Waltheria. Fl. Sept. Shrub 1½ foot.

11 W. lana'ta (St. Hil. fl. bras. 1. p. 154.) stem suffruticose, nearly simple; leaves ovate, acutish, plaited, lower and middle ones villous above, but villously-tomentose beneath, uppermost ones woolly, hoary-glaucous; heads of flowers terminal, rarely as if they were axillary, covered with woolly tomentum; tube of stamens entire. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers yellow.

Woolly Waltheria. Fl. Oct. Shrub 1 foot.

12 W. lopha'nthus (Forst. prod. no. 252.) leaves roundish, cordate, serrated, stalked, clothed with silky down; heads of flowers stalked, with imbricate bracteas. ♄. S. Native of the Marquis Islands in the South Seas. Lophánthus tomentòsus, Forst. car. gen. 14. Flowers probably yellow.

Crest-flowered Waltheria. Shrub 3 feet?

13 W. erioca'rpa (D. C. prod. 1. p. 493.) leaves oval, plaited, toothed, tomentose; stipulas bristly-ciliated, permanent; heads of flowers on short peduncles; branches, petioles, and peduncles clothed with down. ♄. S. Native of Brazil. Flowers yellow.

Hairy-fruited Waltheria. Shrub.

14 W. ova'ta (Cav. diss. 6. p. 317. t. 171. f. 2.) leaves roundish-ovate, unequally toothed, tomentose; heads of flowers sessile, leafy. ♄. S. Native of Peru. Flowers yellow. Stipulas linear, deciduous.

Ovate-leaved Waltheria. Shrub 4 feet.

15 W. elli'ptica (Cav. diss. 6. p. 316. t. 171. f. 2.) leaves oblong, obtuse, toothed, tomentose; heads of flowers axillary, compact, glomerate; calyx very villous; corolla smooth. ♄. S. Native of the East Indies. Flowers yellow. Stipulas lanceolate, deciduous.

Elliptical-leaved Waltheria. Fl. July. Clt. 1812. Shrub 3 ft.

16 W. Durandi'nha (St. Hil. fl. bras. 1. p. 153. pl. usu. bras. no. 34.) stem suffruticose, ascending; leaves ovate or ovate-orbicular, obtuse, cordate at the base, lower ones pilose, upper ones tomentose and glaucous; heads of flowers terminal, and few axillary; calyx pubescent; petals bearded above the claw; tube of stamens entire. ♄. S. Native of Brazil on the banks of the river Uruguay, where it is called *Durandinha*. The inhabitants use it with success in diseases of the chest, and in decoction as an antisiphilitic, at least to allay the inflammation commonly attending that disease. It is also used to cure wounds. Flowers yellow.

Durandinha Waltheria. Fl. Dec. Feb. Shrub 1½ foot.

17 W. gra'cilis (St. Hil. fl. bras. 1. p. 154.) stem simple, suffruticose at the base; leaves ovate, or ovate-elliptic, obtuse, plaited, lower ones pilose, upper ones tomentose and canescent; heads of flowers terminal, few, axillary; tube of stamens nearly entire. ♄. S. Native of Brazil. Flowers yellow.

Slender Waltheria. Fl. Oct. Shrub ½ to 1½ foot.

18 W. glabriu'scula (St. Hil. fl. bras. 1. p. 153.) stem suffruticose at the base, nearly simple; leaves elliptic or roundish, obtuse, smoothish; heads of flowers terminal and very few, axillary; calyx villous; tube of stamens 5-cleft. ♄. S. Native of Brazil. Flowers yellow.

Smoothish Waltheria. Fl. April. Shrub ½ foot.

19 W. commu'nis (St. Hil. fl. bras. 1. p. 155.) stem shrubby at the base, nearly simple, hairy; leaves ovate-oblong or rarely ovate, obtuse, somewhat cordate at the base; pilose on both surfaces, ciliated; heads of flowers hairy-tomentose, terminal; tube of stamens very short, 5-cleft. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers yellow.

Common Waltheria. Shrub ½ foot.

20 W. microphy'lla (Cav. diss. 6. p. 317. t. 170. f. 2.) leaves oblong, obtuse, plaited, serrulated, hoary, tomentose; heads of flowers sessile. ♄. S. Native of the East Indies.—Pluk. alm. t. 150. f. 5. The whole plant is covered with fine tomentum. Leaves small. Flowers yellow.

Small-leaved Waltheria. Fl. June, Jul. Clt. 1824. Sh. 4 ft.

21 W. longifòlia (D. C. prod. 1. p. 493.) leaves oblong, acutish, toothed, pubescent beneath; heads of flowers sessile, and disposed on the branches as if they were in interrupted spikes. ♄. S. Native of the Caribbee Islands. Flowers yellow.

Long-leaved Waltheria. Shrub 4 feet.

22 W. a'stropus (Spreng. syst. 3. p. 31.) leaves ovate, nearly sessile, deeply toothed, obtuse, rough from stellate down; heads of flowers corymbose, terminal. ♄. S. Native of Brazil. A'stropus tomentòsus, Spreng. Neu. endt.

Starry Waltheria. Shrub 2 to 4 feet.

Cult. This is a genus of unimportant shrubs, not worth cultivating except in general collections. The species will thrive well in a rich loamy soil, or a mixture of loam and peat, and cuttings will root readily in sand, under a hand-glass, in heat.

XVII. ALTHE'RIA (a name abridged from *Walthèria*). Pet. Th. nov. gen. mad. no. 64. D. C. prod. 1. p. 493.

Lin. syst. *Monadélphia, Pentándria.* Calyx 5-cleft, girded by a 3-leaved involucel. Petals 5. Stamens 5, joined into a tube; anthers bursting on the outside. Ovary 5-sided. Styles 5, joined. Carpels 5, joined, 1-seeded. Seeds fixed to the central placenta.

1 A. Madagascarie'nsis (D. C. prod. 1. p. 493.). ♄. S. Native of Madagascar. Visènia Madagascariénsis, Spreng. An erect, hairy herb, with cordate serrated leaves, and small, axillary, yellow flowers, which are disposed in bundles.

Madagascar Altheria. Shrub 2 feet.

Cult. This plant will thrive well in a mixture of loam, peat,

and sand, and cuttings will strike root freely in sand under a hand-glass, in heat, or it may be raised from seeds, which is perhaps the best mode.

XVIII. HERMA'NNIA (in honour of Paul Hermann, who travelled in Ceylon, afterwards professor of botany at Leyden, author of some botanical works; died in 1695). Lin. gen. no. 628. D. C. prod. 1. p. 493.

Lin. syst. *Monadélphia, Pentándria.* Calyx almost naked, campanulate, 5-cleft. Petals 5. Stamens 5. Filaments lanceolate, usually winged, monadelphous at the very base. Styles 5, joined into 1. Capsules 5-celled, 5-valved; cells many-seeded. Shrubs with usually drooping yellow flowers and generally clothed with starry tomentum. Leaves entire or toothed. Peduncles axillary, few-flowered. All natives of the Cape of Good Hope.

Sect. I. Trione'lla (a name altered from *Triònum*, the bladder ketmy; in allusion to the bladdery calyx). D. C. prod. 1. p. 493. Calyx inflated, but particularly so after flowering. Filaments of stamens much dilated.

1 H. multi'fida (D. C. prod. 1. p. 493.) leaves hoary, palmate-parted, with pinnate-parted lobes and somewhat complicated, linear, entire lobules; pedicels 1-flowered, shorter than the leaves; calyx inflated, puberulous. ♄. G. H. bipinnàta, var. Burch. cat. no. 1627. trav. 1. p. 310. Flowers yellow?

Multifid-leaved Hermannia. Shrub 3 feet.

2 H. Halica'caba (D. C. prod. 1. p. 493.) leaves whitened beneath and dotted above, lower ones palmately 5-parted, upper ones 3-parted with pinnatifid lobes, middle lobe longest; peduncles 2-4-flowered, shorter than the leaves; calyxes inflated, puberulous. ♄. G. H. bipinnàta, var. Burch. cat. no. 2020. Perhaps only a variety of *H. multífida*. Flowers yellow.

Winter-cherry-calyxed Hermannia. Shrub 1 to 3 feet.

3 H. comòsa (Burch. cat. no. 1683.) leaves tomentose, ovate, sinuately-toothed; stipulas lanceolate-linear; peduncles 2-flowered; calyx inflated, furnished with hairy, tufted appendages. ♄. G. Flowers yellow?

Tufted-appendaged Hermannia. Shrub 2 feet.

4 H. althæifòlia (Lin. spec. 941.) leaves tomentose, obovate, plaited, crenate; stipulas ovate-lanceolate, 3-5-nerved; peduncles solitary or twin, 2-3-flowered, longer than the leaves. ♄. G. Curt. bot. mag. t. 307. Cav. diss. 6. t. 179. f. 2. H. aúrea, Jacq. schœnbr. t. 214. Flowers dark-yellow or sulphur-coloured.

Hollyhock-leaved Hermannia. Fl. Mar. July. Clt. 1728. Shrub 3 feet.

5 H. plica'ta (Willd. spec. 3. p. 589.) leaves tomentosely-hairy, ovate, somewhat cordate, wrinkled, toothletted; stipulas ovate, acute; peduncles 2-3-flowered; calyx cylindrical when in flower, but at length becoming inflated. ♄. G. H. althæifòlia, Jacq. schœnbr. t. 213. exclusive of the synonyme. Flowers deep-yellow. Stipulas 3-nerved.

Plaited-leaved Hermannia. Fl. Nov. Dec. Clt. 1774. Shrub 3 to 4 feet.

6 H. ca'ndicans (Ait. hort. kew. 2. p. 412.) leaves clothed with white tomentum, roundish-ovate, crenated; stipulas lanceolate-awl-shaped; peduncles 2-3-flowered; calyx campanulate, spreading. ♄. G. Jacq. schœnbr. 1. t. 117. H. præmórsa, Wendl. obs. 51. Flowers yellow.

Whitish-leaved Hermannia. Fl. April, June. Clt. 1774. Shrub 3 to 4 feet.

7 H. mo'llis (Willd. enum. p. 692.) leaves covered with white tomentum, oblong, obtuse, toothed, wedge-shaped, and quite entire at the base; peduncles 2-flowered; calyx campanulate, velvety. ♄. G. Scarcely distinct from *H. cándicans*. Flowers yellow.

Soft-leaved Hermannia. Fl. May, Ju. Clt. 1814. Sh. 3 ft.

8 H. decu'mbens (Willd. enum. suppl.) leaves pubescently tomentose, oblong, unequally toothed, rounded at both ends; stipulas ovate, somewhat toothed; peduncles 3-4-flowered, drooping; calyx inflated, globose, very villous. ♄. G. Spreng. neu. entd. 1. p. 299. Flowers yellow.

Decumbent Hermannia. Fl. May, June. Clt. 1821. Shrub decumbent.

9 H. hyssopifòlia (Lin. spec. 942.) leaves pubescent, wedge-shaped, lanceolate, obtuse, toothed at the apex; flowers terminal, aggregate, racemose; calyx inflated, hairy. ♄. G. Cav. diss. 6. t. 181. f. 3. Flowers straw-coloured.

Hyssop-leaved Hermannia. Fl. April, July. Clt. 1725. Shrub 3 to 6 feet.

10 H. trifolia'ta (Lin. spec. 942.) leaves sessile, cuneated, obcordate, somewhat crenated at the apex, clothed with white tomentum; stipulas oblong, obtuse, resembling lateral leaflets; flowers aggregate, pendulous; calyx inflated, hairy. ♄. G. Cav. diss. 6. t. 182. f. 2. Stem very humble, and as if it were creeping. Flowers yellow.

Trifoliate Hermannia. Fl. May, Aug. Clt. 1752. Shrub trailing.

11 H. triphy'lla (Cav. diss. 6. t. 178. f. 3. but not of Lin.) leaves somewhat scabrous, 3-parted, with wedge-shaped partitions, which are truncated, and toothed at the apex, middle one stalked; stipulas lanceolate-awl-shaped. ♄. G. H. triphýlla, Lin. is a species of *Connàrus*. Flowers pale-yellow.

Three-leaved Hermannia. Fl. May, July. Clt. 1819. Shrub 4 to 6 feet.

12 H. glandulòsa (Link. enum. 2. p. 179.) leaves oval, unequally crenate, somewhat pubescent; stipulas ovate, acute, usually cut; stem covered with glandular pubescence. ♄. G. Flowers yellow. Perhaps this species does not belong to this section.

Glandular-stemmed Hermannia. Fl. May, July. Clt. 1822. Shrub 2 to 3 feet.

13 H. fra'grans (Link. enum. 2. p. 179.) leaves stalked, oval, obtuse, waved, crenate, and are as well as the stem clothed with hairy-tomentum. ♄. G. Native of the Cape of Good Hope. Flowers yellow.

Fragrant Hermannia. Clt. 1822. Shrub 2 to 3 feet.

Sect. II. Hermanne'lla (a diminutive of *Hermánnia*). D. C. prod. 1. p. 494. Calyx not or scarcely inflated. Filaments of stamens gradually dilated.

14 H. disermæfòlia (Jacq. schœnbr. t. 121.) leaves clothed with white tomentum, lanceolate, serrated, bluntish, with waved margins; stipulas awl-shaped; peduncles 1-flowered, short. ♄. G. This species is confused by Persoon with *H. trifurcàta*. Flowers orange-coloured, mixed with red.

Two-awned-leaved Hermannia. Fl. Mar. April. Clt. 1795. Shrub 2 to 5 feet.

15 H. di'sticha (Schrad. and Wendl. sert. han. t. 10.) leaves hispidly-villous, roundish-ovate, obtuse, toothed; stipulas somewhat ovate, acuminate; pedicels 1-flowered, shorter than the leaves; calyx angular. ♄. G. H. rotundifòlia, Jacq. schœnbr. t. 118. Flowers deep-yellow. Pedicels very short.

Distich-branched Hermannia. Fl. May, Aug. Clt. 1789. Shrub 3 to 6 feet.

16 H. melochioìdes (Burch. cat. no. 2957.) leaves smooth, ovate, unequally toothed; stipulas ovate-acuminated; pedicels 1-flowered, shorter than the leaves; filaments filiform-linear. ♄. G. Flowers yellow.

Melochia-like Hermannia. Fl. May, Jul. Clt. 1818. Shrub 1 to 2 feet.

17 H. bryonifòlia (Burch. cat. no. 2141.) leaves scabrous,

with stellate tomentum, cordate, ovate, unequally toothed; stipulas linear-lanceolate; pedicels 1-flowered, drooping. ♄. G. Leaves resembling those of *Málva bryonifòlia*. Flowers yellow.

Bryony-leaved Hermannia. Fl. May, July. Clt. 1818. Shrub 1 to 3 feet.

18 H. SALVIFÒLIA (Lin. suppl. 302.) leaves tomentosely hispid, wrinkled, oblong, bluntish, quite entire, almost sessile; stipulas long, lanceolate-awl-shaped; pedfcels 2-3-flowered; flowers naked. ♄. G. Cav. diss. 6. t. 180. f. 2. Flowers yellow.

Sage-leaved Hermannia. Fl. Apr. Jul. Clt. 1795. Sh. 3 to 6 ft.

19 H. MI'CANS (Schrad. and Wendl. sert. han. t. 5.) leaves clothed with hispid down, wrinkled, oblong, very blunt, somewhat toothed at the apex, on short petioles; stipulas lanceolate-awl-shaped; flowers aggregate, involucrated. ♄. G. H. latifòlia, Jacq. schœnbr. t. 119. Leaves yellowish from stellate down. Flowers dark-yellow.

Glittering-leaved Hermannia. Fl. May, Aug. Clt. 1790. Shrub 3 to 6 feet.

20 H. INVOLUCRA'TA (Cav. diss. 6. p. 328. t. 177. f. 1.) leaves clothed with hispid tomentum, oblong, acutish, quite entire, almost sessile; stipulas lanceolate-awl-shaped; flowers solitary, involucrated with lanceolate bracteas. ♄. G. Resembles the two preceding. Flowers pale-yellow.

Involucrated-flowered Hermannia. Fl. May, June. Clt. 1794. Shrub 2 feet.

21 H. SCORDIFÒLIA (Jacq. schœnbr. 1. t. 120.) leaves oblong, obtuse, crenated, stalked, tomentose beneath; stipulas awl-shaped; pedicels 1-2-3-flowered, rather longer than the leaves; calyx spreading. ♄. G. Leaves green and roughish above, clothed with white short tomentum beneath. Flowers yellow.

Germander-leaved Hermannia. Fl. April, Nov. Clt. 1794. Shrub 3 to 5 feet.

22 H. DENUDA'TA (Lin. fil. suppl. 301.) leaves smooth, lanceolate, serrated, glaucous; stipulas ovate, acuminated; pedicels usually twin, 2 or 4-flowered. ♄. G. Cav. diss. 6. t. 181. f. 1. Jacq. schœnbr. t. 122. Flowers deep-yellow.

Naked Hermannia. Fl. May, July. Clt. 1774. Shrub 3 to 4 feet.

23 H. ALNIFÒLIA (Lin. spec. 942.) leaves smooth, obovate-wedge-shaped, very obtuse, crenate, emarginate, plaited; stipulas ovate, awl-shaped at the apex; peduncles usually 2-3-flowered, disposed in racemes at the tops of the branches. ♄. G. Curt. bot. mag. t. 299. Cav. diss. 6. p. 329. t. 179. f. 1. Jacq. schœnbr. t. 291. Flowers pale-yellow, small.

Alder-leaved Hermannia. Fl. Feb. May. Clt. 1728. Shrub 2 to 6 feet.

24 H. CUNEIFÒLIA (Jacq. schœnbr. 1. t. 124.) leaves pubescent, obovate-wedge-shaped, truncated, emarginate, toothed; stipulas ovate, acute; racemes terminal; pedicels 1-flowered. ♄. G. Leaves much smaller than those of the preceding species, but the flowers are larger, of a pale-yellow colour.

Wedge-leaved Hermannia. Fl. Aug. Sep. Clt. 1791. Shrub 3 to 5 feet.

25 H. HOLOSERI'CEA (Jacq. schœnbr. t. 292.) leaves clothed with soft white tomentum, oblong, wedge-shaped, rounded and toothed at the top; stipulas lanceolate; racemes terminal, panicled. ♄. G. Flowers small, yellow.

Holosericeous Hermannia. Fl. May, June. Clt. 1792. Shrub 3 to 4 feet.

26 H. HIRSU'TA (Schrad. and Wendl. sert. han. t. 4.) leaves white from tomentum beneath, oblong-obovate, wedge-shaped, unequally toothed at the apex; stipulas semi-cordate, acuminated; racemes lateral; pedicels elongated, 2-flowered. ♄. G. Branches hairy, divaricating. Leaves green on the upper surface. Flowers deep yellow.

Hairy Hermannia. Fl. May, Ju. Clt. 1790. Sh. 3 to 5 ft.

27 H. HISPI'DULA (Rchb. ex Spreng. syst. 3. p. 27.) leaves oblong, tapering to both ends, denticulated, rather hispid; stipulas ovate-lanceolate; flowers loosely panicled. ♄. G. Flowers yellow.

Hispid Hermannia. Fl. Mar. Apr. Clt.? Shrub 2 to 4 ft.

28 H. SCA'BRA (Cav. diss. 6. t. 182. f. 2.) leaves scabrous above, but tomentose beneath, wedge-shaped, oblong, unequally toothed at the apex, quite entire at the base; stipulas semi-cordate, acuminated; pedicels 2-3-flowered. ♄. G. Jacq. schœnbr. t. 127. exclusive of the synonymes. H. áspera, Wendl. obs. 52. H. hírta, Sparm. Flowers pale-yellow.

Scabrous-leaved Hermannia. Fl. Mar. April. Clt. 1789. Shrub 2 to 4 feet.

29 H. MULTIFLÒRA (Jacq. schœnbr. t. 128.) leaves smoothish, wedge-shaped, oblong, truncated, toothed at the apex; stipulas oblong, acute; racemes few-flowered; calyx campanulate. ♄. G. Flowers pale-yellow. Pedicels 1-2-flowered.

Many-flowered Hermannia. Fl. March, May. Clt. 1791. Shrub 3 to 5 feet.

30 H. FLA'MMEA (Jacq. schœnbr. t. 129.) leaves smooth, wedge-shaped, lanceolate, truncated, and toothed at the apex; racemes terminal; peduncles 1-2-flowered; calyx somewhat reflexed. ♄. G. Flowers orange-coloured or red.

Flame-flowered Hermannia. Fl. year. Clt. 1794. Sh. 1 to 3 ft.

31 H. ANGULA'RIS (Jacq. schœnbr. t. 126.) leaves smooth above, but hoary beneath, wedge-shaped, lanceolate, truncated and toothed at the apex; peduncles 2-flowered; calyx with 5, winged angles. ♄. G. Stem scabrous from fascicled tomentum. Flowers yellow, in short terminal racemes. Perhaps this species would have been better placed in the first section.

Angular-calyxed Hermannia. Fl. April, May. Clt. 1791. Shrub 2 to 4 feet.

32 H. TRIFU'RCA (Lin. spec. 942.) leaves rather velvety, wedge-shaped, lanceolate, blunt, entire or 3-toothed at the apex; racemes many-flowered; pedicels 1-flowered, leaning to one side; calyx campanulate. ♄. G. Cav. diss. 6. t. 178. f. 2. Jacq. schœnbr. t. 125. Flowers pale red.

Three-forked-leaved Hermannia. Fl. April, July. Clt. 1789. Shrub 1 to 4 feet.

33 H. ODORA'TA (Ait. hort. kew. 2. p. 412.) leaves velvety, wedge-shaped, lanceolate, obtuse, lower ones 3-5-toothed at the apex, upper ones entire; stipulas linear-awl-shaped; calyx campanulate, spreading. ♄. G. Flowers yellow.

Sweet-scented Hermannia. Fl. Feb. Oct. Clt. 1780. Shrub 2 to 4 feet.

34 H. LAVANDULÆFÒLIA (Lin. spec. 942.) leaves clothed with velvety tomentum, lanceolate, obtuse, quite entire; stipulas linear-awl-shaped; peduncles 1-2-flowered; calyx angular, campanulate. ♄. G. Cav. diss. 6. t. 180. f. 1. Jacq. schœnbr. t. 215.—Dill. elth. t. 147. f. 176. Flowers yellow.

Lavender-leaved Hermannia. Fl. May, July. Clt. 1732. Shrub 2 to 6 feet.

35 H. VELUTÌNA (Burch. cat. no. 3393.) leaves clothed with velvety tomentum, oblong-lanceolate, quite entire, mucronate at the apex; stipulas linear, acute, twice as long as the petioles; racemes few-flowered. ♄. G. Flowers yellow. Resembles *H. lavandulæfòlia*.

Velvety-leaved Hermannia. Fl. May, Jul. Clt. 1818. Sh. 3 ft.

36 H. LINIFÒLIA (Lin. mant. 256.) leaves linear; peduncles 1-flowered. ♄. G. Flowers yellow?

Flax-leaved Hermannia. Shrub 2 feet.

37 H. FILIFÒLIA (Lin. fil. suppl. 302.) leaves smooth, with scabrous edges, linear, 3-sided, quite entire; stipulas long, linear; flowers axillary, and terminal, twin, and tern. ♄. G. Cav. diss. 6. p. 332. t. 180. f. 3. Jacq. schœnbr. t. 123. Flowers of a reddish-sulphur colour.

Thread-leaved Hermannia. Fl. May, Aug. Clt. 1816. Shrub 1 to 3 feet.

38 H. PROCU'MBENS (Cav. diss. 6. t. 177. f. 2.) leaves smoothish, oblong, pinnatifidly-toothed, lower ones ovate, upper ones elongated; stipulas cordate, acute; stem procumbent; racemes few-flowered. ♄. G. Flowers pale-yellow.

Procumbent Hermannia. Fl. May, June. Clt. 1792. Shrub procumbent.

39 H. TENUIFÒLIA (Sims, bot. mag. t. 1348.) leaves pinnatifid, with linear, entire, acute lobes. ♄. G. Flowers nodding, yellow, on very short pedicels. Leaves smooth in the specimen but scabrous in the figure.

Thin-leaved Hermannia. Fl. Ju. Jul. Clt.? Shrub 2 feet.

40 H. INCI'SA (Willd. spec. 3. p. 599.) leaves pinnatifid, with linear-lanceolate, quite entire segments; petals unguiculate, deeply-toothed. ♄. G. Flowers yellow? with wedge-shaped filaments. Habit of *Mahérnia*.

Cut-petalled Hermannia. Fl. June, July. Clt. 1806. Shrub 2 to 3 feet.

41 H. GRANDIFLÒRA (Ait. hort. kew. ed. 2. vol. 4. p. 141.) leaves lanceolate, smooth, upper ones quite entire, lower ones serrated at the apex. ♄. G. Flowers large, red?

Great-flowered Hermannia. Fl. year. Clt. 1791. Shrub 1 ft.

42 H. PULVERULE'NTA (Andr. bot. rep. t. 164.) leaves roughish and whitish, bipinnatifid; peduncles 2-flowered, very long. ♄. G. Flowers of a dirty-yellow colour. Resembles *Mahérnia* but has lanceolate filaments.

Powdered-leaved Hermannia. Fl. May, Aug. Clt. 1820. Shrub 2 to 4 feet.

43 H. ARGE'NTEA (Smith, in Rees' cycl. vol. 17.) leaves beset with starry scales, doubly pinnatifid, with decurrent lobes; peduncles racemose, 1-flowered. ♄. G. Leaves almost like those of *Lavándula multífida*, but smaller and scaly. Flowers orange-coloured, mixed with yellow. Calyx short, campanulate.

Silvery Hermannia. Fl. May, July. Clt. 1820. Sh. 2 to 4 ft.

44 H. CORONOPIFÒLIA (Link. enum. 2. p. 180.) leaves linear, pinnatifid, fleshy, smoothish; stem pubescent. ♄. G.

Buckhorn-leaved Hermannia. Fl. June, July. Clt. 1823. Shrub 2 feet.

Cult. The species of *Hermánnia* grow freely in any light rich soil, or a mixture of loam and peat; and young cuttings will root readily in the same kind of soil, under a hand-glass. They are all free flowerers and worth cultivating.

XIX. MAHE'RNIA (an anagram of *Hermánnia*). Lin. mant. 59. D. C. prod. 1. p. 496.

LIN. SYST. *Monadélphia, Pentándria.* Calyx naked, campanulate, 5-cleft. Petals 5, with an obcordate limb, spirally twisted, and straightish claws (f. 91. *b.*). Filaments 5 (f. 91. *f.*), monadelphous at the base (f. 91. *c.*), dilated into a cordate tubercle, or a cup-formed process in the middle (f. 91. *g.*). Styles 5, sometimes joined into 1 (f. 91. *d.*). Capsules 5-celled, 5-valved (f. 91. *f.*), many-seeded. Small shrub with the habit of *Hermánnia*, with toothed or pinnatifid leaves, and drooping, red, or yellow flowers. All natives of the Cape of Good Hope.

1 M. VERTICILLA'TA (Lin. mant. 59.) leaves disposed in whorls, entire, or trifid, linear, ciliated; stem decumbent; peduncles 1-2-flowered, involucrated. ♄. G. Cav. diss. 6. t. 176. f. 1. Hermánnia ciliàris, Lin. fil. suppl. 302.—Pluk. mant. t. 344. f. 3. Flowers yellow, with red veins. There are 2 varieties of this plant, one with almost smooth leaves, the other with ciliated leaves. The leaves are opposite, pinnatifid, or trifid, and the stipulas are large and trifid, giving the appearance of whorled leaves.

Whorled-leaved Mahernia. Fl. Ju. Aug. Clt. 1820. Sh. 2 ft.

2 M. RESEDÆFÒLIA (Burch. cat. no. 2280.) leaves smooth, pinnate-parted, with linear, entire lobes; stipulas cut, trifid. ♄. G. Resembles *M. verticillàta*. Flowers yellow, streaked with red. Peduncles elongated, 2-flowered.

Mignonette-leaved Mahernia. Fl. June, Aug. Clt. 1816. Shrub 1 to 2 feet.

3 M. BIPINNA'TA (Lin. syst. 253.) leaves smooth, twice pinnate-parted into linear lobes; peduncles axillary, elongated, 2-flowered. ♄. G. Cav. diss. 6. t. 176. f. 2. M. pinnàta, Curt. bot. mag. t. 277. Hermánnia pinnàta, Lin. 943. exclusive of the synonymes. Flowers drooping, red.

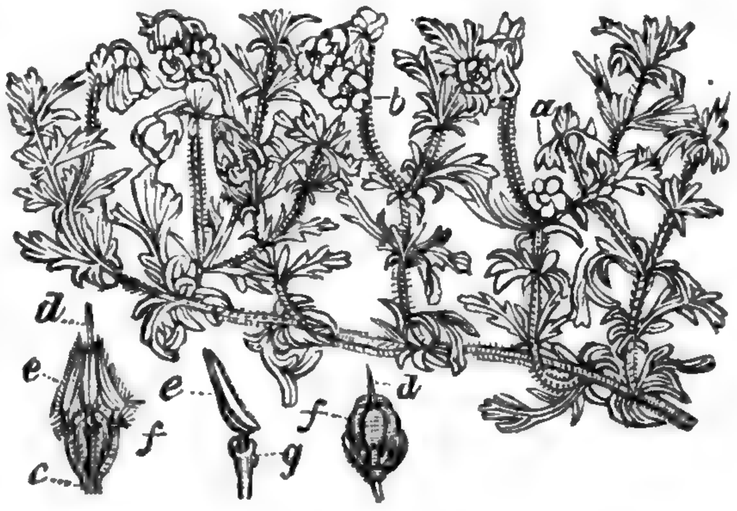
Bipinnate-leaved Mahernia. Fl. June, Oct. Clt. 1752. Shrub 1 foot.

4 M. INCÌSA (Jacq. schœnbr. 1. t. 54.) leaves pinnate-lobed, covered with glandular, stellate, and simple down; peduncles usually 2-flowered. ♄. G. Curt. bot. mag. t. 353. Flowers in the bud of a deep-crimson, as they open they incline to a deep-orange, and finally become yellowish.

Cut-leaved Mahernia. Fl. Jul. Aug. Clt. 1792. Sh. 2 to 4 ft.

5 M. DIFFU'SA (Jacq. schœnbr. 2. t. 201.) leaves smooth, pinnatifid; peduncles 2-flowered, and are erect as well as branches; stem scabrous, procumbent, diffuse. ♄. G. Lodd. bot. cab. t. 187. Hermánnia diffùsa, Lin. fil. suppl. 302. Flowers drooping, yellow.

FIG. 91.



Diffuse Mahernia. Fl. June, Aug. Clt. 1774. Shrub 1 to 2 feet.

6 M. HETEROPHY'LLA (Cav. diss. 6. p. 324. t. 178. f. 1.) leaves opposite, and in whorls, scabrous from scattered stellated tomentum, linear-wedge-shaped, coarsely-toothed; stipulas linear, entire; peduncles velvety, somewhat terminal, 2-4-flowered. ♄. G. Hermánnia grossulariæfòlia, Lin. spec. 943. Flowers bright-yellow.

Various-leaved Hermannia. Fl. April, July. Clt. 1731. Shrub 1 to 2 feet.

7 M. ERODIOI'DES (Burch. cat. no. 1491.) leaves smooth, ovate, obtuse, deeply toothed, with unequal, obtuse lobules; stipulas ovate; peduncles 2-flowered, twice as long as the leaves. ♄. G. Flower probably yellow.

Erodium-like Mahernia. Shrub 1 foot?

8 M. SESSILIFO'LIA (D. C. prod. 1. p. 496.) leaves pinnate-parted, with linear, entire, acute lobes; lower leaves, as well as stems, beset with bristly hairs; branches twiggy, smooth at the top; peduncles 1-2-flowered. ♄. G. Flowers yellow?

Sessile-leaved Mahernia. Fl. June, July. Clt. 1818. Shrub 1 to 2 feet.

9 M. RU'TILA (Jacq. ex Spreng. syst. 3. p. 28.) leaves subpinnatifid, oblong, cut, scabrous; stem procumbent, hairy? ♄. G.

Ruddy Mahernia. Fl. June, July. Shrub 1 foot.

10 M. PULCHE'LLA (Cav. diss. 6. p. 325. t. 177. f. 3.) leaves smooth, pinnatifid, with entire or cut, blunt lobes; stipulas ovate, ending in a bristle; peduncles 2-flowered, drooping, shorter than the leaves; stem erect, rather scabrous. ♄. G. Hermánnia pulchélla, Lin. fil. suppl. 302. Flowers small, reddish.

Neat Mahernia. Fl. June, Aug. Clt. 1792. Shrub ½ to 1 ft.

11 M. FRA'GRANS (Rchb. ex Spreng. syst. 3. p. 29.) leaves linear-lanceolate, acutely and deeply pinnatifid, hispid from stellate hairs beneath; stipulas 3-parted; bracteas connate; pedicels hispid. ♄. G. Flowers red?

Fragrant Mahernia. Fl. April, July. Shrub 1 foot.

12 M. VERNICA'TA (Burch. cat. no. 1461. trav. 1. p. 278.)

the whole plant is very smooth; leaves pinnatifid, with entire, blunt lobes; stipulas ovate; peduncles usually 2-flowered, shorter than the leaves; stem erect. ♄. G. Flowers nodding, of a vermilion colour.

Varnished Mahernia. Fl. June, Aug. Clt. 1816. Shrub 1 to 2 feet.

13 M. glabra'ta (Cav. diss. 6. p. 326. t. 200. f. 1.) leaves roughish from dots and stellated down, lanceolate, distantly, pinnatifidly toothed; stipulas ovate, mucronate; peduncles very long, 2-flowered. ♄. G. Jacq. schœnbr. 1. t. 53. Hermánnia glabràta, Lin. fil. suppl. 301. Mahérnia odoràta, Andr. bot. rep. t. 85. Flowers drooping, yellow, with a scent like the *Jonquil*; they are rather large.

Smooth Mahernia. Fl. April, June. Clt. 1789. Shrub 1 to 2 feet.

14 M. oxalidiflo'ra (Burch. cat. no. 1536. trav. 1. p. 295.) leaves smooth, pinnatifid, with entire, acutish lobes; stipulas ovate, acute; branches erect, rather scabrous; peduncles 1-2-flowered, longer than the leaves. ♄. G. Resembles *M. vernicàta*, but with the leaves more deeply cut, and with flowers twice the size. Flowers red or yellow.

Oxalis-flowered Mahernia. Fl. April, July. Clt. 1817. Shrub 1 to 2 feet.

15 M. grandiflo'ra (Burch. trav. 1. p. 295. and bot. reg. 3. t. 224.) leaves lanceolate-cuneated, obtuse, serrate-toothed, white beneath; peduncles usually 2-flowered, divaricating, and are as well as the calyxes clammy. ♄. G. Paters. trav. p. 60 with a figure. Flowers campanulate, the largest of all the genus, drooping, red. M. Burchéllii, Sweet.

Great-flowered Mahernia. Fl. May, July. Clt. 1812. Shrub 1 to 2 feet.

16 M. biserra'ta (Cav. diss. 6. p. 326. t. 200. f. 2.) leaves smooth, ovate-lanceolate, unequally toothed; stipulas lanceolate, mucronate; peduncles 3-flowered, length of leaves. ♄. G. Hermánnia biserràta, Lin. fil. suppl. 302. Flowers yellow. Habit of *Hermánnia*.

Twice-serrate-leaved Mahernia. Shrub 1 to 2 feet.

17 M. vesica'ria (D. C. prod. 1. p. 497.) leaves clothed with stellate hairs beneath, lanceolate, pinnatifid, with 2-3-toothed lobes; stipulas setaceous; stem hairy; flowers terminal, racemose; peduncles 1-flowered; fruit inflated, 5-angled. ♄. G. Native of? Hermánnia vesicària, Cav. diss. 6. p. 331. t. 181. f. 2. M. odoràta, var. β? incìsa, Pers. ench. 2. p. 218. Flowers yellow. Filaments obcordate, hairy.

Bladdery-capsuled Mahernia. Fl. May, July. Clt. 1818. Shrub 1 to 2 feet.

18 M. linnæoi'des (Burch. cat. no. 1878.) leaves ovate-roundish, crenated, clothed with dots of stellate down; stipulas acute; pedicels 1-2-flowered, much longer than the leaves. ♃. G. Flowers red? A very distinct species, with the habit of *Linnæ'a boreàlis*.

Linnæa-like Mahernia. Pl. ½ foot.

19 M.? viola'cea (Burch. cat. no. 3098.) leaves ovate, obtuse, toothed, smooth; peduncles 1-3-flowered, longer than the leaves, and opposite them. ♃? G. Flowers of a violet-colour. Plant with the habit of *Melòchia pyramidàta*.

Violaceous-flowered Mahernia. Pl. 1 foot.

20 M. spino'sa (Burch. trav. 1. p. 279.) leaves minute, wedge-shaped, usually 3-toothed at the apex, and are smooth as well as the erect, branched stem. ♄. G.

Spinose Mahernia. Shrub 1 to 2 feet.

Cult. *Mahérnia* is a genus of pretty little shrubs. An equal mixture of loam and peat suits them best, and young cuttings taken off at a joint, and planted in the same kind of soil, under a hand-glass, will root readily.

Tribe IV.

DOMBEYA'CEÆ (plants agreeing with *Dombèya* in important characters.) Kunth, malv. p. 12. D. C. prod. 1. p. 497.

Calyx 5-lobed (f. 92. *a*.). Petals 5, flat, large, rather unequal-sided (f. 92. *b*.), convolute when in the bud. Stamens multiple the number of petals, in one row, monadelphous (f. 92. *d. c*.), rarely all fertile, but generally intermixed with sterile thread-like filaments, or strap-formed ones (f. 92. *d*.); with 2 or 3 fertile ones between each sterile one (f. 92. *c*.). Styles 3-5, joined (f. 92. *f*.) or free. Ovulæ 2 in each cell, or if more they are disposed in 2 rows. Embryo straight, located in the axis of a fleshy albumen. Cotyledons leafy, usually bifid, twisted, or flat. This tribe contains shrubs and trees usually with large elegant flowers.

XX. RUI'ZIA (in honour of Don Hippolito Ruiz, a traveller in Peru and Chili, author of Flora Peruviana et Chilensis, in 5 vols. 4to. in conjunction with Pavon, see *Pavònia*.) Cav. diss. p. 3. 117. D. C. prod. 1. p. 497.

Lin. syst. *Monadélphia, Polyándria*. Calyx permanent, 5-parted, surrounded by a 3-leaved, deciduous involucel. Petals 5. Stamens 30-40, joined into an urceolus, all bearing anthers. Styles 10. Carpels 10, woody-membranous, 2-seeded, cohering closely together. Seeds rather triquetrous, not winged.—Shrubs, natives of the Mauritius. Leaves lobed or entire, clothed with mealy down beneath. Peduncles axillary, bifid, corymbose. Flowers small.

1 R. corda'ta (Cav. diss. 3. p. 117. t. 36. f. 2.) leaves cordate, oblong, acuminated, repand, hoary. ♄. S. Native of the island of Bourbon. Flowers pale-yellow.

Cordate-leaved Ruizia. Shrub 6 feet.

2 R. loba'ta (Cav. diss. 3. p. 118. t. 36. f. 1.) leaves cordate, crenated, 3-5-lobed, oblong, middle lobe longest and acuminated, hoary beneath, and smooth above. ♄. S. Native of the island of Bourbon. Flowers pale-red.

Lobed-leaved Ruizia. Clt. 1816. Shrub 6 feet.

3 R. varia'bilis (Jacq. schœnbr. 3. t. 295.) leaves of flowering branches palmatifid, those of sterile branches palmate-parted, hoary beneath. ♄. S. Native of the island of Bourbon. R. palmàta, Cav. diss. 3. p. 119. t. 37. f. 1. Flowers pale-red.

Var. β, *laciniàta* (Cav. diss. 3. p. 119. t. 37. f. 2.) leaves palmate-parted, with linear, very narrow, pinnatifid lobes. ♄. S. Native of the island of Bourbon. Flowers pale-red.

Variable-leaved Ruizia. Fl. May. Clt. 1792. Shrub 10 ft.

Cult. The species of *Ruízia* thrive well in a mixture of loam, sand, and peat; and cuttings will root freely if planted in the same kind of soil under a hand-glass, in heat.

XXI. PENTA'PETES (one of the names given by the Greeks to Cinquefoil, from πεντε, *pente*, five, in allusion to the 5-celled fruit.) Lin. gen. no. 834. D. C. prod. 1. p. 498.—Brotèra, Cav. icon. 5. p. 19.

Lin. syst. *Monadélphia, Polyándria*. Calyx deciduous, girded by a unilateral, 3-leaved involucel. Petals 5. Stamens with 3 antheriferous filaments between each sterile one. Style 1, with 5 teeth at the apex, or 5 styles joined together. Capsule 5-celled, 5-valved, many-seeded. Seeds naked, never winged.—Annual herbs, with undivided leaves, and axillary, 1 or few-flowered peduncles. Flowers shewy.

1 P. phœni'cea (Lin. spec. 958.) leaves lanceolate, halbert-shaped, serrated; flowers 1-2, axillary, drooping; anthers 15; style 1, 5-toothed at the apex. ♂. S. Native of the East

Indies. Mill. fig. t. 200. Ker. bot. reg. t. 575.—Rumph. amb. 5. p. 288. t. 100. f. 1.—Rheed. mal. 10. p. 1. t. 1. Flowers drooping, scarlet.

Scarlet-flowered Pentapetes. Fl. July, Aug. Clt. 1690. Pl. 2 to 3 feet.

2 P. ANGUSTIFÒLIA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 655.) leaves linear-lanceolate, serrated, roundish and cordate at the base; flowers 1-2, axillary, drooping; fertile anthers 15; style clavate, sulcated. ⊙? S. Native of Java. Flowers probably red or scarlet.

Narrow-leaved Pentapetes. Pl. 1 to 3 feet.

3 P. OVA'TA (D. C. prod. 1. p. 498.) leaves ovate, serrated; peduncles axillary, 2-3-flowered; anthers 5; styles 5. ⊙. S. Native of New Spain. Brotèra ovàta, Cav. icon. 5. p. 19. t. 433. Sprengèlia modésta, Schultz. obs. 134. Flowers reddish-yellow. Perhaps generically distinct from *P. phœnicea*.

Ovate-leaved Pentapetes. Fl. June, Sep. Clt. 1805. Pl. 2 ft.

Cult. Beautiful flowering plants, which will grow freely in a mixture of loam, sand, and peat, or any light rich soïl; and cuttings soon strike root in sand or mould under a hand-glass, in heat. They are also easily increased by seeds, which generally ripen in this country.

XXII. ASSO'NIA (in honour of Ignatius de Asso, a distinguished Spanish botanist, who wrote on the plants of Arragon,) Cav. diss. 3. p. 120. D. C. prod. 1. p. 498.

LIN. SYST. *Monadélphia, Polyándria.* Calyx permanent, 5-parted, girded by a 1-leaved, 3-crenated, lateral involucel. Petals 5. Stamens 15, bearing anthers, that is, 3 fertile ones between each sterile one. Styles 5, very short. Carpels 5, 2-seeded, closely joined together into a capsule. Seeds somewhat triquetrous, not winged. Trees with undivided leaves, and axillary, bifid, subcorymbose peduncles. Flowers white or red.

1 A. POPU'LNEA (Cav. diss. 3. p. 120. t. 42. f. 3.) leaves cordate, acuminated, smooth, a little serrated; peduncles scarcely longer than the petioles. ♄. S. Native of the island of Bourbon. Flowers red? disposed in a terminal, bifid corymb.

Poplar-leaved Assonia. Clt. 1820. Tree 10 to 20 feet.

2 A. VIBURNOI'DES (D. C. prod. 1. p. 498.) leaves cordate, somewhat acuminate, crenated, tomentose beneath, as well as younger leaves; peduncles 3 times longer than the petioles. ♄. S. Native of the island of Bourbon. Flowers white?

Viburnum-like Assonia. Clt. 1822. Tree 10 to 20 feet.

Cult. These trees will grow freely in any light rich soil, or a mixture of loam and peat. Young cuttings planted in mould under a hand-glass, in heat, will soon strike root.

XXIII. DOMBE'YA (in honour of Joseph Dombey, a French botanist, and traveller in Peru and Chili, companion of Ruiz and Pavon.) Cav. diss. 3. p. 121. Gært. fruct. 2. p. 259. t. 137. but not of Lam. D. C. prod. 1. p. 498.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-parted, permanent, girded by a 3-leaved, unilateral involucel. Petals 5. Stamens 15-20. Filaments joined together at the very base, 5 sterile, with 2-3 fertile ones between each of the sterile ones. Style 1, divided at the top into 5 somewhat reflexed stigmas. Carpels 5, 2-valved, 1 or many-seeded, closely joined together into a capsule. Cotyledons twisted, bifid. Flowers in bifid corymbs, with a single-stalked flower in the fork.

§ 1. *Leaflets of involucel broad, ovate or cordate.*

1 D. PALMA'TA (Cav. diss. 3. p. 122. t. 38. f. 1.) leaves smooth, palmate, 7-cleft, 7-nerved, with lanceolate, serrated lobes; corymbs bifid. ♄. S. Native of the island of Bourbon. There is a variety with 5-cleft, 5-nerved leaves. Flowers at first white, then pale-yellow, but at last rust-coloured.

Palmate-leaved Dombeya. Tree 20 feet.

2 D. ACUTA'NGULA (Cav. diss. 3. p. 122. t. 38. f. 2.) younger leaves tomentose, at length smooth, cordate, 5-7-nerved, roundish, crenated, with 3-5 angles, angles or lobes acute, when 5 the 2 lower ones are very small; corymbs bifid, with racemose branches. ♄. S. Native of the island of Bourbon. Flowers red, larger than those of the preceding.

Acute-angled-leaved Dombeya. Shrub 20 feet.

3 D. ANGULA'TA (Cav. diss. 3. p. 123. t. 39. f. 1.) leaves tomentose, cordate, roundish, toothed, obsoletely 3-lobed; umbels simple; peduncles shorter than the leaves. ♄. S. Native of the island of Bourbon. Flowers red. Calyx tomentose.

Angular-leaved Dombeya. Shrub 10 feet.

4 D. TILIÆFÒLIA (Cav. diss. 3. p. 124. t. 39. f. 2.) younger leaves tomentose, adult ones smoothish, cordate, 7-nerved, crenate; corymbs bifid. ♄. S. Native of Bourbon. Flowers probably red.

Lime-tree-leaved Dombeya. Fl. 1820. Shrub 10 feet.

5 D. TOMENTÒSA (Cav. diss. 3. p. 125. t. 39. f. 3.) leaves tomentose, roundish, cordate, acuminate, 5-nerved, transversely veined, crenated; umbel bifid. ♄. S. Native of Madagascar. Flowers white or red. Peduncles, petioles, and branches beset with long hairs.

Tomentose Dombeya. Shrub 10 feet.

6 D. HAMILTONIA'NA (Wall. pl. rar. asiat. 1. p. 69. t. 77.) shrub densely clothed with tomentum; leaves ovate, subcordate, obtuse, unequally and acutely toothed; peduncles axillary, 3-flowered, twice the length of the petioles. ♄. S. Native of the East Indies on the banks of Irawaddi near Melloon, also on Mount Taong Dong near Ava. Flowers large, yellow, involucrated.

Hamilton's Dombeya. Fl. Nov. Shrub 2 to 4 feet.

7 D. CORDIFÒLIA (D. C. prod. 1. p. 499.) leaves smooth, cordate, acuminate, serrated, 5-7-nerved, sometimes 3-lobed, lateral lobes small; peduncles rather longer than the petioles. ♄. S. Native of the East Indies. D. tiliæfòlia and angulàta, Roxb. hort. beng. Hook, bot. mag. 2905. Involucre soon falling off. Anthers 10. Flowers large, red, in dichotomous crowded corymbs. Calyx reflexed. Leaves pubescent beneath.

Heart-leaved Dombeya. Clt. 1820. Shrub 10 feet.

§ 2. *Leaflets of involucel narrow, lanceolate, or linear.*

8 D. UMBELLA'TA (Cav. diss. 3. p. 127. t. 41. f. 1.) leaves smooth, cordate, ovate-oblong, acuminated, somewhat repand; umbels globose, simple; peduncles twice as long as petioles. ♄. S. Native of Bourbon. Lam. ill. t. 576. f. 2. Flowers at first white, then rust-coloured.

Umbel-flowered Dombeya. Shrub 10 feet.

9 D. FERRUGÍNEA (Cav. diss. 3. p. 128. t. 42. f. 2.) leaves tomentose beneath, smooth above, ovate-oblong, 7-nerved, somewhat peltately cordate, toothed; corymbs 2-parted; peduncles twice as long as petioles. ♄. S. Native of the Mauritius. Leaves rusty beneath, as well as the branches.

Rusty-leaved Dombeya. Clt. 1815. Shrub 10 feet.

10 D. GRANDIFÒLIA (Lamb. herb.) leaves broad, cordate, slightly lobed, smooth; peduncles panicled. ♄. S. Native of the Mauritius. Flowers red?

Great-leaved Dombeya. Tree 20 feet.

11 D. PUNCTA'TA (Cav. diss. 3. p. 125. t. 40. f. 1.) leaves rather downy beneath, roughly dotted above, somewhat cordate, ovate-oblong, acuminated, 5-nerved, entire; corymbs crowded; peduncles longer than the leaves. ♄. S. Native of Bourbon. Flowers white or red.

Dotted-leaved Dombeya. Clt. 1820. Shrub 10 feet.

12 D. OVA'TA (Cav. diss. 3. p. 127. t. 41. f. 2.) leaves clothed with white tomentum beneath, smoothish above, 3-5-nerved, ovate, acute, toothed; corymbs bifid; style very small. ♄. S. Native of Bourbon. Shrub clothed with rusty hairs. Flowers whitish, or pale red.

Ovate-leaved Dombeya. Clt. 1822. Tree 16 feet.

Cult. All the species of *Dombèya* thrive well in sandy loam; and young cuttings will root freely in sand, under a hand-glass, in a moist heat.

XXIV. MELHA'NIA (from Mount Melhan in Arabia Felix, the habitation of *M. velutìna*). Forsk. descr. 64. Ait. hort. kew. ed. 2. vol. 4. p. 146. D. C. prod. 1. p. 499.

LIN. SYST. *Monadélphia, Decándria.* In every respect the same as *Dombèya*, but with 10 stamens, 5 fertile, and 5 sterile, each of the fertile ones bearing either 1 or 2 anthers. Sufficiently distinct from *Dombèya*.

§ 1. *Fertile filaments bearing 2 anthers each.*

1 M. DECANTHE'RA (D. C. prod. 1. p. 499.) leaves smooth, elliptical, acuminated at both ends, repandly-toothed; peduncles many-flowered, umbelliferous. ♄. S. Native of Madagascar. Dombèya decanthèra, Cav. diss. 3. p. 126. t. 40. f. 2. Flowers small, white?

Ten-anthered Melhania. Tree 10 feet.

§ 2. *Fertile filaments, bearing 1 anther each.*

2 M. ERYTHRO'XYLON (Ait. hort. kew. ed. 2. vol. 4. p. 146.) leaves ovate-cordate, somewhat peltate, acuminate, crenulated, tomentose beneath, netted; peduncles usually 3-flowered. ♄. S. Native of St. Helena in groves. Flowers large, white. Pentápetes erythróxylon, Ait. hort. kew. ed. 1. vol. 2. p. 138. Dombèya erythróxylon, Sims, bot. mag. t. 1000. This tree flowers even when only $1\frac{1}{2}$ foot high.

Red-wooded Melhania. Fl. May, Aug. Clt. 1772. Tree 15 ft.

3 M. MELANÓXYLON (Ait. hort. kew. ed. 2. vol. 4. p. 146.) leaves cordate, quite entire, tomentose on both surfaces, even; peduncles usually 3-flowered. ♄. S. Native of St. Helena. —Pluk. mant. 6. t. 333. f. 5. The involucel in this and *M. erythróxylon* soon fall off. Flowers white.

Black-wooded Melhania. Fl. July, Aug. Clt. 1800. Tree 20 feet.

4 M. DENHA'MII (R. Brown, in Denh. et Clapp. trav. appen. p. 27.). ♄. G. Native of the north of Africa near Soudan. This species differs from all the others in having its bracteas regularly whorled, and at the same time longer and much broader than the divisions of the calyx.

Denham's Melhania. Shrub.

5 M. VELUTI'NA (Forsk. descr. 64.) leaves ovate-lanceolate, serrated, tomentose; umbels axillary, simple, 4-flowered. ♄. G. Native of Arabia Felix on Mount Melhan, whence the generic name. Pentápetes velutìna, Vahl. symb. 1. p. 49. Dombèya velutìna, Willd. spec. Flowers yellow.

Velvety Melhania. Shrub 3 to 6 feet.

6 M. BURCHE'LLII (D. C. prod. 1. p. 499.) leaves oblong-linear, bluntish, somewhat serrated, velvety and hoary on both surfaces; pedicels axillary, 1-flowered, length of petioles. ♄. G. Native of the Cape of Good Hope. Melhània, Burch. cat. no. 2417. Flowers white?

Burchell's Melhania. Clt. 1818. Tree 15 feet.

7 M.? PROSTRA'TA (D. C. prod. 1. p. 499.) leaves linear, entire, smooth above, hoary beneath; pedicels axillary, 1-flowered, twice or thrice as long as the petioles. ♄. G. Native of the Cape of Good Hope. Dombèya prostràta, Burch. cat. no. 2153. Flowers not seen.

Prostrate Melhania. Shrub prostrate.

Cult. *Melhània* is a beautiful genus of shrubs and trees. They will grow well in a mixture of loam, peat, and sand, and cuttings will root in the same kind of soil, under a hand-glass, in heat. They are all liable to be covered with insects, such as the mealy bug, scale, and red spider, which should be carefully cleaned off, or the plants will not thrive.

XXV. TROCHE'TIA (in memory of M. Du Trochet, a vegetable physiologist). D. C. mem. mus. 10. p. 106. prod. 1. p. 499.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-parted (f. 92. *a.*), spreading, naked. Petals 5 (f. 92. *b.*). Stamens 20-25, monadelphous at the base (f. 92. *c.*), 5-7 of which are sterile (f. 92. *d.*). Ovary (f. 92. *e.*) 1, roundish, scaly. Style filiform (f. 92. *f.*). Capsule 5-celled, 5-valved. Seeds small, roundish, wingless. Shrubs with entire leaves, which are rusty or scaly beneath and axillary, 1-3-flowered, drooping peduncles.

1 T. UNIFLÒRA (D. C. mem. mus. 10. p. 106. with a figure). leaves ovate, somewhat acute, twice as long as broad; peduncles 1-flowered. ♄. S. Native of the Island of Bourbon. Flowers white or pale-red (f. 92.).

FIG. 92.

One-flowered Trochetia. Tree 20 feet.

2 T. TRIFLÒRA (D. C. l. c. with a figure) leaves ovate-lanceolate, acuminated, 4-times as long as broad; peduncles 3-flowered; flowers rising from the top of the peduncle, middle pedicel naked, lateral ones each furnished with a bractea. ♄. S. Native of the Island of Bourbon. Flowers white or pale-red?

Three-flowered Trochetia. Tree 20 feet.

Cult. These trees will succeed well in a mixture of loam and peat; and young cuttings will strike root freely in the same kind of soil under a hand-glass, in a moist heat.

XXVI. PTEROSPE'RMUM (from πτερον, *pteron*, a wing, and σπερμα, *sperma*, a seed; in allusion to the seeds being winged). Schrœb. gen. no. 1124. D. C. mem. mus. 10. p. 111. prod. 1. p. 500.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-parted, somewhat tubular at the base, naked or involucrated. Petals 5, usually shorter than the sepals. Stamens 20, 5 of these are sterile. Style cylindrical. Stigma thickish. Capsules woody, 5-celled. Seeds drawn out into a wing. Albumen sparing or wanting. Trees with large leaves, which are usually hoary beneath, and large, axillary or terminal, solitary flowers.

SECT. I. VELA'GA (meaning unknown). Adans. fam. 2. p. 389. D. C. prod. 1. p. 500. Involucel wanting.

1 P. ACERIFÒLIUM (Willd. spec. 3. p. 729.) leaves broad, peltately-cordate, obtuse, with a short acumen, toothed, tomentose beneath; pedicels shorter than the petioles. ♄. S. Native of the East Indies. Sims, bot. mag. t. 620. Pentápetes acerifòlia, Lin. spec. 939. Cav. diss. 3. p. 131. t. 44. Velàgo 'xylocárpa, Gært. fr. 2. p. 245. t. 133.—Amm. act. petr. 8. t. 16 and 17. Flowers white.

Maple-leaved Pterospermum. Fl. July, Sept. Clt. 1790. Tree 25 feet.

2 P. SUBERIFÒLIUM (Willd. spec. 3. p. 728.) leaves oblong, acuminated, obliquely cordate at the base, coarsely toothed at

the apex, tomentose beneath; pedicels hardly length of the petioles, but crowded at the tops of the branches. ♄. S. Native of the East Indies. Sims, bot. mag. t. 1526. Pentápetes suberifòlia, Lin. spec. 959. Cav. diss. 3. t. 43. f. 2. —Amm. act. petr. 8. t. 14. Flowers white, axillary, solitary, twin or tern at the tops of the branches.

Cork-tree-leaved Pterospermum. Fl. Sept. Oct. Clt. 1783. Tree 15 feet.

3 P. lanceæfòlium (Roxb. hort. beng. 50.) leaves unequal-sided, oblong-lanceolate or oval-oblong, acuminated, quite entire, tomentose beneath; pedicels much longer than the petioles. ♄. S. Native of the East Indies. Flowers white.

Lance-leaved Pterospermum. Clt. 1820. Tree 60 feet.

4 P. rubiginòsum (Heyne, mss. in Lin. soc. herb.) leaves ovate, quite entire, oblique, very unequal-sided, acuminate, clothed with rusty tomentum on the under surface as well as branches and calyx; peduncles longer than the petioles. ♄. S. Native of the East Indies. Leaves small.

Rusty-leaved Pterospermum. Tree.

5 P. Heyne'num; leaves oblong, or obovately oblong, quite entire, usually oblique at the base, abruptly acuminated at the apex, sometimes so as to appear tricuspidate, clothed with white tomentum on the under surface; peduncles axillary, short, 2-3-flowered, sometimes twin. ♄. S. Native of the East Indies. P. suberifòlium, Heyn. mss. herb.

Heyne's Pterospermum. Tree.

Sect. II. Pterolæ'na (from *πτερον, pteron*, a wing, and *χλαινα, chlaina*, a covering; in allusion to the flower being involucrated). D. C. mem. mus. 10. p. 111. prod. 1. p. 500. Involucel 3-leaved; leaflets large, cordate-roundish, fringed or jagged.

6 P. semisagitta'tum (Roxb. hort. beng. p. 50.) leaves oblong, acuminated, entire, cordate at the base, with unequal lobes, one of which is short and obtuse, the other is drawn out into a long point. ♄. S. Native of the East Indies. Link. enum. 2. p. 200. D. C. mem. mus. 10. p. 111. with a figure. Eriolæ'na Roxbúrghii, Spreng. This is a very shewy tree with dark-red flowers. Stipulas palmate, fringed.

Semisagittate-leaved Pterospermum. Clt. 1820. Tr. 20 ft.

7 P. diversifòlium (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 655.) leaves oblong, broadest above, serrated, obliquely cordate at the base, with rounded entire lobes, younger ones peltate, 3-5-lobed. ♄. S. Native of Java. Eriolæ'na diversifòlia, Spreng. Flowers white?

Diverse-leaved Pterospermum. Tree 23 feet.

† *Species, the name of which is only known.*

8 P. cane'scens (Roxb. hort. beng. p. 50.). ♄. S. Native of Ceylon. Flowers white?

Hoary Pterospermum. Clt. 1823. Tree 20 feet.

Cult. This is a genus of fine broad-leaved trees. They will thrive well in a mixture of loam, sand, and peat, and cuttings, not deprived of their leaves, will root readily in sand, under a hand-glass, in a moderate heat.

XXVII. VISE'NIA (probably from the name of some botanist). Blum. bijdr. ex Schlecht. Linnæa. 1. p. 654. Glossospérmum, Wall. in herb. soc. Lin.

Lin. syst. *Monadélphia, Pentándria.* Calyx 5-cleft. Petals 5. Stamens 5, all fertile, monadelphous at the base. Carpels 5, connate, 2-valved, 1-seeded. Seeds fixed to the bottom of the cells, ending in a wing at the apex. Albumen amygdalaceous. Embryo with leafy cotyledons and an inferior radicle.

1 V. umbella'ta (Blum. l. c.). ♄. S. Native of Java A tree with cordate, acuminated, obtusely-serrated leaves, which are canescent, and axillary, stalked, umbellate corymbs of flowers.

Umbellate-flowered Visenia. Tree 20 feet.

Cult. This tree may be propagated and cultivated in the same manner as recommended for *Pterospérmum*.

XXVIII. ASTRAPÆ'A (from *αστραπη, astrape*, lightning; brightness of flowers). Lindl. coll. bot. t. 14. D. C. prod. 1. p. 500.

Lin. syst. *Monadélphia, Polyándria.* Flowers umbellate, girded by a many-leaved involucel; leaflets roundish, ovate, with the 2 outer ones opposite. Calyx of 5 sepals, with 1 bractea on the outside of each. Petals 5. Stamens joined into a long tube, 5 sterile, 20 fertile. Ovary 5-celled. Style 1. Stigmas 5. Ovulæ few in each cell. Elegant trees, with large angular leaves, and drooping umbels of scarlet flowers.

1 A. Walli'chii (Lindl. coll. bot. t. 14.) leaves large, cordate, angularly lobed; stipulas leafy, ovate, acuminated; peduncles long, hairy; umbels drooping. ♄. S. Native of Madagascar. Ker. bot. reg. t. 691. A. Wallíchii and A. penduliflòra, D. C. Flowers scarlet. Anthers yellow.

Wallich's Astrapæa. Fl. July, Aug. Clt. 1820. Tree 30 ft.

2 A.? visco'sa (Sweet, hort. brit. p. 58.) leaves large, cordate, with 5 angular lobes, clammy, as well as the young branches. ♄. S. Native of Madagascar.

Clammy Astrapæa. Clt. 1823. Tree 30 feet.

3 A. tiliæfo'lia (Sweet, hort. brit. p. 58.) ♄. S. Native of the island of Bourbon. Perhaps a species of *Dombèya*.

Lime-tree-leaved Astrapæa. Clt. 1824. Tree 10 feet?

Cult. *A. Wallíchii* is one of the finest plants that ever was introduced into Britain; when in flower nothing can exceed it in beauty. All the species will grow well in a rich soil or a mixture of loam and peat; and young cuttings planted in mould, and placed under a hand-glass in heat, will soon strike root.

† *Uncertain Dombeyàceæ.*

XXIX. KY'DIA (in memory of Colonel Robert Kyd, whose love for botany induced him, at the desire of the East India Company, to begin a botanical garden and nursery at Calcutta, which he conducted with much success during his life.) Roxb. cor. 3. p. 11. D. C. prod. 1. p. 500.

Lin. syst. *Monadélphia, Polyándria.* Calyx campanulate, 5-lobed, surrounded by a 4-6-leaved involucel, with the leaflets of the involucel adhering to the calyx at the base. Petals 5, obliquely obcordate, longer than the calyx. Stamens monadelphous in a long tube; anthers disposed in 5, 4-anthered bundles on the top of the teeth of the staminiferous tube. Ovary 1. Style trifid. Stigmas dilated. Capsules 3-celled, 3-valved, 3-seeded. Seeds fixed to the bottom of the cells.—East India trees, with alternate 5-nerved and somewhat 3-5-lobed, or almost entire leaves, which are tomentose beneath, and diffuse panicles of white flowers. The proper place of this genus is uncertain.

1 K. calyci'na (Roxb. cor. 3. t. 215.) involucel 4-leaved, much longer than the calyx. ♄. S. Native of the East Indies, on the Coromandel coast. Flowers white. Anthers almost sessile on the top of the tube. Style protruding beyond the tube of stamens.

Large-calyxed Kydia. Clt. 1818. Tree 25 feet.

2 K. frate'rna (Roxb. cor. 3. p. 216.) involucel 6-leaved, shorter than the calyx. ♄. S. Native of the East Indies on the Circar mountains. Flowers white. Anthers aggregate on

the top of filaments, which are drawn out a long way beyond the tube of the stamens. Style length of tube.

Brotherly Kydia. Clt. 1823. Tree 40 feet.

Cult. These trees grow freely in any rich soil, or in a mixture of loam, peat, and sand; and young cuttings not deprived of their leaves, planted in mould, and placed under a hand-glass in heat, will root readily.

XXX. GLU'TA (from *gluta*, glue, in allusion to the petals being glued to the stipe-formed torus,) Lin. mant. 293. D. C. prod. 1. p. 501.

LIN. SYST. *Monadélphia, Polyándria.* Calyx campanulate, membranaceous, deciduous, naked. Petals 5, lanceolate, longer than the calyx, glued to a long stipe-formed torus. Stamens monadelphous, glued around the torus, exserted, and free at the apex. Anthers roundish, turning like a weather-cock. Ovary obovate. Style 1. Fruit?—A tree, with broad, lanceolate, naked leaves, and panicles of white flowers, almost as in *Clématis flámmula*.

1 G. BE'NGHAS (Lin. mant. 293.) ♄. S. Native of Java, where it is called *Benghas*. Branches and buds pubescent. Leaves obtuse, entire, even and smooth on both surfaces.

Benghas Gluta. Tree 30 feet?

Cult. *Glùta* will thrive well in a mixture of loam, peat, and sand; and young cuttings, not stripped of their leaves, will root freely in mould under a hand-glass, in heat.

XXXI. MARA'NTHUS (from *μαραινω, maraino*, to fade, and *ανθος, anthos*, a flower; the withered flowers are permanent.) Blum. bijdr. ex Schlecht. Linnæa. 1. p. 656.

LIN. SYST. *Monadélphia, Polyándria.* Calyx 5-parted, permanent. Petals 5, hardly longer than the calyx. Stamens numerous, rather connate at the base, all fertile, and marcescent. Anthers 2-celled. Ovary didymous, villous, 2-celled. Style 1, lateral, permanent, crowned by a simple stigma. Drupe oval, villous, 2-celled; cells 1-seeded. Seeds fixed by their base.

1 M. CORYMBO'SA (Blum. l. c.) ♄. S. Native of Java. A tree, with alternate, oblong, entire leaves, with 2 glands at the base instead of stipulas, and axillary and terminal corymbs of flowers.

Corymbose-flowered Maranthus. Tree 20 feet.

Cult. This tree will grow in a mixture of loam and peat, and cuttings taken off at a joint will root readily if planted in a pot of sand, placed under a hand-glass, in heat.

Tribe V.

WALLICHIE'Æ (plant agreeing with *Wallichia* in important characters). D. C. mem. mus. 10. p. 102. prod. 1. p. 501.

Calyx 5-lobed, surrounded by a 3 or 5-leaved involucel, which is rather distant from the flower. Petals 5, flat. Stamens indefinite; filaments in a long monadelphous tube, outer ones shortest. Anthers erect, bilocular. Fruit 5-10-valved, 5-10-celled; cells 1-8-seeded.

XXXII. ERIOLÆ'NA (from *εριον, erion*, wool, and *χλαινα, chlaina*, a cloak; in allusion to the woolly involucel and calyx.) D. C. mem. mus. 10. p. 102. prod. 1. p. 501.

LIN. SYST. *Monadélphia, Polyándria.* Calyx tomentose, 5-parted, acuminate, surrounded by a 5-leaved involucel; leaflets tomentose, jagged, the 3 inner ones largest, 2 outer ones smaller, all shorter than the calyx. Petals 5, unguiculate, shorter than the calyx. Stamens in many series around the column from top to bottom, monadelphous, outer ones shortest, all fertile. Style villous. Stigmas 10, aggregated into a head. Capsule 10-celled, 10-valved; cells 8-seeded, with a dissepiment in the middle of each valve bearing the seeds. Structure of the involucel resembling that of section *Pterolæ'na* of *Pterospérmum*.

1 E. WALLI'CHII (D. C. mem. mus. 10. p. 102. pl. 5.) leaves stalked; cordate, acuminate, toothed, pubescent above, villous beneath; pedicels villous, 1-flowered, 3-times as long as the petioles; involucre of 5-leaves. ♄. S. Native of the East Indies. Branches round. Flowers yellow. Resembles a species of *Hibíscus* in habit.

Wallich's Eriolæna. Clt. 1823. Tree 30 feet.

2 E. CANDO'LLII (Wall. pl. asiat. rar. 1. p. 51. t. 64.) leaves ovate-cordate, acuminated, entire, hoary-tomentose beneath; flowers terminal, panicled; involucre of 3 oblong-linear leaves. ♄. S. Native of the East Indies on the mountains of Prome, on the banks of the Irawaddi. Stigmas 10. Capsule 10-celled, 10-valved; cells 8-seeded, with a dissepiment in the middle of each valve, bearing the seeds. The species differs from *E. Wallíchii*, in the leaves and inflorescence being covered with stellate, grey tomentum, whereas they are densely hairy in that species. Petals yellow, emarginate. The involucre in the figure appears to be of many jagged leaves.

De Candolle's Eriolæna. Tree 40 feet.

Cult. These trees should be cultivated and treated in the manner recommended for *Kýdia*.

XXXIII. WALLI'CHIA (in honour of Nathaniel Wallich, M. D. F. R. and L. S. superintendant of the East India Company's botanical garden at Calcutta.) D. C. mem. mus. 10. p. 104. prod. 1. p. 501.

LIN. SYST. *Monadélphia, Polyándria.* Involucel 3-4-leaved, distant from the flower, small. Calyx 4-parted, with oblong-linear lobes. Flower-bud oblong. Petals 4, spreading, reflexed, with thick velvety claws. Stamens about 20, monadelphous into a conical tube, outer ones shortest. Ovary ovate, 8-celled. Style 1. Stigmas 8. Capsule 8-celled, 8-valved, with 1-seeded cells.

1 W. SPECTA'BILIS (D. C. mem. mus. 10. p. 104. t. 6.) ♄. S. Native of Nipaul. Jáckia spectábilis, Spreng. syst. 3. p. 85. Branches velvety. Leaves stalked, broad-ovate, somewhat cordate, serrated, velvety beneath. Peduncles axillary and terminal, longer than the leaves, many-flowered, constituting as if it were a leafy panicle. Flowers probably white, smaller than those of *Málva sylvéstris*. This tree resembles a species of *Tìlia* in habit.

Shewy Wallichia. Tree 36 to 40 feet.

Cult. This is a beautiful tree. A mixture of loam, peat, and sand will suit it best, and young cuttings not deprived of their leaves will root readily if planted in the same kind of soil under a hand-glass, in heat.

XXXIV. GOETHE'A (in honour of the celebrated Baron Goethe of Weimar.) Nees and Mart. nov. act. bonn. xi. p. 91. D. C. prod. 1. p. 501.

LIN. SYST. *Monadélphia, Polyándria.* Calyx campanulate, short, 5-cleft (f. 93. *a.*), surrounded by a large bladdery involucel (f. 93. *b.*). Petals 5, somewhat joined together at the base (f. 93. *c.*), spirally twisted in the bud. Filaments numerous, joined into a long column at the base (f. 93. *e.*). Anthers ovate, bilocular. Style elongated, cleft at the apex into 8-10 stigmas (f. 93. *g.*). Carpels 5, coriaceous, 1-seeded.—Trees and shrubs, with smoothish coriaceous leaves, and bearded petioles. Stipulas narrow. Flowers shewy, nodding. Peduncles axillary, 1-flowered. Involucel coloured, netted, bladdery.

1 G. SEMPERFLO'RENS (Nees and Mart. l. c. p. 92. t. 7.) leaves elliptical, serrated at the apex; flowers usually terminal; involucel 6-cleft (f. 93. *b.*) ♄. S. Native of Brazil in woods nigh to the road to Felisbert, at the temple of Ferreira Campos. Involucrum brown. Flowers purplish, with a white disk.

Ever-flowering Goethea. Fl. year. Tree 30 feet.

2 G. CAULIFLÒRA (Nees and Mart. l. c. p. 93. t. 8.) leaves oblong, quite entire; flowers rising laterally from the trunk; involucel 4-parted. ♄. S. Native of Brazil at the river called Ilheos, and in Maranham by river sides. Leaves large. Flowers with a scarlet involucel. We have seen this plant at Maranham in Brazil, or another species, which grows to a large tree.

Stem-flowered Goethea. Fl. Dec. Shrub 4 feet.

Cult. *Goethèa* is a genus of beautiful trees. A mixture of loam, sand, and peat, will suit them well, and young cuttings with their leaves on will root in sand under a hand-glass, in heat.

FIG. 93.

ORDER XXXIV. TILIA'CEÆ (plants agreeing with *Tìlia* in important characters). Juss. gen. p. 290, exclusive of Genera, Kunth, malv. p. 14. nov. gen. amer. 5. p. 354. D. C. prod. 1. p. 503.

Calyx usually naked on the outside, of 4-5 sepals (f. 94. *a.*), rarely of 4-7 lobes, valvate in æstivation. Petals equal in number to the sepals, and alternating with them (f. 94. *b.*), entire, usually foveolate at the claw, rarely absent. Stamens hypogynous, free, usually indefinite in numbers (f. 94. *d.*), rarely definite. Anthers oval or roundish, 2-celled, bursting lengthwise by a double chink. Glands equal in number to the petals, and opposite them, adhering to the stipe of the ovary. Ovary 1, constantly composed (f. 94. *g.*) of 2-10 closely joined carpels, crowned by an equal number of styles, which are joined together in 1, terminated by as many, usually free, stigmas (f. 94. *g.*). Capsule many-celled (f. 94. *f.*); cells many-seeded (f. 94. *f.*). Albumen fleshy, rarely wanting. Embryo straight, with flat, leafy cotyledons. This order differs from *Malvàceæ*, *Bombàceæ*, *Sterculiàceæ*, and *Byttneriàceæ*, in the filaments being free; from *Elæocárpeæ* in the petals being entire, not fringed, nor lobed, in the anthers being oval or roundish, not filiform and tetragonal, in bursting lengthwise, not by an oblong pore at the apex of the cells, as in that order. The order is composed of herbs, shrubs, and trees. Some of them are remarkable for their beauty, with alternate, simple, bistipulate leaves, which are usually serrate or toothed, and axillary, solitary, racemose or panicled flowers. The *Lime Tília*, from which the order derives its name, is a genus of fine trees, with fragrant flowers, the inner bark of which is tough and separable, and supplies the material whence the Russia mats, used by gardeners and others, are prepared. *Córchorus olitòrius* is cultivated in Egypt as a garden vegetable; the fibres of the bark of *Córchorus capulàris* are twisted into fishing-lines, and the roasted nuts of the lime tree are reported to bear some resemblance to chocolate. The *Sparmánnia* and *Entelèa* are elegant, broad, maple-leaved, green-house shrubs. The seeds retain their power of vegetation for many years.

Synopsis of the Genera.

1 SPARMA'NNIA. Sepals and petals 4. Stamens numerous, intermixed with sterile threads. Capsule echinated, 6-valved, 6-celled; cells 2-seeded.

2 ENTELE'A. Sepals and petals 4-5. Stamens numerous, all fertile, not intermixed with sterile threads. Capsule spherical, echinated, half 6-valved, 6-celled, many-seeded.

3 HELIOCA'RPUS. Sepals and petals 4. Stamens 12-20. Style 1, bifid, with recurved segments. Capsule stipitate, somewhat compressed, radiated lengthwise on all sides, 2-valved, 2-celled, 2-seeded.

4 ANTICHO'RUS. Sepals and petals 4. Stamens 8. Style 1. Capsule awl-shaped, 4-valved, 4-celled; cells many-seeded.

5 CO'RCHORUS. Sepals and petals 5. Stamens numerous. Style almost wanting. Stigmas 2-5. Capsule awl-shaped or roundish, 2-5-valved, 2-5-celled; valves with a dissepiment in the middle of each. Seeds in 2 series.

6 HONCKE'NYA. Sepals and petals 5. Stamens 8, with numerous capillary threads. Style crowned by a 6-toothed stigma? Capsule echinated, 5-valved, 5-celled. Valves with a dissepiment in the middle of each. Seeds numerous, arillate.

7 TRIUMFE'TTA. Sepals and petals 5. Stamens 10-30, sometimes a little connected at the base. Style 1. Carpels 2-4, closely joined together into a head, echinated by bristles, which are hooked at the apex. Seeds twin, or solitary in the cells.

8 PO'RPA. Calyx 5-parted. Petals 5. Stamens 26-30, girded by a membranous ring. Style 1, crowned by a 3-toothed stigma. Capsule hairy, 8-celled; cells 1-seeded.

9 GRE'WIA. Sepals 5. Petals 5, with a scale at the base of each on the inside. Stamens numerous, rising from the apex of the torus. Anthers roundish. Style 1, crowned by a 4-lobed stigma. Drupe 4-lobed, containing 2-4 nuts, which are 2-celled and 2-seeded, rarely 1-seeded.

10 MI'CROCOS. Sepals 5. Petals 5, destitute of scales on the inside. Stamens numerous, inserted on the top of the torus. Anthers roundish. Style crowned by a bluntish stigma.

11 VINCE'NTIA. Sepals and petals 5, the last bifid. Stamens numerous. Style crowned by a 4-lobed stigma. Capsule globose, indehiscent, containing 4 4-celled nuts, or from abortion only 1-celled and 1-seeded.

12 COLU'MBIA. Sepals and petals 5. Stamens numerous. Style 1. Torus pentagonal. Fruit globose, 4-celled, 4-winged, but perhaps composed of 2 2-winged, 2-seeded carpels.

13 TI'LIA. Calyx 5-parted. Petals 5. Stamens numerous, free, or somewhat polyadelphous. Ovary globose, villous, 1-styled, 5-celled; cells 2-seeded. Nut coriaceous, 1-celled, 1-2-seeded from abortion.

14 BROWNLO'WIA. Calyx 5-parted. Petals 5, with 5 linear

scales around the stigma. Stamens numerous, inserted round the apex of a turbinate receptacle. Style crowned by a 3-lobed stigma. Capsule of 1 to 5 2-valved, 1-2-seeded carpels.

15 DIPLOPHRA'CTUM. Sepals and petals 5 (f. 94. *a*. *b*.). Stamens numerous (f. 94. *d*.). Style 1, crowned by 5 aggregate stigmas (f. 94. *g*.). Capsule globose, indehiscent, 5-winged (f. 94. *e*.), 10-celled; cells parted into 1-seeded divisions by a transverse dissepiment. Seeds arillate, fixed to the sides of the valves.

16 MICROSTE'MMA. Sepals 5-6. Petals 10-12. Stamens 30, rather connected at the base. Style 1, crowned by 5-6 aggregate stigmas. Capsule globose, 5-6-winged, 5-6-valved, with a dissepiment in the middle of each valve. Seeds solitary, placed at the top of the valves.

17 MUNTI'NGIA. Calyx 5-7-parted. Petals 5-7. Stamens numerous. Ovary sessile, globose, girded by hairs at the base, crowned by a capitate-rayed stigma. Berry 5-celled, many-seeded. Seeds small, imbedded in pulp.

18 APEI'BA. Calyx 4-5-parted. Petals 4-5, unquiculate, smaller than the calyx. Stamens numerous, short. Anthers long, ending in 2 leafy lobes. Style 1, dilated at the apex into a funnel-shaped stigma. Capsule spherical, depressed, scabrous from soft bristles, or rigid tubercles, 8-24-celled. Seeds minute, numerous, fixed to the central fleshy receptacle.

19 SLOA'NEA. Calyx 4-7-lobed. Petals wanting. Stamens numerous; filaments almost wanting; anthers very long, crowned by a small acumen. Ovary 1. Style 1, filiform. Capsule ligneous, roundish, echinated with crowded prickles, 4-5-valved, 4-5-celled; cells 1-3-seeded. Seeds covered with fleshy aril.

20 ESENBE'CKIA. Calyx saucer-shaped, girded by a 3-parted, deciduous involucel. Petals 5. Stamens numerous; anthers twin. Style 1, crowned by a capitate, 5-angled stigma. Capsule woody, 5-angled, 5-valved, 5-celled; valves with a dissepiment in the middle of each. Seeds 3-6 in each cell, adhering to the dissepiment.

21 ABLA'NIA. Calyx 4-5-parted. Petals wanting. Stamens numerous; anthers roundish. Ovary ovate. Styles 2, bifid. Capsule 4-valved, 1-seeded, hispid from rigid bristles. Seeds numerous, arillate, fixed to a free central placenta.

22 GYROSTE'MON. Flowers dioecious. Calyx 6-7-lobed. Stamens numerous, disposed in a concentric circle; anther seated on a naked receptacle, without filaments, 2 or somewhat 4-celled. Capsule of numerous 2-valved, 1-seeded carpels, disposed in a whorl around the central axis. Perhaps belonging to *Euphorbiàceæ*.

23 CHRISTIA'NA. Calyx 3-lobed. Petals 5. Stamens indefinite. Capsule of 5, 1-seeded carpels, which are connected at the base. This genus is hardly known.

24 LUHE'A. Calyx 5-parted, girded by a 6-9-12-parted involucel. Petals 5. Stamens numerous, somewhat connected at the base in 5 bundles, with 5 pencilled or fringed scales opposite each bundle. Style thick, crowned by a 5-lobed stigma. Capsule 5-angled, 5-celled, 5-valved, with a dissepiment in the middle of each valve. Seeds winged at the apex, disposed in 2 rows on the margin of the dissepiment.

25 MO'LLIA. Sepals and petals 5. Stamens collected into many sets, disposed in many series, outer series in 5 sets, inner series indeterminately joined. Style simple. Capsule 2-celled, 2-valved, without a central column. Seeds numerous, awl-shaped, disposed in 2 series in each cell.

26 VA'TICA. Calyx 5-cleft. Petals 5, twisted in the bud. Anthers 15, sessile, ovate, 4-celled, 3 in front of each petal. Ovary 5-angled. Style crowned by a 3-lobed stigma. Capsule 3-celled? cells 1-seeded. A doubtful genus.

27 ESPE'RA. Calyx 4-parted, spreading. Petals long, permanent. Stamens numerous, capillary. Style 1. Stigma 1. Capsule oblong, 4-6-winged, 4-6-celled; cells 1-seeded. Seeds round, hairy.

28 BE'RRYA. Sepals and petals 5. Stamens numerous, rather connected at the base. Style crowned by a trigonal, capitate stigma. Capsule roundish, 3-celled, 3-valved, 6-winged, with 2 horizontal wings on the back of each valve, with a dissepiment in the middle of each on the inside. Seeds large, ovately-globose, covered with stiff hairs, 2 in each cell.

29 EUTHE'MIS. Sepals and petals 5. Stamens 5. Anthers oblong, acuminated, bursting at the apex by 2 pores. Style filiform, crowded by a simple stigma. Berry 5-seeded; seeds disposed round the central axis, covered with a fibrous aril. This genus differs from the rest of *Tiliàceæ* in the dehiscence of the anthers.

30 XEROPE'TALUM. Calyx 5-cleft. Petals 5, emarginate. Stamens about 20, 5 of which are sterile. Capsule 3-celled, 3-valved.

I. SPARMA'NNIA (in honour of Andrew Sparmann, M.D. a Swedish botanist, who went round the world with Captain Cook in his second voyage in 1772 to 1775.). Thunb. nov. gen. 88. Lin. fil. suppl. 41. D. C. prod. 1. p. 503.

LIN. SYST. *Polyándria, Monogýnia*. Calyx of 4 sepals. Petals 4, roundish. Stamens numerous, intermixed with numerous threads, which are tomentose and rather adhering at the base. Capsules echinated, 5-angled, 6-celled, 6-valved; cells 2-seeded. —A shrub, with large leaves, resembling those of *Kitaìbelia vitifòlia*.

1 S. AFRICA'NA (Lin. fil. suppl. 265.) ♄. G. Native of the Cape of Good Hope on the sides of mountains. Vent. malm. t. 78. Sims, bot. mag. t. 726. or 516. Leaves angular, hairy, as well as the younger branches. Flowers white with the sterile threads yellow, mixed with brown.

African Sparmannia. Fl. Mar. Jul. Clt. 1790. Tr. 20 ft.

Cult. A beautiful shrub, flowering early in spring. It thrives best in a mixture of loam and peat; and cuttings root freely in sand under a hand-glass.

II. ENTELE'A (from εντελης, *enteles*, perfect; alluding to the stamens being all fertile). R. Br. in bot. mag. t. 2480.

LIN. SYST. *Polyándria, Monogýnia*. Calyx of 4-5-sepals. Petals 4-5. Stamens indefinite, all fertile, without any sterile threads. Capsule spherical, echinated, 6-celled, half-6-valved, many-seeded.—A tree, with cordate, angular, double-crenated, 5-nerved leaves, furnished with small permanent stipulas. Flowers white, in simple, lateral, or terminal stalked umbels. Involucel many-leaved, short. Pedicels bractless. Anthers purplish or yellow. The genus differs from *Sparmánnia* in the stamens being all fertile, and in the capsule being undivided to the base, not as in that genus opening into 6 distinct valves, as well as in the cells being many-seeded.

1 arbore'scens (R. Br. in bot. mag. t. 2480.) ħ. G. Native of New Zealand near Tigado, Tolagi, and Oporagi. The wood is very soft and very light, and from this property it is used by the inhabitants to float their fishing nets with.

Arborescent Entelea. Fl. May. Clt. 1820. Tree 20 feet.

Cult. This is an elegant shrub, well adapted for a greenhouse conservatory. It will thrive in a mixture of loam and peat, and large cuttings, not too much ripened, will root in sand under a hand-glass.

III. HELIOCA'RPUS (from ἡλιος, *helios*, the sun, and καρπος, *karpos*, a fruit; the valves of the capsule are elegantly ciliated around on all sides, which gives them the appearance of a little sun.) Lin. gen. no. 606. D. C. prod. 1. p. 503.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 4 sepals. Petals 4. Stamens 12 to 20. Style 1, bifid, with the segments recurved. Capsules stipitate, somewhat compressed, rayed lengthwise on all sides, 2-celled, 2-seeded.—Trees, with cordate, serrate, 3-lobed, simple leaves, and cymes of small, yellowish-green flowers.

1 H. America'nus (Lin. spec. 643.) leaves smooth; branches and cymes smooth. ħ. S. Native of Vera Cruz. Móntia, Houst. Heliocárpus, Lin. hort. cliff. 211. t. 16. Trew. ehr. t. 45. Leaves cordate, somewhat 3-lobed, serrated. Flowers of a yellowish-green colour.

American Sun-fruit. Fl. July. Clt. 1733. Tree 14 to 20 ft.

2 H. Popayane'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 341.) nerves and veins of leaves hairy beneath; branches and cymes clothed with flocky down. ħ. S. Native of New Granada on the mountains near Popaya. Flowers of a yellowish green-colour. Perhaps only a variety of *H. Americànus*.

Popaya Sun-fruit. Tree 14 feet.

Cult. The species of *Heliocárpus* thrive best in a mixture of loam, peat, and sand; and young cuttings will root if planted in sand under a hand-glass, in a moderate heat.

IV. ANTICHO'RUS (from αντι, *anti*, a Greek preposition, which often signifies in composition resemblance to the word that follows, and *chorus*, abridged from *Córchorus*, in allusion to the resemblance in plants). Lin. fil. fasc. p. 3. t. 2. D. C. prod. 1. p. 504.

Lin. syst. *Octándria*, *Monogýnia*. Calyx of 4 sepals. Petals 4. Stamens 8. Style 1. Capsule awl-shaped, 4-valved, 4-celled; cells many-seeded. Resembles *Córchorus*.

1 A. depre'ssus (Lin. mant. 64.). ⊙. H. Native of Arabia. Jussiæ'a édulis, Forsk. descr. 210. Caríctera, Scop. Córchorus antichòrus, Rausch. A small, prostrate plant with coarsely toothed, oval leaves, and small, axillary, twin, yellow flowers, and reflexed fruit. The whole plant is boiled as a pot-herb.

Depressed Antichorus. Pl. trailing.

Cult. This is a trifling annual, the seeds of which will require to be sown in the beginning of May in a sheltered situation, where it will grow and ripen its seed freely.

V. CO'RCHORUS (κορχορος, in Greek a pot-herb, which comes from κορεω, *koreo*, to purge, and κορη, *kore*, the pupil; laxative qualities of *C. olitòrius*). Lin. gen. no. 675. D. C. prod. 1. p. 504.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 5, deciduous sepals. Petals 5. Stamens numerous. Style tubular, almost wanting. Stigmas 2-5. Capsules awl-shaped and round, 2-5-valved, 2-5-celled, with a dissepiment in the middle of each valve. Seeds disposed in 2 rows. Small shrubs or herbs with simple, serrated leaves covered with simple or stellate hairs. Peduncles opposite the leaves, or axillary, 1-flowered, or 2-3-parted, bearing 2-3 or many flowers. Corolla small, yellow, convolute in æstivation. Corchórus Japónicus now forms a separate genus among the *Rosàceæ* under the name of *Kérria*.

Sect. I. Core'ta (from κορεω, *koreo*, to purge; qualities of plants). P. Browne and Kunth, D. C. prod. 1. p. 504. Capsules silique-formed, 2-valved, 2-celled, but not ending in horns at the apex.

1 C. siliquòsus (Lin. spec. 746.) capsules linear, compressed, 2-valved, smooth; leaves lanceolate, equally serrated; stem smoothish, much branched; peduncles usually 2-flowered. ħ. S. Native of South America, Jacq. vind. 3. p. 34. t. 59.—Plum. ed. Burm. t. 103. f. 1. The flowers, according to Linneus, are of 4 sepals and 4 stamens, and without petals in the spring, but in the autumn they bear 5 sepals and 5 petals and numerous stamens. C. lineàris, Mill. dict. no. 5. C. secundiflòrus, Moc. et Sess. fl. mex. icon. ined. Flowers pale-yellow. This plant is used for besoms by the negroes in the West Indian colonies. Leaves sometimes truly ovate.

Silique-capsuled Corchorus. Fl. June, Aug. Clt. 1732. Shrub 2 to 6 feet.

2 C. foliòsus (Spreng. syst. 2. p. 583.) leaves small, crowded, ovate-oblong, crenulated, smooth; peduncles 1-flowered; capsule terete, rough, 2-valved; stem shrubby. ħ. S. Native of Cuba. C. siliquòsus, Poppig.

Leafy Corchorus. Fl. June, July. Shrub 1 foot.

3 C. hi'rtus (Lin. spec. 747.) capsules linear, compressed, 2-valved, and are as well as the stem hairy; leaves oblong, equally serrated. ⊙. S. Native of South America. Jacq. vind. 3. t. 58.—Plum. ed. Burm. t. 103. f. 2. Flowers yellow.

Hairy Corchorus. Fl. June, Aug. Clt. 1820. Pl. 1 to 2 ft.

4 C. ala'tus; plant pilose, branched; leaves ovate, acute, serrated, lower serratures setaceous; stipulas setaceous; pedicels 2-3 together, short, axillary; capsule long, flat, winged. ⊙. S. Native of Guinea. Flowers small, yellow.

Winged-capsuled Corchorus. Pl. ¾ foot.

5 C. pilo'lobos (Link. enum. hort. berl. 2. p. 72.) capsules linear, compressed, somewhat falcate, hairy, younger ones acuminated with the style; leaves oblong, somewhat cordate, acutely crenated, smoothish; stem hairy above. ♃. S. Native of? C. lasiólobus, Spreng. syst. 2. p. 583. Flowers yellow. This plant is often confused with *C. hírtus* in the gardens.

Cap-podded Corchorus. Fl. Ju. Sept. Clt. 1818. Pl. 1 to 2 ft.

6 C. Orinoce'nsis (H. B. et Kunth. nov. gen. amer. 5. p. 337.) capsules siliquose, rather terete, 2-celled, hairy; leaves lanceolate-oblong, upper ones linear-lanceolate, acute, crenated, smooth or a little ciliated; stem almost simple, erect. ⊙. S. Native on the banks of the river Orinoco, near Angustura. Flowers yellow.

Orinoco Corchorus. Pl. 1 to 2 feet.

7 C. villosi'ssimus (St. Hil. fl. bras. 1. p. 280.) stem densely pilose at the apex; leaves ovate, usually acute, crenate-toothed, villous, younger ones densely silky-villous; pedicels opposite the leaves, twin; capsule compressed, hairy. ħ. S. Native of Brazil in the province of Minas Geraes. Flowers yellow.

Very villous Corchorus. Fl. Aug. Shrub 1 foot.

8 C. argu'tus (H. B. et Kunth, nov. gen. amer. 5. p. 337. St. Hil. fl. bras. 1. p. 282.) stem lined with villi; leaves linear-lanceolate, sharply serrated, smooth, scabrous above; pedicels twin, rising from the side of the axils; capsule tetragonal, compressed, puberulous, erect. ħ. S. Native of Brazil, in the province of Minas Geraes and of New Granada. Flowers yellow.

Var. β, *austràlis* (St. Hil. 283.) stem more slender, leaves more oblong, less acute, less erect, with the nerves hardly white. In the province of the Missions.

Sharp-toothed-leaved Corchorus. Fl. Aug. Shrub 2 to 3 ft.

9 C. pilòsus (H. B. et Kunth, nov. gen. amer. 5. p. 338. t. 487.) capsules siliquose, 2-celled; peduncles opposite, the leaves simple, hairy; leaves ovate, acute, or ovate-lanceolate, acute, serrate-toothed, puberulous, and beset on both surfaces as well as the branches with long, soft hairs; stem hispid. ⊙. S. Native of New Granada near Ibague, and of Brazil in the province of Minas Geraes. Flowers yellow. Capsule pilose.

Pilose Corchorus. Shrub ½ to 1 foot.

10 C. hu'milis (St. Hil. fl. bras. 1. p. 280.) stem soft, hispid; leaves oblong, ovate, deeply crenate-toothed, pubescent; pedicels opposite, the leaves twin, 2-parted, 2-flowered; capsule compressed, hispid, spreading. ⊙. H. Native of Brazil in the province of Minas Geraes. Flowers yellow.

Humble Corchorus. Fl. Aug. Pl. ½ to 1 foot.

11 C. to'rtipes (St. Hil. fl. bras. 1. p. 281. t. 55.) stem rather scabrous, with lines of villi; leaves ovate, acute, unequally serrated, pilose; pedicels twin, rising from the sides of the axils of the leaves, twisted; capsule compressed, erect, with a few hairs. ♄. S. Native of Brazil about Rio Janeiro. Flowers yellow on a furcate peduncle.

Twisted-pedicelled Corchorus. Fl. Aug. Shrub 2 to 3 feet.

12 C. Mompoxe'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 338.) capsules siliquose, straight, 2-edged, 2-celled, hairy; leaves oblong-lanceolate, each ending in a narrow acumen, serrated, smoothish; branches smooth, with a pubescent line. ♄. S. Native of South America on the banks of the river Magdalena, near Mompox. Flowers yellow.

Mompox Corchorus. Shrub 2 to 4 feet.

Sect. II. Coretoìdes (alluding to the resemblance which the plants of this section have with those of the preceding *Corèta*). D. C. prod. 1. p. 504. Capsules silique-formed, 3-6-valved, 3-6-celled, but not ending in horns at the apex as in the following section.

13 C. trilocula'ris (Lin. mant. 77.) capsules awl-shaped, trigonal, 3-valved, scabrous; leaves ovate-oblong, serrated, with the lower serratures usually setaceous. ⊙. S. Native of Arabia. C. æ'stuans, Forsk. descr. 101. Petals pale-yellow. The whole plant is eaten as a pot-herb.

Three-celled-capsuled Corchorus. Fl. July, Aug. Clt. 1790. Pl. 1 foot.

14 C. olitòrius (Lin. spec. 746.) capsules oblong-cylindrical, obtuse-angled, smooth, 5-celled; leaves ovate-oblong, serrated, with the lower serratures long and setaceous; peduncles nearly sessile, solitary. ⊙. S. Native of Asia, Africa, and America between the tropics in gardens and among rubbish. Lam. ill. t. 478. f. 1.—Com. hort. 47. t. 12.—Mor. hist. 2. p. 283. f. 3. t. 15. f. 4. Flowers yellow. Rauwolf says this plant is sown in great plenty about Aleppo as a pot-herb, the Jews boiling the leaves to eat with their meat, whence in French it is called *mauve-de-juif*.

Pot-herb Corchorus. Fl. Ju. Aug. Clt. 1640. Pl. 1 to 2 ft.

15 C. longica'rpus; suffruticose, erect, branched; leaves ovate-lanceolate, acute, serrated; lower serratures bristly; petioles pilose; peduncles short, 1-flowered; stipulas setaceous; capsule long, acuminated, smooth, nearly sessile; 5-celled. ♄. S. Native of Guinea. Flowers small, yellow.

Long-fruited Corchorus. Pl. 1 foot.

16 C. æ'stuans (Lin. spec. 746.) capsules oblong, 3-valved, 6-furrowed; leaves somewhat cordate, ovate, acuminated, serrated, with the lower serratures long, and setaceous. ⊙. S. Native of South America. Jacq. vind. t. 85.—Pluk. phyt. t. 127. f. 3.—Brown. jam. 232. t. 25. f. 1. under *Triumfétta*.

Scorching Corchorus. Fl. June, July. Clt. 1731. Pl. 1 ft.

17 C. prismatoca'rpus (St. Hil. fl. bras. 1. p. 282.) stem lined with villi; upper leaves oblong-lanceolate, serrate-toothed, rather pubescent; pedicels twin, opposite the leaves; capsule prismatic, 4-5-angled, hairy, erect, 2-3-valved. ♄. S. Native of Brazil in the province of the Missions. Flowers yellow.

Prismatic-fruited Corchorus. Fl. Feb. Shrub ½ to 1 foot.

18 C. serræfòlius (Burch. cat. geogr. no. 1962. voy. 1. p. 537.) capsules linear, terete, scabrous, usually twisted, 6-valved peduncles lateral, trifid, 3-flowered; leaves linear, coarsely serrated. ♃. G. Native of the Cape of Good Hope in a plain near Gattskamma beyond the river Gariep. Stems procumbent, elongated, villous. Flower-bud acute. Petals yellow.

Saw-leaved Corchorus. Pl. procumbent.

19 C. lanceola'tus; plant erect, twiggy, simple, smooth; leaves lanceolate, equally serrated, lower serratures setaceous; petioles hairy; stipulas setaceous; pedicels axillary, solitary, 1-flowered; capsule long, 3-5-celled? ♄? ⊙? S. Native of Guinea. Flowers small, yellow.

Lanceolate-leaved Corchorus. Pl. 1 to 2 feet.

20 C. asplenifòlius (Burch. cat. geogr. no. 1737. voy. 1. p. 400.) capsules? peduncles opposite the leaves, trifid, 3-flowered; leaves elongated, ovate, simply crenate-serrated; flower-bud somewhat globose. ♃. G. Native of the Cape of Good Hope on the banks of the river Gariep. This is probably only a variety of *C. serræfòlius*.

Spleen-wort-leaved Corchorus. Pl. procumbent.

Sect. III. Ceratocore'ta (from κερας, *keras*, a horn, and *Corèta*, the name of the first section; in allusion to the carpels ending in horns). D. C. prod. 1. p. 505. Capsules elongated, angular, ending at the apex in 3 and 5 diverging horns.

21 C. tri'dens (Lin. mant. 566. exclusive of the synonym of Burm.) capsules slender, 2-3-valved, 2-3-angled, 2-3-horned; leaves oblong, serrated, lower serratures setaceous. ♄. S. Native of the East Indies and Guinea. C. Senegalénsis, Juss. These are varieties with narrow and broad leaves.—Pluk. phyt. t. 127. f. 4.—Burm. ind. 123. t. 37. f. 2. Flowers yellow.

Trident-capsuled Corchorus. Fl. June, Aug. Clt. 1824. Shrub 1 to 2 feet.

22 C. fascicula'ris (Lam. dict. 2. p. 104.) leaves oblong-lanceolate, unequally-serrated, smooth, mutic at the base; capsule almost sessile, aggregate, woolly, ovate-oblong, 3-valved, 6-celled, and 3-horned at the apex. Native of the East Indies. —Pluk. amalth. t. 439. f. 6. Flowers yellow.

Fascicled-capsuled Corchorus. Shrub 2 feet.

23 C. acuta'ngulus (Lam. dict. 2. p. 104.) capsules oblong, acutely angled, ending in 3-5 entire or bifid horns; leaves ovate, rather hispid, serrated, with one bristle on each side at the base. ⊙. S. Native of St. Domingo and the East Indies.—Pluk. phyt. t. 44. f. 1. C. tetrágonus, Mill. dict. no. 4.? Perhaps two species are confused under this name.

Acute-angled-capsuled Corchorus. Fl. June, Jul. Clt. 1816. Shrub 2 feet.

24 C. pa'tens (Lehm. in nov. act. bon. 12. p. 805.) leaves lanceolate, smooth, serrated, lower serratures setaceous; capsule linear, 3-valved, 6-furrowed, smooth, tricuspidate, spreading; peduncles 1-3-flowered. ⊙. H. Native of Egypt.

Spreading-capsuled Corchorus. Fl. June, July. Pl. 1 foot.

25 C. Guadaloupe'nsis (Spreng. syst. 2. p. 584.) leaves ovate-serrated, mutic at the base; capsule linear, terete, obtuse-angled, 4-valved, 4-horned at the apex. ⊙. S. Native of Guadaloupe. Flowers yellow.

Guadaloupe Corchorus. Pl. 1 foot.

Sect. IV. Ga'nja (the name of the plant in Amboyna). Rumph. amb. 5. t. 78. f. 1. D. C. prod. 1. p. 505. Capsules somewhat globose, depressed, wrinkled, muricated.

26 C. capsula'ris (Lin. spec. 746.) leaves ovate-lanceolate, acuminated, serrated, with the lower serratures setaceous. ⊙. S. Native of the East Indies. Gært. fr. t. 129. Jacq. ecl. 2. t. 120.—Pluk. alm. t. 255. f. 4. Flowers yellow, in clusters, opposite the leaves.

Capsular-podded Corchorus. Fl. June, July. Clt. 1731. Pl. 1 to 4 feet.

Sect. V. Guazumoi'des (from *Guazuma* and *idea*, form; plants agreeing with *Guazuma*, in having prickly capsules). D. C. prod. 1. p. 505. Capsules ovate, somewhat velvety, and echinated with soft prickles. Flowers yellow.

27 C. hirsu'tus (Lin. spec. 747.) capsules ovate, woolly; leaves ovate, obtuse, tomentose, equally serrate-crenated or entire. ♄. S. Native of South America.—Plum. ed. Burm. t. 104.—Jacq. amer. pict. 81. t. 157. C. frutéscens, Lam. dict. 2. p. 105. Peduncles umbellate, many-flowered.

Var. β, *oblongifòlius;* leaves oblong. ♄. S. Native of Jamaica, &c. C. hirsùtus, Jacq. hort. vind. t. 57. f. 2.

Hairy Corchorus. Fl. June, July. Clt. 1752. Shrub 4 to 5 feet.

28 C. arena'rius (H. B. et Kunth, nov. gen. amer. 5. p. 339.) capsules oblong, 3-sided, 3-celled; leaves small, in fascicles, oblong, blunt at both ends, undulately-crenated, rather complicated, coriaceous, tomentose; branches clothed with flocky down. ♄. S. Native of New Andalusia in sandy places.

Sand Corchorus. Shrub 8 to 12 feet.

29 C. tomentòsus (Thunb. fl. jap. 228.) capsules oblong, woolly; leaves ovate, obtuse, tomentose, equally serrated. ♄. G. Native on the mountains of Japan. Flowers orange-coloured, usually solitary.

Tomentose Corchorus. Shrub 2 to 4 feet.

† *Species not sufficiently known.*

30 C.? sca'ndens (Thunb. in Lin. trans. 2. p. 335.) leaves opposite, ovate, with setaceous serratures; stem and branches flexuous-scandent; flowers terminal, solitary. ♄. ◡. G. Native of Japan. Flowers yellow.

Climbing Corchorus. Shrub climbing.

31 C. serra'tus (Thunb. l. c.) leaves oblong, serrated; serratures pointed; branches smooth. ♄? G. Native of Japan. Branches purple. Flowers yellow, terminal.

Serrate-leaved Corchorus. Shrub 2 feet.

32 C. flexuòsus (Thunb. l. c.) leaves doubly serrated, acuminated, obliquely cordate, villous; stem flexuous. ♄? S. Native of Japan. Flowers yellow.

Flexuous-stemmed Corchorus. Shrub 2 feet.

33 C.? Java'nicus (Burm. ind. 123. t. 36. f. 3.) capsules roundish, hispid; leaves ovate-lanceolate, equally serrated; calyxes awned. ♄? S. Native of Java. Perhaps this plant is nearer *Melòchia*.

Java Corchorus. Shrub?

34 C. Burma'nni (D. C. prod. 1. p. 505.) capsules awl-shaped, trigonal, 3-celled, 3-valved; leaves linear-oblong, serrated, with the lower serratures setaceous. ♄. S. Native of the East Indies. C. triloculàris, Burm. ind. p. 123. t. 37. f. 2. This plant is probably referable to *C. triloculàris* or to *C. trídens*, but according to the figure it is distinct from both.

Burmann's Corchorus. Shrub 1 to 2 feet.

35 C. bifurca'tus (Mill. dict. no. 6.) capsules linear, compressed, forked at the apex; leaves cordate, serrated. ⊙. S. Native of Jamaica. Flowers pale-yellow. Capsules 2-celled.

Two-forked-capsuled Corchorus. Pl. 2 to 3 feet.

36 C. furca'tus (Roxb. hort. beng. p. 42.). ⊙. S. Native of the East Indies. Flowers yellow.

Forked-capsuled Corchorus. Pl. 1 to 2 feet.

37 C. decemangula'ris (Roxb. hort. beng. p. 42.) capsules 10-angled. ⊙. S. Native of the East Indies in Bengal.

Ten-angled-capsuled Corchorus. Pl. 1 to 2 feet.

38 C. quadrangula'ris; erect, smooth, branched; leaves lanceolate, acute, serrated, with the lower serratures setaceous; stipulas setaceous; flowers nearly sessile; capsule long, quadrangular. ⊙? ♄? H. Native of Sierra Leone.

Quadrangular-capsuled Corchorus. Pl. 1 foot.

Cult. This is a genus of trifling plants with small yellow flowers; therefore they are not worth cultivating, except in botanic gardens. They will thrive best in a light sandy soil, and cuttings of the shrubby kinds will readily root in sand, under a hand-glass, in a moderate heat. The annual species require to be sown on a hot-bed in spring, and when the plants are of sufficient size they should be potted off into separate pots, and then placed in the greenhouse or stove, or they may be planted out in the open border in a warm sheltered situation about the middle of May, where they will probably ripen seed.

VI. HONCKE'NYA (in honour of G. A. Honckeney, a celebrated German cultivator of plants.) Willd. in Ust. del. op. p. 201. t. 4. D. C. prod. 1. p. 506.

Lin. syst. *Octándria, Monogýnia.* Calyx of 5 sepals, coriaceous, hairy on the outside, coloured on the inside. Petals 5, oblong. Stamens 8, with oblong anthers, intermixed with numerous capillary threads. Ovary oblong. Style 1. Stigma 6-toothed. Capsules echinated with prickles, 5-celled, 5-valved, with a dissepiment in the middle of each valve. Seeds numerous, arillate. This shrub is allied on the one side to *Sparmánnia*, and on the other to *Apeìba*.

1 H. ficifòlia (Willd. l. c.) ♄. S. Native of Guinea. Leaves clothed on the under surface with brownish tomentum, upper ones spatulate-oblong, toothed, lower ones obtusely 3-5-lobed. Flowers terminal in threes, of a bluish-violet colour.

Fig-leaved Honckenya. Shrub or Tree.

Cult. This plant will thrive in a mixture of loam and peat; and young cuttings will root in sand under a hand-glass, in heat.

VII. TRIUMFE'TTA (in honour of John Baptist Triumfetti, an Italian botanist, author of observations on the vegetation of plants; died 1707. It must also distinguish Lælius Triumfetti his brother, once professor of botany at Rome.) Lin. gen. no. 600. D. C. prod. 1. p. 506.

Lin. syst. *Deca-Polyándria, Monogýnia.* Calyx 5-sepalled, blunt, or usually with a point just under the apex. Petals 5, with the claws ciliated, rarely wanting. Stamens 10-30, free, girded by a narrow urceolus at the base. Glands 5 on the receptacle, opposite the petals. Ovary roundish. Style 1, 2-5-toothed at the apex. Carpels 2-5, more or less closely joined into a single fruit, which is beset with hooked prickles. Seeds 1 or 2 in each cell or carpel, hairy. Embryo straight. Shrubs, rarely herbs, with simple or 3-lobed leaves, for the most part 3-nerved at the base. Peduncles solitary, axillary, 2-3-flowered, but usually crowded, frequently joined at the base, commonly opposite the leaves, or disposed in clustered interrupted racemes on the tops of the branches. Corolla yellow. Pili stellate.

Sect. I. La'ppula (a dim. of *Lappa*, burdock, resemblance in bristly capsules.) D. C. prod. 1. p. 506.—Triumfétta, Gært.

fruct. 111. Flowers apetalous. Carpels closely joined into an undivisible capsule, with a solitary seed in each cell.

1 T. LA'PPULA (Lin. spec. 637.) leaves roundish, unequally toothed, somewhat villous, 5-nerved, 3-lobed; lobes acuminate. ♄. S. Native of the West Indies, Brazil, and the Bermudas. T. Plumièri, Gært. fruct. 2. p. 137.—Plum. ed. Burm. t. 255.

Small-bur Triumfetta. Fl. July, Aug. Clt. 1739. Shrub 3 to 6 feet.

2 T. HETEROPHY'LLA (Lam. dict. 3. p. 420.) leaves undivided at the base, lower ones deeply lobed, upper ones oblong, repand. ♄. S. Native of St. Domingo.—Pluk. amalth. t. 425. f. 3.

Variable-leaved Triumfetta. Fl. July, Aug. Clt. 1824. Shrub 3 to 4 feet.

3 T. PILO'SA (Roth. nov. spec. p. 223.) leaves ovate, acuminated, entire, unequally serrate, hairy, clothed, with silky tomentum beneath, hardly emarginate at the base; prickles of capsule ciliated. ♄. S. Native of the East Indies. Resembles *T. Láppula* very much. Flowers yellow.

Pilose Triumfetta. Fl. July, Aug. Clt. 1824. Shrub 2 to 4 feet.

Sect. II. Bartra'mia (in honour of John Bartram, an Anglo-American botanist,) D. C. prod. 1. p. 506. Bartràmia, Gært. fruct. t. 111. but not of Hedw. Flowers of 5 petals. Carpels 3-4, not closely connected, and therefore when ripe separating into 3-4 parts. Seeds usually 2 in each cell or carpel.

4 T. RUBRICAU'LIS (H. B. et Kunth, nov. gen. amer. 5. p. 342.) leaves oblong, acuminated, pubescent, serrated, with the lower serratures glandular; branches puberulous; peduncles axillary, 2-3-flowered. ♄. S. Native of South America in dry shady places at Caraccas. Branches dark-purple. Stamens 24. Fruit spherical, hairy, 6-celled, indehiscent. Petals 5, yellow. Probably this plant may form a distinct section.

Red-stemmed Triumfetta. Shrub 2 to 4 feet.

5 T. Bogote'nsis (D. C. prod. 1. p. 506.) leaves ovate-oblong, acuminated, sharply and doubly toothed, and are as well as the branches pilose; peduncles 2-3, axillary, at apex 3-flowered. ♄. S. Native of Santa-Fe-de-Bogota. Stamens 10. Fruit globose, 3-celled, echinated. F. pilòsa, H. B. et Kunth, nov. gen. amer. 5. p. 342. but not of Roth.

Bogota Triumfetta. Shrub 3 feet?

6 T. ROTUNDIFÒLIA (Lam. dict. 3. p. 421.) leaves roundish, unequally crenated, covered with white tomentum beneath; flowers somewhat spiked; fruit hairy and echinated. ⊙. S. Native of the East Indies. Leaves 4-5 lines in diameter. Flowers yellow.

Round-leaved Triumfetta. Fl. June, Aug. Clt. 1817. Pl. 2 ft.

7 T. SUBORBICULA'TA (D. C. prod. 1. p. 506.) leaves somewhat orbicular, entire, erosely-crenate, almost naked above, but covered with white down beneath; racemes terminal, loose; fruit covered with hooked bristles. ♄. S. Native of the East Indies. T. rotundifòlia, Roth. nov. spec. 222. but not of Lam. Stem erect. Flowers yellow.

Suborbicular-leaved Triumfetta. Fl. June, July. Clt. 1820. Shrub 2 feet.

8 T. SUFFRUTICÒSA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 637.) stem suffruticose; leaves ovate, cordate, acuminated, coarsely and unequally serrated, stellately-pilose beneath, younger and lower leaves half trifid; peduncles usually 7, extra-axillary, umbellately 3-4-flowered at the apex; calyx apiculate; fruit pilose, and covered with long hooked bristles. ♄. S. Native of Java. Flowers yellow.

Suffruticose Triumfetta. Shrub 2 to 3 feet.

9 T. GRAVE'OLENS (Blum. bijdr. l. c.) leaves ovate, cordate, acuminated, serrated, pilose on both surfaces; peduncles usually tern, extra-axillary, 3-flowered; calyx apiculated; fruit covered with hooked bristles, without any pubescence. ⊙. S. Native of Java. Flowers yellow.

Strong-scented Triumfetta. Pl. 2 to 3 feet.

10 T. CA'NA (Blum. bijdr. l. c.) leaves ovate-oblong, or ovate-lanceolate, acuminated, cordate and unequally serrated at the base, beset with stellate pili above, but with stellate tomentum beneath; peduncles 4-6 together, extra-axillary, usually 3-flowered; calyx tomentose, apiculated; fruit covered with hooked stiff hairs. ⊙. S. Native of Java. Flowers yellow.

Hoary Triumfetta. Pl. 2 to 3 feet.

11 T. GLANDULÒSA (Lam. dict. 3. p. 421.) leaves roundish or broad-ovate, undivided, clothed with velvety tomentum beneath, toothed, lower teeth glandular beneath; flowers axillary, upper ones disposed as if they were in a spike; calyxes pubescent, acuminated; fruit downy and echinated. ♄. S. Native of the Mauritius. Bartràmia, Lam. ill. t. 400. f. 1. Flowers yellow.

Glandular-leaved Triumfetta. Fl. June, Aug. Clt. 1816. Shrub 2 to 3 feet.

12 T. VA'HLII (Poir. suppl. 3. p. 300.) leaves ovate-lanceolate, serrated, villous on both surfaces from stellate down, hoary beneath, lower teeth of the upper leaves glandular; stipulas awl-shaped. ♄. G. Native of Arabia Felix. T. glandulòsa, Forsk. cat. arab. 297. Vahl. symb. 3. p. 62. Flowers yellow.

Vahl's Triumfetta. Shrub 3 feet.

13 T. OVA'TA (D. C. prod. 1. p. 507.) leaves ovate, undivided, unequally toothed, smoothish above, hoary beneath, glandless, 7-nerved; flowers disposed in interrupted spikes. ♄ ? S. Native of the Caribbee Islands. Flowers yellow.

Ovate-leaved Triumfetta. Shrub 2 to 4 feet.

14 T. TRICHO'CLADA (Link. enum. hort. berl. 2. p. 5.) leaves ovate, acuminated, 7-nerved, serrated, woolly beneath; branches with a hairy line; flowers crowded; calyxes of 4 sepals, hairy at the apex; fruit echinated. ⊙. G. Native of Nipaul. Stem branched. Bracteas and stipulas hairy. Flowers yellow.

Hairy-branched Triumfetta. Fl. Aug. Sep. Clt. 1823. Pl. 2 to 3 feet.

15 T. OBLO'NGA (Wall. mss. D. Don, prod. fl. nep. p. 227.) leaves ovate-lanceolate, unequally serrated, woolly beneath. ⊙. G. Native of Nipaul. Flowers yellow.

Oblong-leaved Triumfetta. Pl. 1 to 2 feet.

16 T. OBLONGA'TA (Link. enum. hort. berl. 2. p. 5.) leaves oblong, serrated, 5-nerved, covered with soft hairs; stem branched, villous towards the top; flowers terminal, crowded. ⊙. G. Native of Nipaul. Hairs brown, and bulbous at the base. Stipulas and bracteas linear, villous. Calyx hairy. Flowers yellow.

Oblongate-leaved Triumfetta. Fl. Aug. Sep. Clt. 1823. Pl. 2 to 3 feet.

17 T. Nipaule'nsis; leaves ovate, acuminated, 3-lobed and serrated, villous on both surfaces. ⊙. G. Native of Nipaul. T. ánnua, D. Don, prod. fl. nep. p. 227. Flowers yellow.

Nipaul Triumfetta. Pl. 1 to 3 feet.

18 T. A'NNUA (Lin. mant. 73.) leaves ovate, acuminated, toothed, undivided, smooth above, rather hairy on the nerves beneath; stipulas and peduncles smooth; calyxes acuminated. ⊙. S. Native of Java. Mill. fig. t. 298. Sims, bot. mag. t. 2296. T. I'ndica, Lam. dict. 3. p. 420? Leaves sometimes somewhat lobed. Peduncles axillary, 3-flowered. Flowers yellow. Fruit clothed with hooked prickles.

Annual Triumfetta. Fl. Aug. Sep. Clt. 1760. Pl. 2 feet.

19 T. SPICA'TA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 656.) leaves roundish, 3-lobed, somewhat cordate at the base, unequally serrated, pubescent above, but villous beneath; flowers disposed in interrupted spikes. ♄. S. Native of Java.

Spiked-flowered Triumfetta. Shrub 2 to 3 feet.

20 T. VILLOSIU'SCULA (Blum. bijdr. ex Schlecht. Linnæa. 1. p.

656.) leaves 5-nerved, roundish-ovate, 3-lobed, sharply and doubly serrated, with the lower serratures callose, rather villous above, but clothed with stellate tomentum beneath, upper leaves oblong, deeply serrated; peduncles 4-5, extra-axillary, usually 3-flowered; calyx apiculated, covered with stellate down; fruit pubescent, and covered with hooked bristles. ⊙. S. Native of Java. Flowers yellow.

Rather-villous Triumfetta. Pl. 2 to 3 feet.

21 T. trilocula'ris (Roxb. ex Horn. hort. hafn. suppl. 140.) leaves roundish-ovate, half-3-lobed, cordate at the base, coarsely serrated, acuminated, beset with stellate pili on both surfaces, lower serratures glandular, upper leaves ovate-oblong; calyx pubescent, apiculated; capsule 3-valved, 3-celled; prickles of capsule hooked; peduncles aggregate, opposite the leaves, 2-4-flowered. ♄. S. Native of the East Indies.

Three-celled-fruited Triumfetta. Fl. June, July. Clt. 1816. Shrub 2 to 3 feet.

22 T. se'pium (St. Hil. fl. bras. 1. p. 286.) leaves lanceolate, acuminated, serrated, pubescent above, and tomentose beneath; flowers decandrous; teeth of style and cells of ovary 3; fruit pilose, shortly echinated. ♄. S. Native of Brazil near Rio Janeiro in hedges. Lower teeth of leaves glandular. Peduncles commonly tern, opposite the leaves.

Hedge Triumfetta. Fl. Aug. Shrub 1 to 3 feet.

23 T. obscu'ra (St. Hil. fl. bras. 1. p. 286.) leaves ovate, subsinuated or obsoletely 3-lobed, short-acuminated, serrated, pubescent, membranous; flowers with 15 stamens; teeth of style, and cells of ovary 3; fruit hardly pilose, shortly echinated. ♄. S. Native of Brazil near Rio Janeiro. Lower serratures of leaves glandular. Peduncles short, 2-3, opposite the leaves, upper ones disposed in racemes.

Obscure Triumfetta. Fl. Aug. Shrub 1 to 2 feet.

24 T. abutiloi'des (St. Hil. fl. bras. 1. p. 287.) leaves somewhat 3-lobed or ovate, cordate, acuminated, serrated, velvety; flowers with 20 stamens; teeth of style and cells 2; fruit pilose, long-echinated. ♄. S. Native of Brazil in the province of Minas Geraes. Peduncles twin or tern, umbellately 3-flowered. Lower teeth of leaves glandular.

Abutilon-like Triumfetta. Fl. Aug. Shrub 1 to 3 feet.

25 T. tricu'spis (St. Hil. fl. bras. 1. p. 288.) upper leaves ovate or oblong, repand, the rest ovate 3-lobed, acuminated, serrated, velvety; flowers of 20 stamens; teeth of style and cells of ovary 3. ♄. S. Native of Brazil in the province of Minas Geraes, not far from Villa Rica. Peduncles as in the rest of the species. Lower teeth of leaves rather glandular, as in most of the species.

Three-pointed-leaved Triumfetta. Fl. July. Shrub 2 to 3 feet.

26 T. erioca'rpa (St. Hil. fl. bras. 1. p. 288.) upper leaves subovate, the rest cordate and bluntly 3-lobed, coarsely crenate-toothed, nearly smooth; flowers with 15 stamens; teeth of style and ovaries 2; fruit tomentose, shortly echinated. ⊙. S. Native of Brazil near Rio Janeiro. Peduncles 2-4, glomerate, 2-3-flowered, opposite the leaves. Lower serratures of leaves changed into discoid glands beneath.

Woolly-fruited Triumfetta. Pl. 1 foot.

27 T. angula'ta (Lam. dict. 3. p. 421. var. α.) leaves ovate, 5-nerved, angular at the apex, 3-lobed, acuminated, unequally toothed, rather villous beneath, with a glandular tooth on each side at the base; calyxes hispid, acuminated; fruit smoothish, echinated. ♄. S. Native of the East Indies.—Pluk. alm. t. 41. f. 5. Bartràmia, Lam. ill. t. 400. f. 2. Flowers yellow.

Angular-leaved Triumfetta. Fl. June, July. Clt. 1818. Shrub 3 feet.

28 T. pseu'do-angula'ta (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 656.) leaves roundish, half-3-lobed, rather cordate at the base, unequally toothed, pilose on both surfaces, lower teeth glandular; upper leaves ovate-oblong, undivided; calyxes pubescent, apiculate; prickles of capsule hooked and naked. ♄. S. Native of Java. Flowers yellow.

False-angled-leaved Triumfetta. Shrub 2 to 3 feet.

29 T. semitri'loba (Lin. mant. 73.) upper leaves ovate, acuminated, the rest subcordate, 3-lobed, serrate, pubescent on both surfaces, upper ones oblong, undivided; flowers with 30 stamens; calyx pubescent, a little pointed; teeth of style and cells of ovary 3; fruit smooth, echinated, with the bristles covered with retrograde hairs. ♄. S. Native of the West Indies. Flowers yellow, clustered. The leaves and tender buds, infused in water, yield a fine clear mucilage, from whence we may conclude this plant to be a good emollient. The bark is tough and strong, and serves for ropes, and other conveniences of that kind in the inland parts of Jamaica.

Half-three-lobed-leaved Triumfetta. Fl. July. Clt. 1773. Shrub 3 to 5 feet.

30 T. gla'bra (Rottl. ex Spreng. syst. 2. p. 450.) leaves roundish, cordate, acutely 3-lobed, smooth; racemes terminal, elongated; calyx hoary-pubescent; fruit hairy. ♄. S. Native of the East Indies. Flowers yellow.

Smooth Triumfetta. Shrub 2 to 3 feet.

31 T. Havanne'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 345.) leaves obovate, 3-lobed, membranaceous, serrated, and are as well as the branches pubescent; lateral lobes rounded, intermediate one acuminate. ♄. S. Native of Cuba near Havannah. Flowers yellow. Stamens 11. Fruit globose, echinate, 3-celled. Resembles *T. semitríloba*.

Havannah Triumfetta. Fl. June, July. Clt. 1823. Shrub 3 to 6 feet.

32 T. molli'ssima (H. B. et Kunth, nov. gen. amer. 5. p. 345. t. 488.) leaves ovate, cordate, 3-lobed, sharply and doubly serrated, soft and downy-pubescent above, hoary-pubescent beneath, middle lobe with a very long point. ♄. S. Native near Santa-Fe-de-Bogota. Flowers yellow. Stamens 20. Fruit globose, echinated, hoary.

Very-soft-leaved Triumfetta. Shrub 2 to 4 feet.

33 T. veluti'na (Vahl. symb. 3. p. 62.) leaves ovate, acuminate, somewhat angular, unequally serrated, velvety beneath, with the lower teeth glandular; flowers axillary; calyxes pubescent, a little acuminated; fruit echinated, rather hairy.—Native of the Mauritius, and of Guinea in the kingdom of Waree. Resembles *T. glandulòsa*. Stipulas ciliated.

Velvety-leaved Triumfetta. Shrub.

34 T. rhomboi'dea (Jacq. amer. 147. t. 90.) leaves rhomboidal, lower ones somewhat 5-lobed, middle ones somewhat 3-lobed, upper ones oblong, all callosely-serrated, velvety on both surfaces, and cuneated at the base; flowers numerous, axillary; calyx acuminated; fruit echinated, rather pilose. ♄. S. Native of the Caribbee islands, Peru, and Guinea. T. rhombeæfòlia, Swartz, prod. 76. T. rhomboídea, Lindl. coll. t. 29. Flowers yellow. Style tricuspidate at the apex.

Rhomb-like-leaved Triumfetta. Fl. Aug. Sep. Clt. 1818. Shrub 2 to 4 feet.

35 T. hi'rta (Vahl. symb. 3. p. 63.) leaves ovate, 3-lobed, smooth above, velvety beneath; panicle terminal, with forked hairy branches. ♄. S. Native of St. Martha in South America. Flowers yellow.

Hairy-panicled Triumfetta. Shrub 2 feet?

36 T. althæoi'des (Lam. dict. 3. p. 420.) leaves broad-ovate, undivided, acuminated, covered with soft tomentum on both surfaces, unequally serrate, lower serratures exserted, callosely-glandular; flowers axillary; calyxes downy, pointed; fruit echinated, with retrograde hairy bristles. ♄. S. Native of Cayenne. T. macrophýlla, Vahl. symb. 2. p. 34.

Var. β, subtríloba (D. C. prod. 1. p. 508.) leaves obsoletely 3-lobed, pubescent above. ♄. S. Native of New Andalusia near Caripe. T. althæoìdes, H. B. et Kunth, nov. gen. amer. 5. p. 343. Flowers yellow.

Hollyhock-like Triumfetta. Fl. Aug. Sep. Clt. 1820. Shrub 3 feet.

37 T. vesti'ta (Wall. mss. in Lin. soc. herb.) leaves ovate, undivided, coarsely crenate-serrated, villous, pale beneath; peduncles aggregate, 2-3-flowered, opposite the leaves. ♄. S. Native of Silhet. Petals yellow. The whole plant is villous.

Clothed Triumfetta. Shrub 2 to 4 feet.

38 T. acumina'ta (H. B. et Kunth, nov. gen. amer. 5. p. 343.) leaves ovate-oblong, cordate, acuminated, doubly serrated, pubescent above, covered with soft tomentum beneath; branches pilose; flowers axillary. ♄. S. Native of South America in New Granada near Mariquito. Stamens about 20. Flowers yellow. Fruit echinated, downy.

Acuminate-leaved Triumfetta. Shrub 2 to 3 feet.

39 T. grandiflòra (Vahl. ecl. 2. p. 34.) leaves ovate, rather cordate, acuminated, hairy, unequally serrate, lower teeth glandular beneath; calyxes smooth, pointed; fruit echinated, with glabrous bristles. ♄. S. Native of the Caribbee Islands. Flowers yellow, in axillary umbels.

Great-flowered Triumfetta. Fl. June. Clt. 1810. Shrub 3 ft.

40 T. nemora'lis (St. Hil. fl. bras. 1. p. 284. t. 56. A.) leaves ovate-lanceolate or lanceolate, long-acuminated, serrated, nearly smooth; flowers with 30 stamens; teeth of style and cells of ovary 3; fruit smooth. ♄. S. Native of Brazil in the province of Minas Geraes. Leaves with distant glandular serratures at the base. Peduncles usually twin, or disposed in compound racemes at the tops of the branches.

Grove Triumfetta. Fl. April. Shrub 6 to 7 feet.

41 T. longico'ma (St. Hil. fl. bras. 1. p. 285. t. 56. B.) leaves cordate or obliquely ovate, acuminated, serrated, hardly pubescent; flowers with 25 stamens; teeth of style and cells of ovary 5; fruit smooth, echinated. ♄. S. Native of Brazil in the province of Rio Janeiro. Leaves 3-nerved at the base. Peduncles 1, 2, or 3 together, lower ones opposite the leaves, upper ones disposed in compound terminal racemes.

Long-haired-capsuled Triumfetta. Shrub 2 to 4 feet.

42 T. polya'ndra (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 508.) leaves ovate, somewhat cordate, acuminated, rather hairy, serrated; calyxes smooth, acuminated; fruit echinated with long hairy bristles. ♄. S. Native of Mexico. Flowers large, yellow. Genitals seated on a thick stipe. Fruit 5-celled. Resembles *T. grandiflòra*.

Polyandrous Triumfetta. Shrub 2 to 3 feet.

43 T. obova'ta (Deppe in Schlecht. Linnæa. vol. 5. p. 56.) leaves obovate, rather cordate at the base, and acutish at the top, with a small acumen, serrated, densely tomentose beneath, but rather rough above from hairs; flowers polyandrous; fruit large, covered with prickles or strong hairs, these are hardly hooked. ♄. S. Native of Mexico. Flowers large, yellow. Fruit the size of a cherry.

Obovate-leaved Triumfetta. Shrub 4 feet.

† *Species not sufficiently known.*

44 T. procu'mbens (Forst. prod. no. 204.) leaves roundish-cordate, somewhat 3-lobed, tomentose; stem procumbent.—Native of the Society islands. Flowers yellow.

Procumbent Triumfetta. Shrub procumbent.

45 T. I'ndica (Lam. dict. 3. p. 420.) leaves ovate rhomboidal, undivided, hoary beneath; fruit axillary, with naked prickles. ♄. S. Native of the East Indies. Flowers yellow. Perhaps this is the same as *T. ánnua*?

Indian Triumfetta. Shrub 3 feet.

46 T. oxyphy'lla (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 508.) leaves cordate, acuminated, serrated, villous; branches of panicle somewhat forked; sepals linear, acuminated, twice as long as the oblong petals. ♃. S. Native of New Spain on mountains. Flowers yellow.

Sharp-leaved Triumfetta. Pl. 2 feet.

47 T. obli'qua (Roth. nov. spec. p. 224.) leaves obliquely cordate-oblong, acuminated, undivided, unequally serrated, scabrous from starry hairs above, clothed with soft tomentum beneath; prickles of capsule ciliated. ♄. S. Native of? Flowers complete, yellow.

Oblique-leaved Triumfetta. Shrub 2 to 3 feet.

N. B. *Triumfétta Bartràmia* of Lin. spec. p. 638. remains undetermined, as all the synonymes given to it belong to different species. It is probably a species of *Urèna*.

Cult. All the species are uninteresting weed-like plants. They thrive best in a mixture of loam and peat, and cuttings will root readily in sand under a hand-glass, in heat, but as most of the species ripen seeds in abundance this will be unnecessary.

VIII. PO'RPA (from πορπη, *porpe*, a ring; in allusion to the ring round the stamens.) Blum. bijdr. ex Schlecht. Linnæa. 1. p. 659.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-parted, deciduous. Petals 5, tomentose on the inside at the base, a little shorter than the calyx. Stamens 26-30, free, girded by a membranous rim. Ovary hairy, 8-celled; cells 1-seeded. Capsule globose. A genus allied to *Triumfétta*.

1 P. re'pens (Blum. l. c.) ♄. S. Native of Java. A suffruticose plant, with stalked, 3-lobed, toothed, somewhat cordate, scabrous leaves, opposite lanceolate stipulas, and solitary, usually 3-flowered peduncles, which are opposite the leaves.

Creeping Porpa. Shrub trailing.

Cult. This plant should be propagated and cultivated in the same manner as that recommended for *Triumfétta*.

IX. GRE'WIA (in honour of Nehemiah Grew, M.D. F.R.S. an English physician and vegetable physiologist, died 1711.). Juss. ann. 4. p. 82. D. C. prod. 1. p. 508. Lin. gen.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 coriaceous sepals, which are coloured on the inside. Petals 5, with a gland or scale on the inside at the base of each, inserted in the stipe-formed torus. Stamens numerous, rising from the apex of the torus, free; anthers roundish. Style 1. Stigma 4-lobed. Drupe 4-lobed, containing from 1 to 4 nuts. Nuts 2-celled, 2-seeded, or from abortion 1-seeded. Albumen present. Embryo erect. Spreading shrubs with simple serrated leaves, usually resembling those of the elm, with solitary or aggregate few-flowered peduncles. The flowers are downy on the outside, but smooth and usually purple on the inside.

§ 1. *Petals very short or wanting. Leaves 3 rarely 5-nerved. Sepals 1-nerved.*

1 G. ape'tala (Juss. ann. 4. p. 93. t. 49. f. 3.) leaves large, 3-nerved, obovate, cuneated at the base, crenulate, roughish; peduncles usually solitary, branched, racemose; flowers apetalous, 4-cleft. ♄. S. Native of Java.

Apetalous Grewia. Shrub 6 feet.

2 G. cauda'ta (Wall. in herb. soc. Lin.) leaves smooth, oblong, ending in a long acumen, 3-nerved at the base; peduncles axillary, 3-flowered, twin or solitary, about the length of the petioles. ♄. S. Native of Pulo-Penang. G. heteroclìta, Roxb. hort. beng. p. 92. ex Wall. Calyx valvate, not nerved. Petals not evident.

Tailed-leaved Grewia. Shrub 6 feet.

3 G. multiflòra (Juss. ann. 4. p. 89. t. 47. f. 1.) leaves

large, 3-nerved, ovate-lanceolate, serrated, quite smooth; peduncles aggregate, 3-4-flowered. ♄. S. Native of the Philippine Islands.

Many-flowered Grewia. Shrub 6 feet.

4 G. GUAZUMÆFÒLIA (Juss. ann. 4. p. 89. t. 48. f. 3.) leaves large, 3-nerved, elliptic, acuminate, smooth above, tomentose beneath, crenate-toothed, lower teeth glandular; peduncles solitary, 2-3-flowered. ♄. S. Native of Java. G. oblongifòlia, Blume.

Guazuma-leaved Grewia. Shrub 6 feet.

5 G. TOMENTÒSA (Juss. ann. 4. p. 89. t. 49. f. 1.) leaves large, 3-nerved, ovate-lanceolate, oblique at the base, tomentose on both surfaces, unequally toothed; peduncles crowded, short, many-flowered; petals very minute. ♄. S. Native of Java.

Tomentose-leaved Grewia. Clt. 1820. Shrub 6 feet.

6 G. CELTIDIFÒLIA (Juss. ann. 4. p. 93.) leaves large, 5-nerved, ovate-oblong, pilose on the nerves above, tomentose beneath; peduncles 2-3-flowered. ♄. S. Native of Java. Flowers like those of *G. tomentòsa*.

Celtis-leaved Grewia. Shrub 6 feet.

7 G. HIRSU'TA (Vahl. symb. 1. p. 34.) leaves 3-nerved, ovate-lanceolate, acuminate, rounded at the base and oblique, soft and villous on both surfaces; peduncles very short, usually tern or solitary, 3-flowered; petals ciliated. ♄. S. Native of Java.

Hairy Grewia. Clt. 1816. Shrub 8 feet.

8 G. HELECTERIFÒLIA (Wall. mss. in Lin. soc. herb.) leaves lanceolate, tapering to the apex, acute, finely serrated, 3-nerved at the base, tomentose beneath; peduncles short, usually twin, 2-3-flowered, about the length of the petioles. ♄. S. Native of the East Indies. The whole plant villous or tomentose, except the upper surfaces of the adult leaves. G. hirsùta, Roxb. hort. beng. p. 42.

Helecteres-leaved Grewia. Shrub.

9 G. BRACTEA'TA (Roth. nov. spec. 243.) leaves elliptic-lanceolate, bluntly serrated, smooth, nerves, veins, and branches clothed with rusty hairs; peduncles solitary, axillary, 3-flowered; flowers almost sessile, involucrated at the base; petals wanting. ♄. S. Native of the East Indies. Perhaps a species of *Microcos*.

Bracteate-flowered Grewia. Clt. 1820. Shrub 10 feet.

10 G. GLA'BRA (Blum. bijdr. ex Schlecht. Linnæa. 1. p 657.) leaves oblong-lanceolate, 3-nerved at the base, acuminated, obtusely serrated, smoothish; lower serratures glandular; peduncles axillary, solitary or twin, 2-3-flowered, longer than the petioles; pedicels bracteate at the base; petals very short, villously ciliated below. ♄. S. Native of Java. Like *G. bracteàta*.

Smooth Grewia. Shrub 6 to 8 feet.

§ 2. *Petals oblong. Sepals 3-nerved. Leaves 3-nerved at the base and feather-nerved in the middle.*

11 G. MALLOCÓCCA (Lin. fil. suppl. 409.) leaves cordate, ovate-oblong, crenated. scabrous; pedicels axillary, 3-flowered. ♄. S. Native of the island of Tongatabu. Mallocócca crenàta, Forst. gen. t. 39. Flowers pale-purple.

Soft-berried Grewia. Fl. Aug. Sept. Clt. 1792. Sh. 6 ft.

12 G. OPPOSITIFÒLIA (Roxb. hort. beng. p. 42. D. C. prod. 1. p. 227.) leaves ovate, acuminated, serrated, 3-nerved, scabrous, tomentose beneath as well as the branches; peduncles solitary or twin, 3-4-flowered, opposite the leaves. ♄. G. Native of Nipaul. Flowers purple inside.

Opposite-leaved Grewia, Shrub 6 feet.

13 G. UMBELLA'TA (Roxb. hort. beng. p. 42.) leaves elliptic, a little crenated, acuminated, quite smooth; peduncles umbellate, axillary, twice the length of the petioles. ♄. S. Native of the East Indies in Sumatra. Genitals bearing much longer stipes than the other species.

Umbellate-flowered Grewia. Shrub 6 feet.

14 G. ODORA'TA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 658.) leaves 3-nerved at the base, ovate or elliptic-oblong, rather scabrous beneath, unequally-crenated, with the lower ones glandular; peduncles axillary, solitary or twin, 3-5-flowered; pedicels umbellate; sepals 3-nerved. ♄. S. Native of Java.

Sweet-scented Grewia. Shrub 6 to 8 feet.

15 G. SEPIA'RIA (Roxb. hort. beng. p. 42.) leaves smooth, oblong-lanceolate, acuminated, serrated, 3-nerved at the base, with the midrib below rather hispid, as well as the petioles and young branches; peduncles axillary, umbellate, 3-4-flowered, 3-times longer than the petiole. ♄. S. Native of Bengal.

Hedge Grewia. Shrub 8 feet.

§ 3. *Petals oblong. Sepals nerveless or 1-nerved. Leaves 3-nerved at the base and feather-nerved in the centre.*

16 G. EXCE'LSA (Vahl. symb. 3. p. 35.) leaves oblong, smooth above, covered with hoary tomentum beneath, obtusely serrated; peduncles solitary, 1-3-flowered; petals shorter than the calyx. ♄. S. Native of Egypt and Arabia. Chadàra arbòrea, Forsk. descr. p. 105.

Tall Grewia. Clt. 1816. Tree 20 feet.

Var. β, verrucòsa (Juss. ann. 2. p. 90.) leaves warted above, repand. ♄. S. Native of Java. The warts on the leaves are perhaps formed from a species of *Eríneum*.

Tall Grewia. Clt. 1816. Tree 20 feet.

17 G. BIFLÒRA; branched; leaves alternate, ovate-lanceolate, subcordate at the base, acuminated, smooth, serrated, 3-nerved at the base; petioles and branches hispid; peduncles axillary and terminal, short, solitary or twin, 2-3-flowered; calyx hispid. ♄. S. Native of Guinea. Flowers yellow.

Two-flowered Grewia. Shrub 4 feet.

18 G. BI'COLOR (Juss. ann. 4. p. 90. t. 50. f. 2.) leaves ovate-oblong, sharply serrulated, smooth above, hoary beneath; pedicels solitary, 1-3-flowered. ♄. S. Native of Guinea. Petals a little shorter than the sepals, but equal with the stamens. Fruit smooth, one-half smaller than a common pea.

Two-coloured-leaved Grewia. Clt. 1818. Shrub 6 feet.

19 G. Ro'THII (D. C. prod. 1. p. 509.) leaves ovate, oblong-lanceolate, acuminated, sharply serrated at the top, smooth above, hoary beneath; stipulas lanceolate, longer than the petioles; peduncles usually tern and 3-flowered, bracteate; petals about half the length of the stamens. ♄. S. Native of the East Indies. G. bícolor, Roth. nov. spec. p. 240. but not of Juss.

Roth's Grewia. Clt. 1819. Shrub 6 feet.

20 G. SALVIFÒLIA (Roth. nov. spec. p. 239.) leaves oblong-ovate, obtuse, finely crenulated, rather entire at the base, with pubescent dots above, but clothed with white down beneath; peduncles solitary, 2-3-flowered. ♄. S. Native of the East Indies. Ovaries tomentose. Resembles *G. affìnis*. G. salvifòlia of Lin. is a species of *Alángium*.

Sage-leaved Grewia. Fl. July, Sept. Clt. 1818. Sh. 6 ft.

21 G. ROXBU'RGHII; leaves lanceolate, acuminated, serrated, villous beneath, on very short petioles; peduncles axillary, 2-3-flowered, rather longer than the petioles. ♄. S. Native of Coromandel. G. salvifòlia, Roxb. hort. beng. p. 93. ex Wall. The whole plant is villous, except the upper surface of the adult leaves.

Roxburgh's Grewia. Shrub 6 to 8 feet.

22 G. OBLONGIFÒLIA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 657.) leaves 3-nerved, oblong, acuminated, obtuse at the base, toothed, with the lower teeth glandular, pubescent above and villous beneath; peduncles axillary, solitary, usually 3-flowered, longer than the petioles; pedicels bibracteolate at the

base; petals very minute, villously ciliated. ♄. S. Native of Java.

Var. β; leaves elliptical-oblong; peduncles twin.

Oblong-leaved Grewia. Shrub 6 feet.

23 G. FLA'VA (D. C. cat. hort. monsp. p. 113.) leaves oval, cuneiform, very blunt, crenulate, hoary pubescent on both surfaces; pedicels 1-flowered; petals bifid, shorter than the calyx. ♄. G. Native of the Cape of Good Hope beyond the Orange River. Flowers yellow.

Yellow-flowered Grewia. Clt. 1819. Shrub 2 feet.

24 G. CUNEIFÒLIA (Juss. ann. 4. p. 90. t. 49. f. 2.) leaves small, wedge-shaped, thickish, smooth, rounded at the apex and crenated, entire at the base; sepals narrow, a little longer than the petals; peduncles solitary, 2-flowered; sepals narrow, exceeding the length of the petals. ♄. S. Native of Madagascar.

Wedge-leaved Grewia. Shrub 6 feet.

25 G. BÍLOBA; leaves ovate, acuminated, coarsely serrated, 3-nerved at the base, smooth above but pubescent beneath; peduncles opposite the leaves, umbellate, about equal in length to the petioles; fruit 2-lobed. ♄. G. Native of China. (v. s. in herb. Lamb.)

Two-lobed-fruited Grewia. Shrub 6 feet.

26 G. DI'DYMA (Roxb. hort. beng. p. 93.) leaves smooth, oblong-lanceolate, 3-nerved at the base, serrated, ending in a long, serrated acumen, cuneated at the base; pedicel 1-flowered? 3-times longer than the petiole; fruit didymous. ♄. S. Native of the East Indies. G. dispérma, Roth.

Didymous-fruited Grewia. Shrub.

27 G. NI'TIDA (Juss. ann. 4. p. 90. t. 47. f. 2.) leaves ovate-oblong, crenulated, smooth, shining; peduncles solitary, short, 1-2-flowered; sepals and petals ovate. ♄. G. Native of China.

Shining-leaved Grewia. Shrub 6 feet.

28 G. MEXICA'NA (D. C. prod. 1. p. 510.) leaves ovate-oblong, somewhat serrulated, smooth above, velvety beneath; peduncles many-flowered, racemose; petals equal in length with the calyx. ♄. S. Native of New Spain. Flower-bud obovate-globose, velvety. This is the only American species.

Mexican Grewia. Shrub 6 feet.

29 G. OVALIFÒLIA (Juss. ann. 4. p. 90.) leaves oval, crenulated, smooth, tapering to the apex; peduncles 2-3-flowered, solitary, or somewhat racemose at the tops of the branches; sepals narrow, twice as long as the petals. ♄. S. Native of Coromandel.

Oval-leaved Grewia. Fl. July, Aug. Clt. 1818. Sh. 6 ft.

30 G. LATERIFLÒRA; branches erect; leaves alternate, obovate, acuminated, distantly toothed, 3-nerved at the base, pale on the under surface, smooth; peduncles axillary, 3-4-flowered, longer than the petioles. ♄. S. Native of Sierra Leone. (v. s. herb. Lamb.)

Side-flowered Grewia. Shrub 6 feet.

31 G. MACROPHY'LLA; leaves large, oblong, acuminated, 3-nerved at the base, villous beneath as well as on the midrib above, entire; peduncles axillary, solitary or twin, sometimes bifid, corymbose; stem very villous. ♄. S. Native of the East Indies. Leaves a span long and 4-5 inches broad. Petals apparently linear.

Long-leaved Grewia. Shrub 10 feet.

32 G. ORIENTA'LIS (Lin. spec. ed. 1. p. 964.) leaves ovate, oblong, crenated, roughish beneath, bluntly acuminated; peduncles axillary, 3-flowered; sepals narrow, thrice as long as the petals, but equal in length with the stamens. ♄. S. Native of the Coromandel coast.—Rheed. mal. 5. t. 46.—Pluk. alm. t. 50. f. 4. Flowers white on the inside and green on the outside. Stamens white, tipped with yellow.

Oriental Grewia. Fl. July, Aug. Clt. 1767. Shrub 6 feet.

33 G. PUBE'SCENS (Beauv. fl. d'ow. 2. p. 75. t. 108.) leaves ovate-lanceolate, acuminated, crenated, smooth above, but pubescent beneath, 3-nerved at the base; peduncles 2-3-flowered, terminal, and axillary. ♄. S. Native of Guinea in the kingdoms of Benin and Waree as well as Sierra Leone. Flowers red. The whole plant is villous, except the upper surface of the leaves.

Pubescent Grewia. Shrub 6 feet.

34 G. COLUMNA'RIS (Smith, in Rees' cyclop. v. 17. no. 5.) leaves ovate-oblong, crenated, scabrous on both surfaces; peduncles 3-flowered; genitals on a very villous elongated stipe. ♄. S. Native of the East Indies. Stipulas awl-shaped, equal in length with the petioles.

Columnar-stiped Grewia. Shrub 6 feet.

35 G. PILÒSA (Lam. dict. 3. p. 43. exclusive of the synonymes,) leaves ovate, thickish and roughish, crenate; peduncles 2-6-flowered, axillary, and terminal; fruit hairy. ♄. S. Native of the East Indies. Roxb. hort. beng. p. 42. G. orientàlis, Gært. Vahl. and Smith in Rees' cyclop. no. 4. Flowers yellow.

Pilose Grewia. Clt. 1804. Shrub 6 feet.

36 G. GLANDULÒSA (Vahl. symb. 1. p. 34.) leaves large, ovate-lanceolate, acuminate, smooth on both surfaces, crenulated, the lower notches glandular; peduncles axillary, somewhat 3-flowered, shorter than the petioles. ♄. S. Native of the Mauritius. Juss. ann. 4. t. 48. f. 1.

Glandular-leaved Grewia. Shrub 6 feet.

37 G. SERRULA'TA (D. C. prod. 1. p. 510.) leaves ovate-oblong, acuminated, smooth on both surfaces, serrulated, the lower teeth glandular; peduncles axillary, straight, usually 3-flowered, longer than the petioles. ♄. S. Native of Bengal.

Scrrulated-leaved Grewia. Shrub 10 feet.

38 G. LÆVIGA'TA (Vahl. symb. 1. p. 34.) leaves elliptical, acuminated, smooth on both surfaces, serrated at top, quite entire at the base; peduncles long, 3-flowered. ♄. S. Native of the East Indies. Smith, in Rees' cycl. no. 7. G. Damìne, Gært.

Smooth-leaved Grewia. Shrub 6 feet.

39 G. HU'MILIS (Wall. mss. in herb. soc. Lin.) leaves small, oblong, or ovate-oblong, acute or obtuse, rather serrated, wrinkled above, tomentose beneath as well as the branches, 3-nerved at the base, on very short petioles; pedicel apparently 1-flowered, longer than the petioles. ♄. S. Native of the East Indies at the Irawaddi.

Humble Grewia. Shrub 2 feet.

40 G. MO'LLIS (Juss. ann. 4. p. 91.) leaves ovate-lanceolate, serrate-toothed, soft, tomentose beneath; peduncles almost solitary, usually 3-flowered, longer than the petioles. ♄. S. Native of Guinea.

Soft-leaved Grewia. Shrub 6 feet.

41 G. FLAVE'SCENS (Juss. ann. 4. p. 91.) leaves ovate-oblong, acute, unequally serrated, scabrous on both surfaces, with starry hairs; stipulas linear, longer than the petioles; peduncles generally solitary, 3-flowered, length of petioles. ♄. S. Native of the East Indies. Petals yellowish.

Yellowish-petalled Grewia. Shrub 6 feet.

42 G. ACUMINA'TA (Juss. ann. 4. p. 91. t. 48. f. 2.) leaves large, ovate-oblong, abruptly acuminate, crenulated, rounded at the base, smooth; peduncles long, usually solitary, 2-3-flowered. ♄. S. Native of Java. Sepals an inch long, thrice as long as the petals.

Acuminate-leaved Grewia. Shrub 6 feet.

43 G. CARPINIFÒLIA (Juss. ann. 4. p. 91. t. 51. f. 1.) leaves ovate, serrated, cordate at the base, acute or obtuse, roughish beneath; peduncles short, 3-flowered. ♄. S. Native of Guinea. Beauv. fl. d'ow. 1. t. 30. Sepals narrow, equal in length with the stamens, but longer than the petals. Flowers purple.

Var. β, rhamnifòlia (Roth. nov. spec. p. 244.) leaves ovate, scarcely cordate.

Hornbeam-leaved Grewia. Clt. 1823. Shrub 10 feet.

44 G. COMMUTA'TA (D. C. prod. 1. p. 511.) leaves oblong or ovate, acuminated, acute or obtuse, somewhat cordate at the base, unequally serrated, clothed with pale and rufescent pubescence above, tomentose beneath; peduncles axillary, umbellate, 3 times longer than the petioles, upper ones length of leaves. ♄. S. Native of the East Indies. G. carpinifòlia, Roth. nov. spec. 245. but not of Juss. Flowers purple inside.

Changed Grewia. Shrub 6 feet.

45 G. MEGALOCA'RPA (Beauv. fl. d'ow. 2. p. 69. t. 102.) leaves oblong, bluntly acuminated, serrated, smooth; peduncles 1-2-flowered; fruct glabrous, 4-lobed. ♄. S. Native of Guinea. Fruit black and edible, at first bitter, but afterwards becoming sweet. Flowers dark purple.

Large-fruited Grewia. Shrub 10 feet.

46 G. RUGÒSA; leaves large, roundish-oblong, pubescent and very veiny beneath, smoothish and wrinkled, acute or rounded at the apex, coarsely and unequally toothed, 3-nerved at the base. ♄. S. Native of the East Indies. G. oblìqua, Roxb. hort. beng. p. 92.

Wrinkled-leaved Grewia. Shrub.

47 G. OBLI'QUA (Juss. ann. 4. p. 92.) leaves lanceolate, oblique, toothed, scabrous on both surfaces from stellate hairs; stipulas linear, equal in length with the petioles; peduncles solitary, 3-flowered. ♄. S. Native of the East Indies. Flowers purple inside.

Oblique-leaved Grewia. Shrub 6 feet.

48 G. OCCIDENTA'LIS (Lin. spec. ed. 1. p. 964.) leaves roundish-ovate, obtuse, toothed, smooth; peduncles solitary, 1-flowered. ♄. G. Native of the Cape of Good Hope. Seba, thes. 1. t. 26. f. 3. Delaum. herb. amat. t. 95. Curt. bot. mag. t. 422. Leaves small, like those of elm. Sepals equal in length to the petals, a little longer than the stamens. Flowers purple.

Western Grewia. Fl. July, Sept. Clt. 1690. Shrub 10 ft.

§ 4. *Petals oblong. Leaves 5-7-nerved.*

49 G. POPULIFÒLIA (Vahl. symb. 1. p. 33.) leaves small, orbicular, unequally and bluntly crenate-toothed, smooth above, pubescent beneath; peduncles long, solitary, 1-flowered. ♄. G. Native of Egypt and Arabia. Chadàra tènax, Forsk. descr. 105, G. Chadàra, Lam. dict. 3. p. 44. Leaves hanging down like those of *Pópulus trémula*.

Poplar-leaved Grewia. Shrub.

50 G. BETULÆFÒLIA (Juss. ann. 4. p. 92. t. 50. f. 1.) leaves small, cordate, serrate, somewhat villous; peduncles long, solitary, 1-flowered. ♄. S. Native of Senegal and other parts of Guinea. Flowers purple. This is probably only a variety of *G. populifòlia*.

Birch-leaved Grewia. Shrub 6 feet.

51 G. ROTUNDIFÒLIA (Juss. ann. 4. p. 92. t. 50. f. 3.) leaves small, round, crenulated, rather white from down; peduncles usually 2-3 together, 2-5-flowered, longer than the petioles. ♄. S. Native on the Coromandel coast. Leaves like those of *Bétula pùmila*, almost sessile. G. orbiculàta, Roth. nov. spec. 247. Flowers purple.

Round-leaved Grewia. Shrub 4 feet.

52 G. PU'MILA (Hamilt. mss. in D. Don, prod. fl. nep. p. 227.) leaves roundish, 5-nerved, serrated, and are villous as well as the branches; peduncles axillary, solitary, twin, or tern, 3-flowered. ♄. G. Native of Nipaul at a village called Bassaria. G. nàna, Wall. mss. in herb. soc. Lin. Flowers small, purplish.

Dwarf Grewia. Fl. Mar. Shrub 1 foot.

53 G. ASIA'TICA (Lin. mant. 122.) leaves cordate, roundish, acute, unequally serrate, smooth above and hoary beneath, on short petioles; peduncles 2-3 together, 2-3-flowered, twice or thrice the length of the petioles. ♄. S. Native of the Coromandel coast and the Mauritius. Sonn. voy. 2. t. 138. Leaves like those of *Tília argéntea*. Flowers small. Berries small, red, and acid.

Asiatic Grewia. Fl. Jul. Aug. Clt. 1792. Shrub 12 feet.

54 G. SCLEROPHY'LLA (Roxb. hort. beng. p. 92.) leaves large, roundish, obtuse, wrinkled, unequally toothed, smooth above and villous beneath; peduncles axillary, 2-flowered, rather longer than the petioles. ♄. S. Native of Saharimpoor. Leaves usually rounded at the apex, but sometimes with a point, 3-5-nerved at the base. Flowers rather large.

Hard-leaved Grewia. Tree 20 feet.

55 G. SUBINÆQUA'LIS (D. C. prod. 1. p. 511.) leaves orbicular, oblique at the base, with 5-7 palmate nerves, acuminated at the apex, serrate, pubescent; peduncles 2-3 together, 2-3-flowered, longer than the petioles. ♄. S. Native of the East Indies. G. arbòrea, Roth. nov. spec. 247. but not of Forsk.

Almost-equal-leaved Grewia. Tree 15 feet.

56 G. INÆQUA'LIS (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 657.) leaves usually 5-nerved at the base, ovate-oblong, acuminated, somewhat cordate at the base, unequally and obtusely serrated, covered with stellate pubescence above, but with white tomentum beneath; peduncles 2-4, axillary, 2-6-flowered, umbellate, with the pedicels bracteate at the base; petals oblong, shorter than the calyx. ♄. S. Native of Java.

Unequal-leaved Grewia. Shrub 6 to 10 feet.

57 G. ARBÒREA (Roxb. hort. beng. 92.) leaves ovate, subcordate, obtusely serrated, covered with stellate pubescence on both surfaces; peduncles aggregate, elongated, axillary, umbellately-panicled. ♄. S. Native of the East Indies. Leaves 5-nerved at the base.

Tree Grewia. Tree 20 feet.

58 G. VILLÒSA (Roth. nov. spec. 248.) leaves roundish-ovate, with a short acumen, somewhat cordate at the base, doubly serrate, beset with starry hairs above, and with starry greyish down beneath, rufous on both surfaces; peduncles crowded together, 1-flowered, shorter than the petioles. ♄. S. Native of the East Indies. Resembles *G. subinæquàlis*.

Villous Grewia. Fl. July, Sept. Clt. 1816. Shrub 6 feet.

59 G. ORBICULA'RIS (Lamb. herb.) leaves roundish-ovate, hoary on both surfaces, rather serrulated; peduncles axillary, solitary, 3-flowered. ♄. S. Native of the East Indies.

Orbicular-leaved Grewia. Shrub 10 feet.

60 G. ABUTILIFÒLIA (Juss. ann. 4. p. 92.) leaves broad-cordate, sinuately-angular at the apex, unequally-toothed, scabrous above, somewhat tomentose beneath; peduncles 2-3 together, each bearing 3 flowers, much shorter than the petioles. ♄. S. Native of Java. G. arbutifòlia, Pers. no. 31. Resembles *G. áspera*.

Mulberry-leaved Grewia. Shrub 12 feet.

61 G. A'SPERA (Roth. nov. spec. 245.) leaves ovate-roundish, acuminated, blunt at the base, unequally serrated, rough on both surfaces from starry hairs; pedicels in threes, 1-flowered, shorter than the petioles. ♄. S. Native of the East Indies. Flowers purple? G. abutifòlia, Wall. in herb. Lin. soc. but not of Juss.

Rough-leaved Grewia. Shrub 8 feet.

62 G. TILIÆFÒLIA (Vahl. symb. 1. p. 35.) leaves roundish, cordate, smooth, bluntly serrate; peduncles 2-3 together, each bearing 4 flowers, shorter than the petioles. ♄. S. Native of the East Indies and Ceylon. Microcos lateriflòra, Lin. spec. 734. G. arbòrea, Roxb. ex Willd. nov. act. nat. cur. 1813. p. 205.

Lime-tree-leaved Grewia. Clt. 1812. Tree 12 feet.

63 G. SA'PIDA (Roxb. hort. beng. p. 42.) leaves oval, 5-

nerved, obtuse at both ends, coarsely toothed, smoothish; peduncles 3 together, each bearing 3 flowers, 4-times longer than the petioles. ♄. S. Native of Bengal. Fruit eatable.

Good-tasted Grewia. Shrub 6 feet.

64 G. orbicula'ta (Rottl. ex Willd. in nov. spec. act. nat. cur. 1813. p. 205.) leaves roundish-cordate, scabrous, downy beneath, ciliary-serrated; peduncles umbellate, shorter than the petioles. ♄. S. Native of the East Indies. G. villòsa, Willd. l. c. and Smith in Rees' cycl. vol. 17. no. 13.

Orbiculate-leaved Grewia. Shrub 6 feet.

65 G.? therebinthina'cea (D. C. cat. hort. monsp. p. 114.) leaves 5-nerved, cordate, acuminated, toothed, rarely 3-lobed, clothed with soft villi; petioles compressed; flowers racemose; pedicels aggregate. ♄. S. Native of? Branchlets opposite the leaves in flower-bearing branches. Leaves when bruised smelling of *Pelargònium*. Fruit unknown. This plant is sometimes to be found in gardens under the name of *Heliocárpus*, and it is probably a species of that genus with a 4-celled ovary.

Turpentine-scented Grewia. Clt. 1820. Shrub 6 feet.

66 G. erioca'rpa (Juss. ann. 4. p. 93.) leaves ovate, 5-nerved, bluntly serrate, tomentose beneath; peduncles 1-2 together, usually 3-flowered; petals very narrow, not glandular; torus not elongated. ♄. S. Native of Java.

Woolly-fruited Grewia. Shrub.

67 G. dispe'rma (Rottl. ex Spreng. syst. 2. p. 579.) leaves oblong-lanceolate, tapering to both ends, serrate, triple-nerved; peduncles solitary, 3-flowered; petals very short. ♄. S. Native of the East Indies.

Two-seeded Grewia. Shrub 6 feet.

† *Species not sufficiently known.*

68 G. veluti'na (Vahl. symb. 1. p. 35.) leaves oval, very soft on both surfaces, hoary beneath, bluntly serrate, oblique at the base; peduncles 2-3 together, very short, each bearing 3 flowers. ♄. G. Native of Arabia. Chadàra velutìna, Forsk. descr. 106. Flowers smaller than those of *G. Asiática*.

Velvety-leaved Grewia. Shrub.

69 G. obtusifòlia (Willd. enum. 566.) leaves oblong-elliptic, blunt at both ends, hairy, acutely and unequally toothed. ♄. S. Native of the Cape of Good Hope. Flowers purple?

Obtuse-leaved Grewia. Shrub 6 feet.

70 G. Africa'na (Mill. dict. no. 2.) leaves ovate-lanceolate, serrate. ♄. S. Native of Senegal.

African Grewia. Shrub 6 feet.

71 G. echinula'ta (Del. in Guilliaud. voy. à Meroé ex Bull. scien. nat. June, 1827. p. 256.) leaves somewhat orbicular, cordate; peduncles extra-axillary; fruit umbellate, globose, depressed, hispid, warted, containing 4, 3-seeded nuts. ♄. G. Native of the north of Africa at Meroe.

Echinated-fruited Grewia. Shrub.

† The names of species extracted from Roxburgh's Hortus Calcutensis, p. 42 and 92. but these are probably identical with some of those described above, viz. *G. polýgama, pedicellàta, lanceæfòlia*, Roxb.

Cult. All the species of *Grèwia* thrive well in a mixture of loam and peat, and cuttings will root in sand, under a bell-glass; those of the stove species in heat.

X. MI'CROCOS (from μικρος, *micros*, small, κοκκος, *koccos*, a berry). Burm. thes. zeyl. p. 159. Lin. gen. 267. Gært. fruct. t. 57.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 sepals. Petals 5, emarginate, without any scale or gland on the inside at the base as in *Grèwia*. Stamens numerous, inserted on the top of the torus, free; anthers roundish. Style 1, crowned by a bluntish stigma. Drupe roundish, containing a nut of 3 cells, each filled with a solitary kernel. Albumen none. Shrubs with the habit of *Grèwia*, but the inflorescence is terminal and panicled, not axillary as in that genus. It also differs particularly in the involucral-bracteas; there are generally 3 flowers together; these are surrounded by 3 trifid bracteas, within which are found 3 smaller linear ones, as well as cut ones at the bottom of the branches of the panicle.

1 M. panicula'ta (Lin. spec. 733.) leaves ovate-oblong, acuminated, 3-nerved, smooth, slightly serrated; panicle terminal, villous, with 2 or 3 flowers together within a 7-leaved involucrum; stipulas and bracteas usually bifid or trifid. ♄. S. Native of the East Indies. Grèwia mícrocos, Lin. syst. ed. 12. vol. 2. p. 602. Gréwia ulmifòlia, Roxb. hort. beng. p. 42. Flowers reddish.

Paniculate-flowered Microcos. Clt. 1799. Sh. 6 to 10 ft.

2 M. tomentòsa (Smith, in Rees' cycl. Mal. mis. 1. no. 1. p. 12.) leaves elliptical-oblong, obtuse, with a short point, obsoletely serrated, chiefly towards the apex, 3-nerved, downy; panicle terminal, clothed with rusty down as well as the branches and petioles, with 2-3 flowers together within a 7-leaved linear involucel; bracteas trifid; stipulas usually bifid. ♄. S. Native of the Prince of Wales Island. Grèwia paniculàta, Roxb. hort. beng. p. 92. Flowers reddish.

Tomentose Microcos. Clt. 1816. Shrub 6 feet.

3 M. sca'bra (Smith, in Rees' cycl. vol. 23.) leaves oblong, obliquely cordate at the base, rough beneath but smooth above, with 5 radiating hispid ribs; panicle ample, terminal, with 2 or 3 flowers within an involucrum, whose leaves are often palmate, as well as the bracteas. ♄. S. Native of Amboyna.

Scabrous Microcos. Shrub 6 feet.

4 M. Stauntonia'na; leaves oblong, broadest at the top, smooth above except the nerves, pubescent beneath, entire, acuminated, 3-nerved at the base; panicle terminal, pubescent, with 3 flowers usually within an involucre, whose leaves are simple, bifid, or trifid, as well as the bracteas. ♄. G. Native of China. (v. s. herb. Lamb.)

Staunton's Microcos. Shrub.

5 M. begoniæfòlia; leaves broad, ovate-oblong, entire, acuminated, smooth above except the nerves, but rough and rusty beneath, 4-5-nerved at the base and obliquely cordate; branches rough from stellate hairs; panicle terminal; flowers in clusters within an involucre; pedicels 2-3-flowered. ♄. S. Native of the East Indies. Grèwia begoniæfòlia, Roxb. hort. beng. p. 92.

Begonia-leaved Microcos. Shrub 10 feet.

6 M. gla'bra (Jack. in mal. misc. vol. 1. pt. 1. Hook. bot. misc. pt. 3. p. 282.) leaves 3-nerved, serrated, smooth; young branches tomentose; panicle terminal, with 3 flowers together within an involucrum. ♄. S. Native of the island of Carnicobar. There are frequently flowers in the axils of the upper leaves in this species.

Smooth-leaved Microcos. Shrub 6 feet.

7 M. involucra'ta; leaves ovate-oblong, acuminated, serrulated, unequally cordate at the base, rough from stellate hairs above, but with stellate tomentum beneath, 5-nerved at the base; panicles axillary and terminal; flowers involucrated. ♄. S. Native of Java. Grèwia involucràta, Blum. bijdr. ex Schlecht. Linnæa. 1. p. 658.

Involucred-flowered Microcos. Shrub.

Cult. The species of *Mícrocos* should be propagated and cultivated in the same manner as that recommended for the species of *Grèwia*.

XI. VINCE'NTIA (in honour of John Vincent, an eminent

advocate in the Mauritius, a great cultivator and patron of natural history, particularly botany). Bojer. mss. Hook. bot. misc. pt. 3. p. 293. t. 62.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 reflexed, deciduous sepals. Corolla of 5 bifid petals, each furnished with a scale at the base. Torus pentagonal. Stamens numerous, free, inserted in the stipe-formed torus. Style permanent, crowned by a 4-lobed stigma. Capsule globose, indehiscent, containing 4, 5-celled, 5-seeded nuts, or only 1-celled, 1-seeded from abortion. Seeds horizontal, pear-shaped, compressed. Albumen wanting. A tree with the appearance of *U'lmus campéstris*, having alternate, stalked, oval, oblong, deeply serrated, acuminated leaves, adult ones more cordate, waved, smooth, and shining, 3-nerved at the base, pale beneath. Peduncles short, axillary, solitary or twin, 3-flowered, the 3 flowers are inclosed within a bractea before expansion, hairy. Petals yellow.

1 V. triflòra (Bojer. mss. Hook. l. c.). ♄. S. Native of Madagascar.

Three-flowered Vincentia. Tree 30 feet.

Cult. To be propagated and cultivated in the same manner as that recommended for *Grèwia*, which see.

XII. COLU'MBIA (in honour of the celebrated Christopher Columbus, discoverer of America in 1493; his descendants are called Colon in Spain at this day; hence the genus was originally called *Colòna* by Cavanilles, but afterwards altered by Persoon to *Colúmbia.*) Pers. ench. 2. p. 66. D. C. prod. 1. p. 512.—Colòna, Cav. icon. 4. p. 47. t. 370.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 deciduous sepals, which are coloured on the inside. Petals 5, furnished each with a scale at the base. Torus pentagonal, stipe-formed. Stamens numerous, free. Style twice as long as the stamens. Fruit globose, 4-celled, with 4 double wings, each carpel having 2 wings and 2 seeds.—Trees resembling the elm, with serrated, alternate leaves, and terminal and axillary racemes of red flowers, forming a panicle, the partial peduncles are furnished with 3 trifid bracteas and 3-flowers each.

1 C. serratifòlia (D. C. prod. 1. p. 512.) leaves ovate-lanceolate, serrate, 3-nerved and oblique at the base, glaucous beneath; flowers in terminal and axillary bracteate racemes. ♄. S. Native of the Philippine islands. C. Americàna, Pers. ench. 2. p. 66. Colòna serratifòlia, Cav. icon. 4. p. 47. t. 370.

Serrate-leaved Columbia. Tree 20 feet.

2 C. Java'nica (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 658.) leaves cordate, acuminate, somewhat serrulated, 5-nerved at the base, scabrous above, but clothed with starry tomentum beneath, as well as the terminal divaricating panicle; capsule villous, with the wings dilated on the outside. ♄. S. Native of Java. Flowers red? An elegant tree, with the habit of *Theobròma*, with the younger leaves sometimes lobed.

Java Columbia. Tree 50 feet.

3 C. Cele'bica (Blum. ex Spreng. syst. app. p. 205.) leaves oblique at the base, oblong, acuminated, serrate, 3-nerved, scabrous above, but covered with starry down beneath, as well as the panicled, terminal racemes; wings of capsule rounded. ♄. S. Native of the Island of Celebes.

Celebes Columbia. Tree 30 feet.

Cult. The species of *Colúmbia* will thrive well in a mixture of sand and loam, and half-ripened cuttings will root freely in sand under a hand-glass, in heat.

XIII. TI'LIA (an obscure name, the etymology of which is entirely unknown; in Dutch and Swedish it is called *Linden*, in Anglo-Saxon *Lind.*, in English *Lime-tree*). Lin. gen. no. 660. D. C. prod. 512.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-parted, deciduous. Petals 5, each furnished with a scale at the base on the inside, or wanting the scale. Stamens numerous; filaments free or somewhat disposed into many bundles. Ovary globose, villous, crowned by the deciduous style, 5-celled; cells 1-2-seeded, but many of the cells often prove abortive. Cotyledons sinuately toothed.—Handsome trees, with spreading alternate branches; alternate, stalked, heart-shaped, acute, serrated, deciduous leaves, hairy at the origin of their veins; panicled, yellowish, fragrant flowers, which are continually haunted by bees, with an oblong, entire bractea, united to the common stalk. Capsules with or without angles. Qualities mucilaginous. Inner bark tough and fibrous. Wood smooth, light, delicately white. The sap instipated affords a quantity of sugar.

§ 1. *Petals without scales. All European species.—T. Europæ'a, Lin. spec. 733.*

1 T. microphy'lla (Vent. diss. p. 4. t. 1. f. 1.) leaves cordate, roundish, acuminated, sharply serrated, smooth above, glaucous and bearded beneath in the axils of the veins, as well as with hairy blotches; fruit rather globose, hardly ribbed, very thin and brittle. ♄. H. Native of Europe in sub-mountainous woods. In England frequent in Essex and Sussex. T. Europæ'a var. γ, Lin. spec. 733. T. ulmifòlia, Scop. carn. no. 642. T. sylvéstris, Desf. cat. hort. par. p. 152. T. parvifòlia, Ehrh. ex fl. helv. 1. p. 317. Engl. bot. t. 1705. T. cordàta, Mill. dict. Flowers small, fragrant, of a greenish-yellow colour in compound umbels.

Small-leaved Lime-tree. Fl. July, Aug. Britain. Tree 50 ft.

2 T. Europæ'a (Lin. spec. 733.) leaves cordate, acuminated, serrated, smooth, except a tuft of hair at the origin of the veins beneath, twice the length of the petioles; cymes many-flowered; fruit coriaceous, downy. ♄. H. Native of the north of Europe. In Britain in woods and hedges, or upon grassy declivities. Smith, engl. bot. t. 610. T. intermèdia, Hayne and Svenk. bot. t. 40. T. Europæ'a boreàlis, Wahl. ups. 181. Oed. fl. dan. t. 553. Flowers delightfully fragrant. Petals obovate, of a pale-lemon colour. This tree is cultivated all over England, as well as in some parts of Scotland. The French, growing tired of the horse-chesnut, as Du Hamel reports, adopted this tree for ornamental plantations in the time of Louis XIV. It generally composes the avenues about the residences of the French as well as the English gentry of that date, and Fenelon, in conformity to this, decorates with flowering lime-trees his enchanted isle of Calypso. The inner bark of this, and perhaps some other species, macerated in water, makes the Russia garden-mats, called *Bass* or *Bast-mats.* Mr. P. Lindegaard obtained excellent bass for tying plants, by placing the smooth lateral branches of the tree in water in April and towards midsummer; the branches were taken up when the bark loosened perfectly from the alburnum. It was then peeled off, and washed in water to make the glutinous matter separate, and hung up to dry. This method of making bass will be found of great importance to gardeners resident in the country at a distance from a town, where the lime-tree abounds. Bees collect much honey from the flowers. The smooth, light, delicately white, and uniform wood is used for some domestic purposes, and by the carver, turner, and musical-instrument maker; it served Gibbons for his inimitable carvings of flowers, dead game, &c. so often seen in old English houses, the duke of Devonshire's at Chatsworth, choir of St. Paul's, &c. It forms an excellent charcoal for gunpowder. An ancient lime-tree of great magnitude, which grew where the ancestors of Linnæus had long resided, is said to have given them their family name, *Linn* being the Swedish for a lime-tree (Smith.) The famous *kowno* honey is made exclusively from the blossoms of this tree. Near Kowno in

Lithuania there are large forests chiefly of this tree. The honey produced in these forests sells at more than double the price of any other, and is used exclusively in medicine, and for mixing in liqueurs.

European Lime-tree. Fl. July. Britain. Tree 60 feet.

3 T. RU'BRA (D. C. cat. hort. monsp. p. 150.) leaves cordate, unequal at the base, hairy beneath, as well as the petioles, with a tuft of hair at the origin of each vein; fruit globose, even. ♄. H. Native of Tauria, and probably of Greece. In England in Stoken Church woods, and at Malmsbury. T. triflòra, Puer. in Horn. cat. 2. p. 493. T. Corinthìaca, Bosc. dict. agr. 13. p. 139. T. corallìna, Ait. hort. kew. ed. 1. vol. 2. p. 229. T. Europæ'a, b. rùbra, Sibth. oxon. 166. T. Europæ'a γ, Smith, fl. br. 571. T. Europæ'a, Mill. dict. ed. 8. no. 2. Branches red. Flowers fragrant. Petals yellowish. This is a good tree to plant in avenues for effect as well as timber.

Red-twigged Lime-tree. Fl. June, July. Britain. Tree 66 ft.

4 T. PLATYPHY'LLA (Scop. carn. no. 641.) leaves cordate, roundish, acuminated, sharply serrated, downy beneath; origin of their veins woolly; branches hairy; umbels 3-flowered; fruit woody, downy, turbinate, with 5 prominent angles. ♄. H. Native of Europe in mountain woods. In England in woods and hedges, particularly in Surrey about Dorking and Streatham. Vent. diss. p. 6. t. 1. f. 2. T. cordifòlia, Bess. gal. 1. p. 343. T. Europæ'a, Desf. cat. 152. Bull. fr. t. 175. p. 18. T. grandifòlia, Ehrh. beitr. 5. p. 158. arb. 8. Smith, engl. fl. 3. Flowers very fragrant. Petals yellowish. *T. platyphýlla* is the wild lime-tree of Switzerland and the south of Europe, as *T. Europæ'a* is in the north. Mr. E. Forster remarks that *T. grandifòlia* occurs in very old plantations in England, as frequently as the *T. Europæ'a*, but not in modern ones. There are very large trees of it at Penshurst, and some at Waltham Abbey, the plantation of which is of very ancient date. Mrs. Beecroft brought a specimen from Blair of Athol, where are several trees near the house. Some famous old trees of this species in the Church-yard of Sedlitz, in Bohemia, are reported to have miraculously borne hooded leaves ever since the monks of the neighbouring convent were all hanged upon them.

Broad-leaved Lime-tree. Fl. June, July. Britain. Tree 60 ft.

§ 2. *Petals furnished each with a scale on the inside at the base.—Mostly American species.*

5 T. GLA'BRA (Vent. diss. p. 9. t. 2.) leaves profoundly cordate, abruptly acuminate, sharply serrated, somewhat coriaceous, smooth; petals truncate and crenate at the apex, equal in length to the style; fruit ovate, somewhat ribbed. ♄. H. Native of North America in the woods of Canada, and the northern United States. T. Americàna, Lin. spec. 733. Wat. dend. brit. t. 134. S. Caroliniàna, Wangh. amer. p. 56. T. Canadénsis, Michx. fl. bor. amer. 1. p. 306. Flowers yellowish and fragrant. This tree is known in North America by the name of *Lime* or *Line-tree*, *Basswood*, and *Spoonwood*. The wood is useful, and the tree is ornamental.

Smooth or Black Lime-tree. Fl. July, Aug. Clt. 1752. Tree 50 feet.

6 T. LAXIFLÒRA (Mich. fl. bor. amer. 1. p. 306.) leaves cordate, gradually acuminated, serrated, membranaceous, smooth; panicles loose; petals emarginate, shorter than the style; fruit globose. ♄. H. Native of North America from Maryland to Georgia, near the sea-coast. A very distinct species, though generally confounded with *T. glàbra*. Flowers yellowish-white, sweet-scented.

Loose-flowered Lime-tree. Fl. May, Jul. Clt. 1820. Tr. 50 ft.

7 T. PUBE'SCENS (Ait. hort. kew. ed. 1. vol. 2. p. 219.) leaves truncate at the base, somewhat cordate and oblique, denticulately serrated, pubescent beneath; petals emarginate, shorter than the style; fruit globose, even. ♄. H. Native of North America from Virginia to Georgia, in close copses, and on the banks of rivers. Vent. diss. p. 10. t. 3. Duh. ed. nov. t. 51. Michx. fl. arb. amer. 3. p. 318. T. Caroliniàna, Mill. dict. no. 4. T. Americàna, Walt. fl. carol. p. 153. Wats. dend. brit. 135. The leaves of this tree are much smaller than in the rest of the American species. Flowers yellowish, and very fragrant, crowded.

Var. β, *leptophýlla* (Vent. diss. p. 11.) leaves very thin, with a few fine serratures. T. Mississipénsis, Desf. hort. par. This will probably prove a distinct species.

Pubescent-leaved Lime-tree. Fl. July, Aug. Clt. 1726. Tree 40 feet.

8 T. HETEROPHY'LLA (Vent. diss. p. 16. t. 5.) leaves ovate, downy beneath, sometimes cordate at the base, sometimes obliquely or equally truncate; fruit globose, with 5 ribs. ♄. H. Native of North America on the banks of the Ohio and Missìssippi. T. álba, Michx. fil. arb. amer. 3. p. 315. t. 2. Perhaps also of Hort. kew. A very handsome and desirable ornamental tree. Flowers yellowish, fragrant. There is a species cultivated in Mexico which is probably identical with this.

Various-leaved or White American Lime-tree. Fl. June, July. Clt. 1811. Tree 50 feet.

9 T. A'LBA (Waldst. et Kit. pl. hung. 1. p. 3. t. 3.) leaves cordate, somewhat acuminated, and rather unequal at the base, serrated, clothed with white down beneath, but smooth above, 4 times longer than the petioles; fruit ovate, with 5 obscure ribs. ♄. H. Native of Hungary. Wats. dend. brit. t. 71. T. argéntea, Desf. hort. par. and D. C. cat. hort. monsp. p. 150. T. rotundifòlia, Vent. diss. p. 13. t. 4. Duham. ed. nov. t. 52. T. tomentòsa, Mœnch. weiss. 136. Flowers yellowish, and very fragrant.

White European or Silvery Lime-tree. Fl. June, Aug. Clt. 1767. Tree 50 feet.

10 T. PETIOLA'RIS (D. C. prod. 1. p. 514.) leaves cordate, acuminated, twice the length of the petioles, serrated, smooth above, but white beneath from close pressed down. ♄. H. Native? cultivated in the gardens of Odessa. Flowers yellowish.

Petiolar-leaved Lime-tree. Fl. June, July. Tree 50 feet.

Cult. All the species are desirable for avenues and parks; intermixed they will insure a longer succession of blossoms, and an agreeable variety, than any of them alone. The species will grow in almost any kind of soil; they are easily increased by layers, which should be layed in the autumn, but if seeds can be procured this will be unnecessary, as trees raised from seed are far preferable to those struck from layers. In order to obtain proper shoots for laying, a tree is cut down quite close to the ground, from the roots of which a great number of shoots are produced the following year; these will be strong enough to lay down the following autumn, especially if the smallest of them are cut off close early in the summer.

XIV. BROWNLO'WIA (in honour of the late Lady Brownlow, daughter of Sir Abraham Hume, a great admirer of botany.) Roxb. cor. 3. p. 61. t. 265.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 5-parted. Petals 5. Nectaries 5, linear around the style. Style and stigma simple. Stamens numerous, united at the base, inserted round the apex of a turbinate receptacle. Capsule of 1-5, 2-valved, 1-2-seeded carpels. A tree 15 feet in circumference, with large cordate, acute, 7-nerved, smooth leaves.

1 B. ELA'TA (Roxb. cor. l. c.) ♄. S. Native of the East Indies. Panicle terminal, conical, spreading. Flowers yellow.

Tall Brownlowia. Clt. 1823. Tree 100 feet.

Cult. This is a tree of great beauty. It will thrive well in a mixture of loam and peat; and cuttings will root in sand under a hand-glass, in heat.

XV. DIPLOPHRA'CTUM (from *διπλοος, diploos*, double, and *φραγμος, phragmos*, a dissepiment; in allusion to the cells of the fruit being divided by transverse dissepiments). Desf. mem. mus. 5. p. 34. t. 1. Kunth, malv. p. 15. nov. gen. amer. 5. p. 334. in a note. D. C. prod. 1. p. 514.

LIN. SYST. *Polyándria, Monogýnia.* Calyx of 5 sepals (f. 94. *a.*). Petals 5 (f. 94. *b.*), each furnished with a scale on the inside at the base (f. 94. *c.*). Stamens numerous, free (f. 94. *d.*). Style crowned by 5 aggregate stigmas (f. 94. *g.*). Capsules globose, indehiscent, 5-winged (f. 94. *e.*), 10-celled (f. 94. *f.*), cells divided by transverse dissepiments into 1-seeded divisions. Seeds arillate, fixed to the sides of the cells. Embryo fleshy, placed at the base of the albumen.—A tree, with oak-like leaves.

1 D. AURICULA'TUM (Desf. l. c.) ♄. S. Native of Java. Leaves sessile, oblong-lanceolate, wrinkled, downy beneath, serrated towards the top, obliquely auricled at the base. Stipulas 2 to each leaf, the 1 is of 2-rounded lobes, with a bristle-like appendage rising between these lobes (f. 94. *h.*), the other is of 1 round lobe on one side of a bristle-like appendage (f. 94. *d.*). Flowers rather larger than those of the *Lime-tree*, yellowish or white, solitary, axillary, and terminal, pedicellate.

FIG. 94.

Auricled-leaved Diplophractum. Tree 20 feet.

Cult. This tree will thrive well in a mixture of loam and peat; and cuttings will root in sand or mould under a hand-glass, in heat.

XVI. MICROSTE'MMA (from *μικρος, micros*, small, and *στεμμα, stemma*, a crown; in allusion to the petals being smaller than the sepals.) Lab. aust. cal. p. 58. t. 57.

LIN. SYST. *Monadélphia, Polyándria.* Calyx of 5-6 sepals, permanent. Petals 10-12, shorter than the sepals. Stamens 30 or more; filaments connected at the base. Anthers kidney-shaped, 2-celled. Capsule ovate, 10-12-celled, 10-12 valved. Style simple, crowned by a 5-6-cleft stigma. Valves of capsule with a dissepiment in the middle of each. Seeds solitary at the top of the valves. Albumen fleshy.—A shrub, with terminal clusters of flowers and fascicled exstipulate leaves.

1 M. SALICIFÒLIUM (Lab. l. c.) leaves oblong, tapering to both ends, almost entire; stipulas wanting; peduncles crowded, terminal. ♄. G. Native of New Caledonia. Diplophráctum salicifòlium, Spreng. syst. app. p. 205.

Willow-leaved Microstemma. Tree 16 feet.

Cult. This tree will thrive well in a mixture of peat and loam; and ripened cuttings will root in sand under a hand-glass.

XVII. MUNTI'NGIA (in honour of Abraham Munting, once professor of botany in the university of Groningen, died in 1682, author of several botanical works.) Lin. gen. no. 651. D. C. prod. 1. p. 514. Gært. fruct. 1. t. 59.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 5-7-parted, deciduous. Petals 5-7. Stamens numerous, unconnected. Ovary sessile, globose, surrounded with many hairs at the base, crowned by a sessile, permanent, rayed stigma. Berry 5-celled, many-seeded. Seeds small, imbedded in pulp. Embryo small.—Trees, allied to *Apeìba*, with oblique, alternate, serrated leaves, and large axillary flowers, rising in twos or threes above the axils of the leaves. Pedicels bracteate at the base.

1 M. CALABU'RA (Lin. spec. 728. Jacq. amer. t. 107.) leaves sessile, oblique, and semi-cordate at the base, lanceolate, villous beneath, as well as the branches; pedicels in pairs, or sometimes in fours, axillary, 1-flowered; sepals acuminated. ♄. S. Native of Jamaica on calcareous subalpine hills.—Jacq. amer. pict. p. 81. t. 158.—Sloan. jam. 2. p. 80. t. 194. f. 1. Calabùra álba, Pluk. mant. t. 152. f. 4. Flowers handsome, white, an inch in diameter, resembling those of the bramble. Fruit about the size of a cherry, of a dark-purple colour when ripe. Leaves 4 or 5 inches long, and three quarters broad. *Calabura* is the name of the tree in South America.

Calabura Muntingia. Fl. June, July. Clt. 1690. Tree 12 to 25 feet.

2 M. GLA'BRA (Spreng. syst. 2. p. 592.) leaves obliquely ovate-oblong, smooth; branches compressed, smooth; pedicels axillary, 1-flowered, in pairs; sepals very blunt. ♄. S. Native of Brazil. Flowers white.

Smooth Muntingia. Tree 30 feet.

Cult. These trees thrive well in a light loamy soil; and cuttings will root freely in sand under a hand-glass, in heat. They are handsome trees, and worth cultivating.

XVIII. APEI'BA (a name given to *Apeìba Tiboúrbou* by the natives of Brazil.) Margr. bras. p. 124. Aubl. guian. 1. p. 538. D. C. prod. 1. p. 514.—Aublètia, Schreb. gen. no. 889.—Oxytándrum, Neck. elem. no. 1005.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 5, rarely 4-parted. Petals 5, rarely 4, unguiculate, rather smaller than the calyx. Stamens numerous, with short filaments and long anthers, each ending in 2 leafy lobules. Style dilated at the apex into a funnel-shaped, toothed stigma. Capsule spherical, depressed, coriaceous, rough from stiff hairs or rigid bristles, 8-24 celled. Seeds minute, many in each cell, fixed to the central fleshy receptacle.—Trees or shrubs, clothed with starry down. Leaves broad, entire. Flowers large, golden-yellow or greenish. Peduncles opposite the leaves, branched, many-flowered. The wood of all the species is white and very light. The bark is fibrous and tough, and fit for making cordage.

1 A. TIBOU'RBOU (Aubl. guian. 1. p. 538. t. 213.) leaves cordate, ovate-oblong, serrated, hairy beneath; calyx 5-parted; fruit 10-celled, densely clothed with bristles. ♄. S. Native of Guiana and Cayenne on hills, also of Tobago and the province of Caraccas. Rich. act. soc. hist. nat. par. p. 110. H. B. et Kunth, nov. gen. amer. 5. p. 347.—Apeìba, Margr. bras. t. 124. Sloànea, Lœfl. itin. 311. A. hirsùta, Lam. dict. 1. p. 208. Aublètia Tibúrbu, Swartz. Petals dark-yellow. The tree is called *Tibourbou* by the inhabitants of Guiana.

Tibourbou Apeiba. Fl. Aug. Oct. Clt. 1756. Tree 10 feet.

2 A. PETOU'MO (Aubl. guian. 1. p. 543. t. 215.) leaves ovate-oblong, somewhat cordate at the base, entire, hoary beneath; calyx 4-5-parted; fruit densely clothed with bristles, 18 or 20-celled. ♄. S. Native of Guiana in the woods of Sinemaria. Rich. act. hist. soc. nat. par. 110. A. híspida, Gært. fr. 2. p. 121. Aublètia Petoúmo, Willd. spec. 2. p. 1156. Corolla yellow. The tree is called *Petoumo* by the Caribbees.

Petoumo Apeiba. Aug. Oct. Clt. 1817. Tree 40 feet.

3 A. ULMIFÒLIA (H. B. et Kunth. nov. gen. amer. 5. p. 347.) leaves elliptical-oblong, somewhat acuminated, rounded at the base, sharply toothed, downy above, but clothed with very fine cobwebbed rusty tomentum beneath. ♄. S. Native of South America on the banks of the river Orinoco. Corolla yellow. Resembles *A. Petoúmo.*

Elm-leaved Apeiba. Tree 20 to 30 feet.

4 A. A'SPERA (Aubl. guian. 1. p. 545. t. 216.) leaves ovate-oblong, somewhat cordate, quite entire, smooth; calyx 4-5-parted; fruct 8-10-celled, muricated with short conical pu-

bescent tubercles. ♄. S. Native of Guiana and Cayenne, where it is called *Petoumo*. Lam. ill. t. 470. f. 3. Gært. fruct. 2. p. 188. t. 121. Aublètia áspera, Willd. spec. 2. p. 1156. Corolla yellow.

Rough-fruited Apeiba. Fl. May, Aug. Clt. 1792. Tree 30 to 40 feet.

5 A. echina'ta (Gært. fr. 2. p. 189. t. 121.) leaves? fruit muricated, with long, pyramidal, and very smooth tubercles, 8-10-celled. ♄. S. Native of South America.

Echinated-fruited Apeiba. Tree.

6 A. læ'vis; leaves ovate-oblong, entire, acuminated, smooth, on long petioles; peduncles axillary, opposite the leaves, and terminal, constituting a terminal, many-flowered corymbose panicle; petals and sepals 4. ♄. S. Native of Guiana. Flowers apparently red. (v. s. herb. Lamb.)

Smoothed-leaved Apeiba. Shrub 12 feet.

7 A. gla'bra (Aubl. guian. 1. p. 541. t. 214.) leaves ovate-oblong, acuminated, quite entire, smooth; calyx 5-parted; fruit scabrous, 8-10-celled. ♄. S. Native of Cayenne and Guiana where the inhabitants call it *Ivouyra*. They use pieces of the wood rounded and pointed to produce fire, whence the Creoles call it *Bois de méche*. Aublètia læ'vis, Swartz. prod. 83. Willd. spec. 2. p. 1156. Petals blunt, greenish.

Smooth-leaved Apeiba. Fl. May, July. Clt. 1817. Tree 10 to 15 feet.

8 A. di'scolor (Spreng. neu. entd. 2. p. 166. under *Aublètia*) leaves ovate-oblong, quite entire, hairy beneath, 2-coloured; anthers bristly at the apex; fruit covered with bristles.

Two-coloured-leaved Apeiba. Tree 20 feet.

Cult. *Apeìba* is a genus of trees with fine broad leaves and largish usually yellow flowers. The species will thrive well in a mixture of loam and peat. The best way of bringing them into flower in this country is by cutting a ring round the bark of a large branch; by this means the growth is stopped. The cuttings must be taken off when well ripened, and they should be planted in sand under a hand-glass, in heat. The glass they are planted under should be tilted occasionally, so as to give a little air to the cuttings, otherwise they are apt to damp off.

XIX. SLOA'NEA (in honour of Sir Hans Sloane, once President of the Royal Society, founder of the British Museum, and Chelsea Botanical Garden, author of a history of Jamaica, died in 1753). Plum. gen. t. 15. D. C. prod. 1. p. 515.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 4-7 lanceolate-linear sepals, which are velvety on the outside and coloured on the inside, sometimes they are connected at the base and sometimes almost to the middle. Petals wanting. Stamens numerous, almost destitute of filaments, but with very long anthers, which are terminated by a small point. Ovary 1, crowned by a filiform stigma. Capsules coriaceous, woody, roundish, 4-5-celled, 4-5-valved, echinated from crowded somewhat woody bristles; cells 1-3-seeded. Seeds covered with fleshy aril. Trees natives of South America, with large alternate leaves, and each flower furnished with 1 bractea. This genus should perhaps be divided into as many genera as there are sections.

Sect. I. Sloa'nea (see genus). Plum. gen. t. 15. D. C. prod. 1. p. 515. Calyx 6-7-cleft. Style long, simple. Capsule 4-valved, covered with straight or inflexed bristles. Seeds enwrapped in fleshy aril.

1 S. denta'ta (Lin. spec. 730.) leaves ovate, acute, bluntly toothed; stipulas cordate-triangular, serrated. ♄. S. Native of South America. Castànea Sloànea, Mill. dict. S. grandiflòra, Smith, in Rees' cycl. no. 2. S. Plumièrii, Aubl. guian. 1. p. 536. Flowers large.

Toothed-leaved Sloanea. Fl. Aug. Nov. Clt. 1752. Tree 50 feet.

2 S. ni'tida; leaves broad-lanceolate, acute, shining, entire; stipulas deciduous; peduncles pubescent, terminal, usually 3 or 4 together, 1-flowered, furnished with 2 opposite bracteas in the middle; capsule thickly beset with straight, purple bristles; calyx 4-cleft. ♄. S. Native of Guiana. Peduncles sometimes 2-flowered, rising from the bracteas. Leaves very long and coriaceous. (v. s. herb. Lamb.)

Shiny-leaved Sloanea. Tree 50 feet.

3 S. Plumie'ri; leaves cordate at the base, sinuately toothed; stipulas serrated. ♄. S. Native of St. Domingo. Plum. icon. ed Burm. 240. t. 244. f. 1. Flowers large.

Plumier's Sloanea. Tree 50 feet.

Sect. II. Gynóstoma (from *γυνη, gyne*, a female, and *στομα, stoma*, a mouth; in allusion to the stigma being perforated). D. C. prod. 1. p. 515. Calyx 5-parted, with equal lobes. Torus thickened. Anthers hairy on the outside. Style awl-shaped. Stigma perforated, scarcely toothletted. Capsule 4-valved, covered with variously inflexed bristles; valves opening from the base to the apex.

4 S. Massòni (Swartz, fl. ind. occid. 2. p. 938.) leaves cordate, elliptical, obtuse, entire, or toothed; stipulas linear, serrated. ♄. S. Native of the West India Islands. Leaves more than a foot long. Racemes axillary, nodding towards the ends of the branches. Flowers smaller than those of the preceding species.

Masson's Sloanea. Tree 50 feet.

Sect. III. Myriochæ'ta (from *μυριος, myrios*, an indefinite number, and *χαιτη, chaite*, the hair of the head; in allusion to the capsule being covered with innumerable stiff hairs). D. C. prod. 1. p. 515. Calyx 5-parted, with 1 of the lobes smaller than the rest. Torus villous. Style short. Stigmas 4-5, simple. Capsules 4-5-celled, 4-5-valved, covered with crowded stiff bristles.

5 S. Sinemarie'nsis (Aubl. guian. 1. p. 534. t. 212.) leaves roundish-ovate, entire; stipulas long, acuminated, deciduous. ♄. S. Native of Guiana and the West India Islands, particularly St. Christopher. Lam. ill. t. 469. S. Aublètii, Swartz, fl. ind. occid. p. 490. Wood compact and red. Leaves a foot long. Racemes axillary, each peduncle with a single flower, shorter than the petioles. Flowers small. This tree is probably a species of *Ablània*.

Sinemaria Sloanea. Fl. July, Aug. Clt. 1820. Tree 50 ft.

Sect. IV. Oxya'ndra (from *οξυς, oxus*, sharp or pointed, and *ανηρ ανδρος, aner andros*, a male, alluding to the sharp-pointed anthers). D. C. prod. 1. p. 515. Calyx 5-parted; lobes linear-lanceolate, acuminated. Torus small. Style filiform, long, simple. Capsule, judging from the ovary, is probably destitute of bristles. This is probably a distinct genus.

6 S. corymbiflòra (D. C. prod. 1. p. 516.) leaves ovate, acute, entire; stipulas deciduous; peduncles axillary, branched, corymbose at the apex, many-flowered. ♄. S. Native of French Guiana.

Corymb-flowered Sloanea. Tree 30 feet.

Sect. V.? Foveola'ria (from *fovea*, a pit-fall; alluding to the receptacle being honey-combed or pierced). D. C. prod. 1. p. 516. but not of Ruiz and Pav. fl. per. Calyx 4-parted; lobes ovate-lanceolate, bluntish. Torus distinctly foveolate. Stamens with longish hairy filaments, and elongated, downy, hardly acute anthers. Ovary ovate, villous. Style villous at the base. Stigmas 3. This is perhaps a distinct genus.

7 S. Berteria'na (Chois. mss. D. C. prod. 1. p. 516.) leaves ovate, tapering to both ends; petioles tumid at the base and top; racemes few-flowered, rather shorter than the petioles. ♄. S. Native of St. Domingo. Rheèdia lateriflòra, Bert. in litt. Flowers small.

Bertero's Sloanea. Tree 40 feet.

Cult. A genus of fine trees with large leaves. They thrive best in a mixture of loam and peat, and ripened cuttings will root in sand, under a hand-glass, in heat.

XX. ESENBE'CKIA (in honour of Nees Von Esenbeck, Professor of Botany at Bonn on the Rhine, author of numerous botanical memoirs).

Lin. syst. *Polyándria, Monogýnia.* Calyx 1-leaved, turbinate before flowering, at length saucer-formed, girded by a 3-parted deciduous involucel. Petals 5. Stamens numerous, free; anthers twin. Style 1, crowned by a capitate, 5-angled stigma. Capsule woody, 5-angled, 5-valved; valves with a dissepiment in the middle of each, and covered on the outside with stiff bristles. Seeds 3-6 in each cell, adhering to the dissepiment. Albumen fleshy. Embryo straight. Cotyledons leafy. A tall tree 120 feet high, with alternate, oval, retuse quite entire leaves, and lateral many-flowered peduncles.

1 E. alti'ssima (Blum. l. c.). ♄. S. Native of Java. Thespèsia altíssima, Spreng. syst. app. p. 257.

Tallest Esenbeckia. Tree 120 feet.

Cult. This tree should be propagated and cultivated in the same manner as that recommended for *Sloànea*.

XXI. ABLA'NIA (*A. Guianénsis* is named *Goulougou-ablani* by the Caribbees in Guiana). Aubl. guian. 1. p. 585. t. 234. D. C. prod. 1. p. 516. Trichocárpus, Schreb. gen. no. 923.

Lin. syst. *Polyándria, Digýnia.* Calyx 4-5-parted (probably valvate in the bud). Petals wanting. Stamens numerous, with unconnected filaments and roundish anthers. Ovary ovate. Styles 2, bifid. Capsules 4-valved, 1-celled; valves covered on the outside with stiff bristles. Seeds numerous, covered with aril, fixed to the free placenta. A genus not sufficiently known, but is allied to *Sloànea* and *Bixa*.

1 A. Guiane'nsis (Aubl. guian. 1. p. 585. t. 234.) leaves oblong, waved; flowers corymbose. ♄. S. Native of Guiana in woods. Lam. ill. t. 479. A. laurifòlia, Pers. ench. 2. p. 81. Trichocárpus laurifòlius, Willd. spec. 2. p. 1224. Flowers corymbose, axillary.

Guiana Ablania. Tree 50 feet.

2 A. digita'ta (Spreng. syst. append. p. 210.) leaves digitate, smooth, shining above; leaflets oblong, serrulate; flowers corymbose. ♄. S. Native of Brazil at Rio Grande.

Digitate-leaved Ablania. Tree 40 feet.

Cult. These fine trees will thrive well in a mixture of loam and peat; and ripened cuttings will root in sand, under a hand-glass, in heat.

XXII. GYROSTE'MON (from γυρος, *gyros*, a circle, στημων, *stemon*, a stamen; in allusion to the stamens being twisted round each other in a circular manner). Desf. mem. mus. 6. p. 16. and 8. p. 115. D. C. prod. 1. p. 516.

Lin. syst. *Dioècia, Polyándria.* Flowers dioecious. Calyx spreading, 6-7-lobed. Petals wanting. Stamens in the male flowers numerous, twisted about each other; filaments wanting; anthers 4-lobed, 2-celled, seated on a naked receptacle. Ovaries in the female flowers 20-40, disposed in a whorl around the central axis, each bearing 1 style. Carpels capsular, membranous, 2-valved, 1-seeded. Seeds incurved, transversely striated, adhering to the upper part of the free central axis of the fruit. Embryo incurved, placed at the base of a horny albumen; cotyledons linear, parallel. Smooth, branching shrubs from New Holland. Probably more nearly allied to *Malvàceæ* or *Euphorbiàceæ*.

1 G. ramulòsum (Desf. mem. mus. 6. p. 17. t. 6.) leaves linear, almost sessile. ♄. G. Native of New Holland on the sterile islands. Male flowers pale-yellow. This shrub resembles a species of *E'phedra* when dry. Flowers solitary, axillary.

Branched Gyrostemon. Clt. 1820. Shrub 1 to 2 ft.

2 G. cotinifòlium (Desf. mem. mus. 8. p. 116. t. 10.) leaves ovate, roundish, stalked. ♄. G. Native of New Holland at a place called *Baye des chiens marins*. Flowers in racemes.

Cotinus-leaved Gyrostemon. Shrub 6 feet.

Cult. These shrubs will thrive well in a mixture of loam, peat and sand; and ripened cuttings will root in sand, under a hand-glass.

XXIII. CHRISTIA'NA (in memory of Christian Smith or Schmidt, M. D., a young Norwegian botanist of great promise, who went out with Captain Tuckey in his unfortunate expedition to explore the Congo river, on the south-western coast of Africa, where he died, as well as most of the officers and crews). R. Br. congo. p. 9. D. C. prod. 1. p. 516.

Lin. syst. *Polyándria, Monogýnia.* Calyx 3-lobed. Petals 5. Stamens indefinite. Capsules 5, capsular, 1-seeded, connected at the base. This genus is hardly known. It is allied to *Ventenàtia*.

1 C. Africa'na (D. C. prod. 1. p. 516.). ♄. S. Native of Africa at the river Congo, where it was detected by the unfortunate Christian Smith.

African Christiana. Shrub.

Cult. If ever this shrub should be introduced into Europe, we would recommend its being grown in a mixture of loam, peat and sand; and ripened cuttings will probably root in sand, under a hand-glass, in heat.

XXIV. LUHE'A (in honour of Charles Van der Luhe, a German botanist, who has wrote on the plants of the Cape of Good Hope). Willd. act. soc. nat. scrut. berol. 3. p. 409. t. 5. Luhèa et Alègria, D. C. prod. 1. p. 517.

Lin. syst. *Polyadélphia, Polyándria.* Involucel short, 6-9-12-parted. Calyx 5-parted. Petals 5, with an adnate gland at the claw on the inner side. Stamens numerous; filaments awl-shaped, pilose at the base, and are joined at the bottom into 5 bundles. Stamen scales, or nectaries 5, pencilled or fringed; anthers roundish, 2-celled, at length versatile. Style thick, gradually dilated from the base to the apex. Stigma 5-lobed, perforated, papillose. Capsules 5-angled, 5-celled, 5-valved, with a dissepiment in the middle of each valve, few or many-seeded. Seeds disposed in 2 rows on the margins of the dissepiments, winged at the apex. Albumen fleshy. Cotyledons leafy. This is a fine genus of trees, allied on the one side to *Grèwia* and on the other to *Apeìba*. Leaves alternate, distich, on short footstalks with prominent nerves beneath. Flowers sometimes solitary, terminal, but usually dichotomously branched; cymes axillary and terminal, frequently panicled and racemose. Bracteas under the forks. Pili stellate. Calyx valvate, and petals twisted in æstivation. Corolla white, rarely red.

1 L. speciòsa (Willd. l. c. and spec. 3. p. 1434.) leaves ovate, blunt, unequally toothed, smooth above and hoary beneath, 3-nerved; racemes terminal, simple, few-flowered. ♄. S. Native of Brazil. Flowers white.

Shewy Luhea. Tree 30 feet.

2 L. densiflòra (St. Hil. fl. bras. 1. p. 294.) leaves broad-obovate, short-acuminate, quite entire at the base, pale-rufescent beneath; flowers disposed as if they were in a crowded

panicle, each flower on a short, thick pedicel; outer calyx 9-parted, with linear-lanceolate segments; petals oblong, somewhat rhomboidal; stamen scales fringed at the apex. ♄. S. Native of Brazil. Petals silky at the bottom, but smooth, denticulated, and curled at the top.

Dense-flowered Luhea. Fl. Jan. Tree 10 to 20 feet?

3 L. grandiflòra (Mart. fl. bras. 1. p. 99. t. 59.) leaves broad-ovate, somewhat unequal-sided, acute, unequally serrated, pubescent above and white tomentose beneath; flowers paniculately cymose; pedicels long, bracteate, and are as well as the calyxes covered with brown olive tomentum; segments of outer calyx cordate, acute; petals rhomboidal; stamen scales free, entire, ciliately jagged at the apex. ♄. S. Native of Brazil in the province of Minas Geraes in mountain woods. Petals dilated at the base, bearded at the claws, ending in a lanceolate-spatulate white limb. Involucel 8-parted, (Mart.)

Great-flowered Luhea. Tree 20 feet.

4 L. paniculàta (Mart. fl. bras. 1. p. 100. t. 62.) leaves broad-ovate, bluntish or acutish, cordate at the base; somewhat unequal-sided, of a rufous-white colour beneath, unequally serrated, floral ones smallest; cymes at the tops of the branches disposed in a large leafy panicle, each flower on a short pedicel; outer calyx 9-parted with lanceolate segments; petals rhomboidal; stamen scales multifid even to the base, bearded. ♄. S. Native of Brazil in the province of Minas Geraes. Petals with short fleshy claws and an obovate, subemarginate, rose-coloured or white limb, pubescent at the base. The inhabitants of Brazil use the bark of this tree to tan leather under the name of *Acoeta cavalhos*.

Panicled-flowered Luhea. Fl. Mar. April. Tree 10 to 20 ft.

5 L. divaricàta (Mart. fl. bras. 1. p. 101.) leaves oblong or obovate, unequal-sided, with a short acumen, unequally serrate, but quite entire at the base, smooth above but hoary beneath; flowers dichotomously panicled; peduncles divaricate, cymose; pedicels short, thick; outer calyx 6-parted, with linear, acute segments; petals obovate; stamen scales dissected even to the middle. ♄. S. Native of Brazil in the province of St. Paul. Corolla rose-coloured; petals obovately orbicular, broadish at the claws and covered with long, dense hairs, the rest smooth, yellow at the base.

Divaricate-peduncled Luhea. Tree 30 feet.

6 L. villòsa (Mart. fl. bras. 1. p. 102.) leaves broad-ovate, acutish, denticulated, equal-sided; flowers panicled; fruit villous. ♄. S. Native of Brazil in the province of Bahia.

Villous Luhea. Tree 20 feet.

7 L. cándicans (Mart. fl. bras. 1. p. 102.) leaves ovate-oblong, denticulately serrated, white beneath from tomentum; flowers subsolitary. ♄. S. Native of Brazil in the province of Bahia. Flowers white.

White-leaved Luhea. Tree 20 feet.

8 L. cándida (Mart. fl. bras. 1. p. 102.) leaves ovate-serrated, on short petioles, white beneath; involucel 10-12-parted; stamens a little joined at the base; stamen scales fringed, divided even to the base. ♄. S. Native of Mexico. Alègria cándida, Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 517. A shewy tree with white flowers about the size of those of a single rose.

White-flowered Luhea. Tree 30 feet.

9 L. uniflòra (St. Hil. fl. bras. 1. p. 290.) leaves ovate, acute, entire at the base, pale-rufescent beneath; flowers solitary on short thick pedicels; outer calyx 9-parted; segments linear-lanceolate; petals oblong, linear; stamen scales capillaceous. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals white, hairy and ciliated at the base, the rest smooth. This species appears to approach *L. cándicans*.

One-flowered Luhea. Fl. Dec. Tree 15 feet.

10 L. rufescens (St. Hil. fl. bras. 1. p. 293. t. 293. A.) leaves elliptic or obovate, short-acuminate, subcordate at the base, rufescent beneath; flowers loosely cymose, each flower on a long pedicel; outer calyx 9-parted, with linear lanceolate segments; petals oblong, obovate; stamen scales fringed at the apex. ♄. S. Native of Brazil in the province of Minas Geraes. Petals white, curled, silky-pubescent above the base, the rest smooth.

Rufescent Luhea. Fl. April. Tree 20 feet.

11 L. laxiflòra (St. Hil. fl. bras. 1. p. 293.) leaves elliptical, short-acuminate, quite entire at the base, pale-rufescent beneath; flowers disposed as it were in few-flowered lax racemes, each flower on a long pedicel; outer calyx 9-parted, with lanceolate, acuminated segments; petals oblong-ovate; stamen scales fringed at the top. ♄. S. Native of Brazil in the provinces of Minas Geraes and Minas Novas. Petals white, pubescent and entire at the base, but smooth, denticulated, and curled at the apex.

Loose-flowered Luhea. Fl. May. Shrub 10 feet.

Cult. *Luhèa* is a genus of fine broad-leaved trees with shewy white or red flowers. They will thrive well in a mixture of loam and peat; and cuttings not too ripe will root in sand under a hand-glass, in heat. All the species are worth cultivating.

XXV. MO'LLIA (in honour of L. B. de Moll, Counsellor of State to the King of Bavaria, a patron of natural history). Mart. fl. bras. 1. p. 96. Schlechtendàlia, Spreng. syst. app. p. 295.

Lin. syst. *Polyadélphia, Polyándria.* Calyx of 5 sepals. Petals 5. Stamens divided into many bundles, disposed in many series, outer series divided into 5 bundles, inner one indeterminately joined. Style simple. Capsule 2-celled, 2-valved to the middle, without a central column. Seeds awl-shaped, numerous, disposed in 2 series in each cell. A middle-sized tree with alternate simple, stalked, stipulate leaves, and axillary aggregate stalked flowers.

1 M. speciòsa (Mart. fl. bras. 1. p. 97. t. 60.) leaves ovate, repandly-toothed at the apex, smooth, covered with small scales beneath; flowers axillary, subcorymbose. ♄. S. Native of Brazil near the bar of the Rio Negro. Petals white, a little shorter than the calyx, finely serrulated at the tip.

Shewy Mollia. Tree 10 to 20 feet.

Cult. This tree should be propagated and cultivated in the same manner as that recommended for *Luhèa*.

XXVI. VA'TICA (from Vaticanus, god of the prophets, which is derived from *vates*, divine. This tree is said to be employed by the people of China in some religious ceremonies). Lin. mant. 2. p. 152. D. C. prod. 1. p. 517.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-cleft; lobes acute, probably valvate in the bud. Petals 5, hoary on the outside, obovate-oblong, twisted in the bud. Anthers 15, sessile, ovate, 4-celled, 3 in front of each petal. Ovary 5-angled. Style 1, crowned by a 3-lobed stigma. Capsule 3-celled? cells 1-seeded? Smith. This genus is not sufficiently known.

1 V. Chinénsis (Lin. mant. 2. p. 152.). ♄. G. Native of China. Smith, icon. ined. t. 36. Lam. ill. t. 397. A shrub with angular branches, alternate cordate-oblong blunt quite entire leaves and panicles of flowers. The 2 outer cells of anthers terminated each in a spine.

Chinese Vatica. Tree 40 feet.

Cult. A mixture of loam and sand will suit this tree, and ripened cuttings will root in sand, under a hand-glass.

XXVII. E'SPERA (perhaps from εσπερα, *espera*, the evening; application not evident). Willd. act. soc. nat. cur. berol. 3. p. 449. D. C. prod. 1. p. 517.

Lin. syst. *Polyándria, Monogýnia.* Calyx 4-parted, spreading. Petals 6, permanent, 3 times as long as the calyx. Stamens numerous, with capillary filaments and roundish anthers. Style 1. Stigma 1. Capsule oblong, 4-6-winged, 4-6-celled; cells 1-seeded. Seeds roundish, hairy. Allied to *Humìria* and *Sloànea* according to Jussieu.

1 E. cordifòlia (Willd. l. c.). ♄. S. Native of? A shrub with alternate, stalked, cordate, quite entire leaves and terminal panicles of flowers.

Heart-leaved Espera. Shrub 5 feet.

Cult. This shrub will thrive well in a mixture of turfy loam and peat; and cuttings will root in sand under a hand-glass, in heat.

XXVIII. BE'RRYA (in honour of Dr. Berry, a friend of Roxburgh's, who first introduced this tree into the botanic garden at Calcutta). Roxb. cor. 3. p. 59. t. 264. D. C. prod. 1. p. 516.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 sepals, which are connected before expansion, but afterwards separating irregularly, downy on the outside but coloured within, soon falling off. Petals 5, oblong. Stamens numerous; filaments unconnected (or joined at the base); anthers small, 2-celled. Ovary 1, sessile, 3-winged. Style 1. Stigma trigonal, capitate. Capsule roundish, 3-celled, 3-valved, 6-winged, each valve bearing 2 horizontal wings on the back, with a dissepiment in the middle of each valve within. Seeds 2 in each cell, large, ovate-globose, covered with stiff hairs. A tree with broad, cordate, entire leaves, and spreading terminal panicles of small whitish-yellow flowers.

1 B. amomi'lla (Roxb. cor. l. c.). ♄. S. Native of Ceylon. Branches round, smooth. Leaves alternate, without stipulas, stalked, ovate, acuminate, entire, smooth, 7-nerved at the base. *Amomilla* is the Cingalese name of the tree.

Amomilla Berrya. Clt. 1810. Tree 36 feet.

Cult. This tree will succeed well in a mixture of turfy loam and peat; and cuttings will root readily if planted in sand or mould under a hand-glass, in heat.

XXIX. EUTHE'MIS (from *ευθημων, euthemon,* neat or pretty; in allusion to the elegance and neatness of the shrubs). Jack. in mal. misc. 1. Wall in Roxb. fl. ind. 2. p. 303.

Lin. syst. *Pentándria, Monogýnia.* Calyx inferior, of 5-sepals. Petals 5. Stamens 5, hypogynous. Anthers adnate, bursting at the apex, with 2 pores. Style filiform. Stigma simple. Berry 5-seeded. Seeds disposed round the axis, enclosed in a fibrous aril, albuminous, oblong, angular. Embryo inverse, cylindrical, almost as long as the seed, with a superior radicle.—Small shrubs, with simple, serrated, alternate, stipulate leaves, and racemes of flowers. This genus agrees with *Tiliàceæ* in the stipulate leaves and entire petals, but with *Elæocárpeæ* in the anthers bursting by 2 pores at the apex.

1 E. leucoca'rpa (Jack, l. c.) leaves lanceolate, beautifully spiny-serrated; racemes branched at the base; stipulas lanceolate, ciliated, soon falling off; fruit globose, white. ♄. S. Native of the forests of Singapore. This is a shrub of uncommon elegance and beauty. Corolla white, tinged with purple. Anthers longer than the filaments, ending in a long point, which is a little twisted.

White-fruited Euthemis. Shrub 4 to 5 feet.

2 E. mi'nor (Jack, l. c.) leaves narrow-lanceolate, slightly serrulated; stipulas linear, ciliated; racemes undivided; berry red, angular, acuminated. ♄. S. Gathered along with the preceding. Corolla white. Anthers yellow, ending in a long acumen.

Smaller Euthemis. Shrub 2 feet.

3 E.? eleganti'ssima (Wall. in Roxb. fl. ind. vol. 2. p. 305.) leaves elliptic-lanceolate, tapering to both ends, finely acuminated, sharply and minutely serrulated, the nerves reticulated, and uniting into 2 or more submarginal arches. ♄. S. Native of the forests of Singapore. Stipulas sublaciniate, and deeply divided into filiform long teeth. Flowers not seen.

Very-elegant-leaved Euthemis. Shrub 2 to 3 feet.

Cult. This is a genus of elegant shrubs, none of which have yet been introduced to the gardens. A mixture of sand and loam will probably suit the species, and perhaps ripened cuttings will root in sand under a hand-glass, in heat.

XXX. XEROPE'TALUM (from *ξηρος, xeros,* dry, and *πεταλον, petalon,* a petal; petals permanent.) Raf. Delil. in Guilliaud, voy. meroe. ex bull. scien. nat. June, 1827. p. 256.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-cleft. Petals 5, nerved, obovate, emarginate, rather oblique, and are as well as the calyx and stamens permanent. Stamens about 20, 5 of these are sterile. Capsule 3-valved, 3-celled. This is a very doubtful genus.

1 X. quinquese'tum (Raf. Delile, l. c.) ♄? G. Native of the north of Africa at Meroe. Flowers in panicled racemes, disposed in 2-4-radiated umbels.

Five-bristled Xeropetalum. Shrub?

Cult. This plant will probably succeed well in a mixture of turfy loam and sand; and cuttings will perhaps root in sand under a hand-glass.

Order XXXV. ELÆOCA'RPEÆ (plants agreeing with *Elæocárpus* in important characters.) Juss. am. mus. 11. p. 223. D. C. prod. 1. p. 519.

Calyx of 4-5 sepals, naked on the outside. Sepals valvate in the bud. Petals 4-5, hypogynous, alternating with the sepals, fringed or lobed at the top (f. 95. *b.*). Receptacle glandular, somewhat exserted. Stamens 15-20 (f. 95. *a.*); filaments short, unconnected; anthers elongated, filiform, tetragonal, 2-celled; cells opening at the top by an oblong pore. Ovary (f. 95. *c. d.*), many-celled. Style 1 (f. 95. *d.*). Seeds 2 or many in each cell. Albumen fleshy. Embryo erect, with flat leafy cotyledons.—Shrubs or trees, with alternate, simple, stipulate leaves. This order is very nearly allied to *Tiliàceæ,* but is distinguished from it by the lobed petals, and the anthers opening by 2 pores at the apex.

Synopsis of the Genera.

1 Elæoca'rpus. Sepals 5. Petals 5, jagged at the apex (f. 95. *b.*). Anthers ending in bristles. Drupe containing 1-nucleus, which is furrowed and wrinkled, 5-celled (f. 95. *b.*), or from abortion only 1-celled.

2 Acera'tium. Sepals 5. Petals 5, fringed at the apex, with broad ciliated claws. Anthers puberulous, destitute of the terminal bristles. Fruit unknown.

3 Di'cera. Sepals 4-5. Petals 4-5, 3-lobed at the apex. Anthers 20-30, linear, each ending in 2 bristles. Capsule 2-celled? cells many-seeded.

4 Frie'sia. Calyx 4-parted. Petals 4, 3-lobed at the apex. Anthers 12, cordate, oblong, acuminated, bursting at the top. Berry dry, rather stipitate, indehiscent, 2-4-furrowed, 2-4-celled; cells 2-seeded.

5 Acrono'dia. Flowers dioecious. Male flowers. Calyx of

4 sepals. Petals 4, linear, erose at the apex. Anthers 8-12, linear, puberulous, destitute of terminal bristles. Female flowers unknown.

6 VA'LLEA. Sepals 5. Petals 5, trifid, with 5 scales under the claws, which adhere to the petals, and with a ring of glands around the torus. Anthers 30-40, mutic, bursting at the top. Capsule 3-4-valved, muricated, 4-5-celled; cells 2-seeded.

7 TRICUSPIDA'RIA. Calyx 5-toothed. Petals 5, tricuspidate, with a ring of glands around the 10-angled torus. Anthers 15, mutic, opening at the apex. Capsule 3-valved, 3-celled, with a dissepiment in the middle of each valve. Seeds few.

8? DECA'DIA. Calyx 3-parted. Petals 10, obovate, serrated. Stamens 10, seated on the base of the petals; anthers roundish. Drupe containing a 5-celled nut.

I. ELÆOCA'RPUS (from ελαια, *elaia*, an olive, and καρπος, *karpos*, a fruit; the fruit is round, containing a nut furnished with rugosities, which has been compared to an olive.) Lin. gen. 665. D. C. prod. 1. p. 519.

LIN. SYST. *Polyándria*, *Monogýnia*. Calyx 5-sepalled. Petals 5, jagged at the apex (f. 95. *b*.). Anthers ending in bristles. Drupe containing a rugged-furrowed, 5-celled nut, (f. 96. *f*.) or only 1-celled from abortion. Trees with white, but not durable wood. Flowers small, usually fragrant; the fruit is eatable, and the hard rugose stones are manufactured into necklaces set in gold.

FIG. 95.

1 E. SERRA'TUS (Lin. spec. 734.) leaves with glands in the axils of the veins beneath, elliptic-oblong, serrated, acuminated; racemes axillary or lateral, drooping; fruit globose; nut wrinkled and furrowed. ♄. S. Native of the East Indies. —Burm. zeyl. 39. t. 40. Ganìtrus sphæ'rica, Gært. fr. 2. p. 271. t. 139. f. 6. Flowers white, but purplish before opening, sweet-scented.

Serrated-leaved Elæocarpus. Fl. March to Oct. Clt. 1774. Tree 50 feet.

2 E. GANI'TRUS (Roxb. hort. beng. p. 42.) leaves elliptic-lanceolate, repand-toothed, acuminated, younger ones pubescent; racemes simple, lateral. ♄. S. Native of the East Indies. Ganítrus, Rumph. amb. 3. p. 162. t. 101. Flowers white, sweet-scented.

Ganiter Elæocarpus. Tree 40 feet.

3 E. PE'RIM-KA'RA (D. C. prod. 1. p. 519.) leaves ovate-lanceolate, serrated; flowers racemose; fruit ovate; nut even. ♄. S. Native of Malabar.—Rheed. mal. 4. p. 51. t. 24. Racemes terminal. Flowers white, sweet-scented. This tree is called *Perim-kara* by the inhabitants of Malabar. Fruit eatable.

Perim-kara Elæocarpus. Tree 40 feet.

4 E. CYA'NEUS (Sims, bot. mag, t. 1737.) leaves oblong-lanceolate, serrated, netted with veins; racemes axillary, close-flowered; fruit somewhat globose; nut almost even. ♄. G. Native of New Holland. Flowers white. Drupe blue. E. reticulàtus, Smith in Rees' cycl. ex Ker. bot. reg. t. 657. E. cyàneus, Lois. herb. amat. t. 237.

Blue-fruited Elæocarpus. Fl. June, Aug. Clt. 1803. Tree 15 feet.

5 E. OBOVA'TUS; leaves obovate-oblong, tapering to the base, obtuse at the apex, entire or serrated towards the apex; racemes numerous, crowded-flowered. ♄. S. Native of New Holland. Flowers white, smaller than those of *E. cyàneus*.

Obovate-leaved Elæocarpus. Shrub.

6 E. STRI'CTUS (Lamb. herb.) leaves oblong-lanceolate, coriaceous, tapering to the base, serrated, silky beneath; racemes simple, axillary. ♄. S. Native of New Zealand. Flowers crowded, white.

Straight Elæocarpus. Tree 15 feet.

7 E. MONO'CERAS (Cav. icon. 6. p. 1. t. 501.) leaves lanceolate, cuneated at the base, serrated at the top; racemes axillary. ♄. S. Native of the island of Luzon, and at the town of Bannos. Ovary 2-celled? Anthers furnished with 1 bristle at the apex. Flowers of a rusty-red colour.

One-horned-anthered Elæocarpus. Tree 20 feet.

8 E. RUGÒSUS (Roxb. hort. beng. p. 42.) leaves large, elliptic or obovately-oblong, acuminated, abrupt at the base, repandly-serrated; anthers ending in 1 bristle each; petals 2-lobed, jagged; racemes simple, axillary. ♄. S. Native of Chittagong. Flowers large, white. Anthers with beardless valves.

Wrinkled-leaved Elæocarpus. Tree 20 feet.

9 E. INTEGRIFÒLIUS (Lam. dict. 2. p. 604.) leaves obovate-oblong, obtuse, quite entire; racemes axillary, longer than the leaves; flowers 4-cleft. ♄. S. Native of the Mauritius. Flowers white. Anthers beardless.

Entire-leaved Elæocarpus. Tree 20 feet.

10 E. OBLÒNGUS (Smith in Rees' cycl. no. 2.) leaves ovate-oblong, acute, quite entire; drupe ovate-oblong, 1-seeded. ♄. S. Native of the Moluccas. Ganìtrum oblóngum, Rumph. amb. 3. p. 163. t. 102. Gært. fruct. 1. p. 202. t. 43. Racemes axillary. Flowers white. Fruit eatable.

Oblong-leaved Elæocarpus. Tree 40 feet.

11 E. INTEGE'RRIMUS (Lour. coch. 1. p. 412.) leaves lanceolate, quite entire; flowers axillary, crowded. ♄. G. Native of Cochin-china. Flowers sweet-scented, of a golden-colour. Drupe black, somewhat ovate. This plant is cultivated in China for the sweetness and beauty of its flowers.

Very-entire-leaved Elæocarpus. Tree 20 feet.

12 E. SYLVE'STRIS (Poir. suppl. 294.) leaves ovate-lanceolate, serrated; spikes almost terminal; glands of receptacle 2-lobed; drupe 1-seeded. ♄. G. Native of Cochin-china in woods. Adenòdus sylvéstris, Lour. coch. 294. Branches spreading. Flowers white, varying to red.

Wild Elæocarpus. Tree 20 feet.

13 E. NI'TIDUS (Mal. misc. 1. no. 2. p. 41.) leaves ovate-lanceolate, serrated; racemes axillary, shorter than the leaves; stamens 15; nut 5-celled, 4 of which are for the most part abortive. ♄. S. Native of Pulo-Pinang. Flowers white.

Shining-leaved Elæocarpus. Tree 20 feet.

14 E. ELLI'PTICUS (Smith in Rees' cycl. no. 3.) leaves smooth, glandless; calyxes acute; ovary globose, with 5 little scales at the base. ♄. S. Native of? Lin. mant. 2. p. 401. in a note. Flowers white?

Elliptic-leaved Elæocarpus. Tree.

15 E. LANCEOLA'TUS (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 659 and 660.) leaves lanceolate, bluntish and remotely serrated at the top; racemes axillary, longer than the leaves, nodding; pedicels longer than the petioles; drupe oval; nut wrinkled, and covered with recurved prickles. ♄. S. Native of Java. Flowers white.

Lanceolate-leaved Elæocarpus. Tree 20 feet.

16 E. OBTU'SUS (Blum. l. c.) leaves obovate-oblong, bluntish, mucronately-serrated above the base; racemes axillary, and are as well as the petals silky; pedicels longer than the petioles. ♄. S. Native of Java. Flowers white. Like *E. monóceras*.

Obtuse-leaved Elæocarpus. Tree 20 feet.

17 E. macrophy'llus (Blum. l. c.) leaves oval-oblong, obtuse, rounded at the base; repandly serrated; stipulas semi-orbicular, leafy; racemes axillary, shorter than the leaves; fruit oval, smooth. ♄. S. Native of Java. Flowers white.

Long-leaved Elæocarpus. Tree 80 feet.

18 E. gla'ber (Blum. l. c.) leaves ovate or oval-oblong, obtuse, rounded at the base, mucronately serrated; racemes axillary, nodding, exceeding the leaves in length; petals fringed. ♄. S. Native of Java. Flowers white.

Smooth Elæocarpus. Tree 20 feet.

19 E. resinòsus (Blum. l. c.) leaves oval-oblong, acuminated, bluntish at the base, obsoletely serrated, with glands at the origin of the veins beneath; racemes axillary, shorter than the leaves; petals fringed, villous on the inside. ♄. S. Native of Java. Flowers white.

Resinous Elæocarpus. Tree 50 feet.

20 E. angustifòlius (Blum. l. c.) leaves oblong-lanceolate, acuminated at both ends, serrulated above the base; racemes axillary, shorter than the leaves; fruit globose; nut wrinkled, somewhat furrowed. ♄. S. Native of Java. Flowers white.

Narrow-leaved Elæocarpus. Tree.

21 E. floribu'ndus (Blum. l. c.) leaves elliptic-oblong, acuminated at the apex, acute at the base, bluntly-serrated, coriaceous, very smooth; racemes axillary, nodding, equal in length to the leaves; petals fringed. ♄. S. Native of Java.

Bundle-flowered Elæocarpus. Tree.

22 E. longifòlius (Blum. l. c.) leaves oblong, acuminate, acute at the base, repandly mucronulate; racemes shorter than the leaves, covered with silky down; petals fringed. ♄. S. Native of Java. Flowers white.

Long-leaved Elæocarpus. Tree.

23 E. stipula'ris (Blum. l. c.) leaves elliptic-oblong. acuminated, with the veins on the under surface pubescent; stipulas ovate, deeply serrated; racemes axillary, velvety-tomentose, equal in length to the leaves; fruit oval. ♄. S. Native of Java. Flowers white.

Large-stipuled Elæocarpus. Tree 60 feet.

24 E. tomentòsus (Blum. l. c.) leaves ovate, acuminate, roundish at the base, with bristle-like teeth, velvety-tomentose beneath, as well as branches; racemes axillary, elongated. ♄. S. Native of Java. Flowers white.

Downy Elæocarpus. Tree.

25 E. pube'scens (Roxb. hort. beng. p. 42.) leaves opposite, oblong, pubescent, membranous, rather cordate at the base; branches villous as well as the young leaves; racemes compound; sepals awl-shaped. ♄. S. Native of the East Indies. Ovary villous, mucronate with the style. Flowers white, rather large.

Pubescent Elæocarpus. Tree.

† *Species only known by name from Roxburgh's Hortus Bengalensis, p. 42 and 92, but some of these are probably identical with some of those described above.*

26 E. aristàtus, Roxb. Silhet. 27 E. serrulàtus, Roxb. Tinnevilly. 28 E. robústus, Roxb. Silhet. 29 E. lùcidus, Roxb. Chittagong. 30 E. lanceæfòlius, Roxb. Silhet. 31 E. tuberculàtus, Roxb. Chittagong. 32 E. pilòsus, Roxb. Mascal Island.

Cult. *Elæocárpus* is a very curious and ornamental genus of trees. They will thrive well in a mixture of loam and peat; and ripe cuttings will root in sand under a hand-glass; those of the stove species in heat. Seeds of some of the species will ripen, if pains be taken to fertilize the stigmas when they are in full bloom. The green-house species are well adapted for a conservatory.

II. ACERA'TIUM (from α, priv. and κερας, *keras*, a horn; because the stamens are destitute of the terminal bristles, which are so conspicuous in the preceding and following genus). D. C. prod. 1. p. 519.

Lin. syst. *Dodecándria, Monogýnia.* Calyx of 5 sepals. Petals 5, jagged at the apex, with broad ciliated claws. Anthers downy, destitute of terminal bristles. Style 1. Fruit unknown.

1 A. oppositifòlium (D. C. prod. 1. p. 519.). ♄. S. Native of Amboyna. Leaves opposite, elliptic-oblong, rather pubescent on the nerves, furnished with a few mucronated teeth. Peduncles terminal, 3-flowered. Flowers white?

Opposite-leaved Aceratium. Clt. 1818. Tree.

Cult. This tree will thrive well in a mixture of loam and peat, and ripe cuttings will root in sand under a hand-glass, in heat.

III. DI'CERA (from δις, *dis*, double, and κερας, *keras*, a horn; in allusion to the anthers being terminated by 2 bristles). Forst. gen. t. 40. D. C. prod. 1. p. 520.

Lin. syst. *Dodecándria, Monogýnia.* Calyx of 4 or 5 sepals. Petals 4-5, 3-lobed at the top. Anthers 12-20, linear, each terminated by 2 bristles. Capsules (in *D. dentàta*, which is the type of the genus,) 2-celled; cells many-seeded. Shrubs with laurel-like leaves.

1 D. denta'ta (Forst. gen. p. 80.) leaves alternate, oblong, serrate-toothed at the top; racemes axillary; flowers monogynous; capsules of 2, many-seeded cells. ♄. G. Native of New Zealand. Elæocárpus dentàtus, Vahl. symb. 3. p. 67. Eriostèmon, Col. hort. rip. t. 30. Filaments of stamens hairy. Flowers white. A rambling shrub.

Toothed-leaved Dicera. Fl. July. Clt. 1818. Shrub 10 ft.

2 D.? serra'ta (Forst. gen. p. 80.) leaves opposite, ovate, doubly serrated; racemes compound; flowers tetragynous; berry of 4, 2-seeded cells. ♄. G. Native of New Zealand. Elæocárpus Dícera, Vahl. symb. 3. p. 67. Flowers white? Perhaps a distinct genus or a species of *Frièsia*.

Serrated-leaved Dicera. Shrub 10 feet.

3 D. craspe'dum (Gmel. syst. D. C. prod. 1. p. 520.) leaves oblong, crenated, ending in a reflexed point; spike subterminal, crowded; flowers monogynous; berry of one many-seeded cell. ♄. S. Native of Cochin-china in woods. Craspédum tectòrium, Lour. coch. 336. Elæocárpus tectòrium, Poir. suppl. 2. p. 104. Perhaps a distinct genus. Flowers greenish-yellow. The wood is used for building houses in Cochin-china, and the leaves for roofing them.

Fringed-flowered Dicera. Tree 50 feet.

Cult. The species of *Dícera* thrive well in a mixture of loam and peat; and ripe cuttings will root in sand under a hand-glass.

IV. FRIE'SIA (in honour of Elias Fries, M. D. Professor of Botany in the university of Lund; an acute philosophical and cryptogamic botanist). D. C. prod. 1. p. 520.

Lin. syst. *Dodecándria, Monogýnia.* Calyx 4-parted. Petals 4, 3-lobed at the apex. Anthers 12, cordate-oblong, acuminate, dehiscent at the apex. Berry dry, somewhat stipitate, indehiscent, 2-4-furrowed, 2-4-celled; cells 2-seeded.

1 F. peduncula'ris (D. C. prod. 1. p. 520.). ♄. G. Native at Cape Van Diemen. Leaves opposite, lanceolate, serrated; pedicels axillary, spreading, 1-flowered, somewhat nodding. Elæocárpus pedunculàris, Lab. nov. holl. 2. p. 15. t. 155. Flowers white.

Peduncled-flowered Friesia. Clt. 1818. Shrub 3 to 6 feet.

Cult. This shrub will thrive well in a mixture of turfy loam and peat; and ripe cuttings will root in sand under a hand-glass.

V. ACRONO'DIA (from *ακρος, akros*, the summit, and *νωδος, nodos*, toothless; alluding to the anthers being without bristles at the summit). Blum. bijdr. ex Schlecht. Linnæa. 1. p. 660.

Lin. syst. *Diœ'cia, Octándria.* Male flowers; sepals and petals 4, the last small and linear, erose at the apex. Anthers 8-12, linear, puberulous, destitute of terminal bristles. Female flowers unknown.

1 A. puncta'ta (Blum. l. c.). ♄. S. Native of Java. A tree with scattered, lanceolate, serrated leaves, which are full of dots beneath and axillary simple racemes of flowers.

Dotted-leaved Acronodia. Tree 30 feet.

Cult. A mixture of loam and peat will suit this tree well, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

VI. VA'LLEA (in honour of Robert Valle of Rouen, who has given a commentary on the works of Pliny). Mut. in Lin. suppl. 266. D. C. prod. 1. p. 520.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 sepals. Petals 5, trifid. Glands of receptacle forming a ring around the ovary. Scales 5, adnate under the claws of the petals. Stamens 30-40; anthers mutic, bursting at the top. Style furrowed. Capsules 4-5-valved, 4-5-celled; valves muricated, spreading; cells 2-seeded. Small trees with kidney-shaped stipulas, and alternate, cordate, stalked, entire leaves.

1 V. stipula'ris (Mut. in Lin. fil. suppl. 266.) branches, pedicels and petioles smooth; leaves cordate, blunt, bearded at the origin of the veins beneath, as well as at their base; stipulas on short stalks. ♄. S. Native of South America at Santa Fe de Bogota. H. B. and Kunth, nov. gen. amer. 5. p. 350. t. 489. Flowers pale-red.

Stipular Vallea. Tree 14 feet.

2 V. cordifòlia (Ruiz et Pav. syst. fl. per. 132.) branches, pedicels, and petioles hairy; leaves cordate, acute, hairy beneath, especially at the base; stipulas on short stalks. ♄. S. Native of Peru in groves. Flowers white.

Heart-leaved Vallea. Tree 18 feet.

3 V. pube'scens (H. B. et Kunth, nov. gen. amer. 5. p. 350.) branches, pedicels, and petioles clothed with rusty down; leaves cordate, blunt, covered with rusty pubescence beneath; stipulas sessile. ♄. S. Native of South America near Santa Fe de Bogota. Flowers white.

Pubescent Vallea. Tree 20 feet.

Cult. The species of *Vállea* will thrive well in a mixture of loam and peat; and ripe cuttings will root in sand under a hand-glass, in a moderate heat.

VII. TRICUSPIDA'RIA (from *tres*, three, and *cuspis*, a point; in allusion to the petals being divided into 3 points at the apex). Ruiz et Pav. syst. fl. per. p. 112. prod. t. 36. D. C. prod. 1. p. 520.—Tricúspis, Pers. ench. 2. p. 9.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-toothed. Petals 5, tricuspidate at the apex. Glands of receptacle annular, 10-sided. Anthers 15, mutic, bursting at the apex. Capsules 3-celled, 3-valved; valves septiferous. Seeds few.

1 T. depe'ndens (Ruiz et Pav. l. c.). ♄. G. Native of Chili in groves and inundated places. Leaves opposite, oblong-ovate, serrated. Pedicels axillary, solitary. Flowers white?

Depending Tricuspidaria. Tree 20 feet.

Cult. See *Vállea* for cultivation and propagation.

VIII. DECA'DIA (from *δεκα, deca*, ten; the corolla is of 10 petals, which distinguishes it from all the other genera of this order). Lour. coch. 1. p. 385. D. C. prod. 1. p. 520.

Lin. syst. *Polyándria, Monogýnia.* Calyx 3-parted, permanent. Petals 10, somewhat ovate, a little serrated. Stamens 30, standing upon the base of the petals. Anthers roundish. Style filiform. Drupe containing a 5-celled nut. Perhaps the stamens are inserted in the calyx, if so this genus is probably referable to *Rosàceæ*.

1 D. aluminòsa (Lour. p. 315.). ♄. G. Native of Cochinchina and the Molucca Islands in woods.—Rumph. amb. 2. t. 100. Leaves alternate, lanceolate, serrated, smooth. Racemes almost simple. Flowers white. The bark and leaves of this tree are used by native dyers to heighten and fix colours.

Alum Decadia. Tree 20 feet.

Cult. This tree will thrive in a mixture of loam and peat; and ripe cuttings will root in sand under a hand-glass.

Order XXXVI. CHLENA'CEÆ (from *χλαινα, chlaina*, a cloak. The flowers of most of the plants belonging to this order are furnished with an involucrum). Pet. Th. hist. veg. afr. austr. p. 49. D. C. prod. 1. p. 521.

Involucre 1 (f. 96. *b.*) to 2-flowered, permanent, various in form and consistence (f. 96. *f.*). Calyx of 3 small sepals (f. 96. *a.*). Petals 5 (f. 96. *b.*) to 6, hypogynous, broadest at the base, sometimes they are connected at the very bottom. Stamens usually numerous (f. 96. *c.*), but sometimes there are even as few as 10; filaments connected at the base into a tube, or adnate to the tube of the petals; anthers roundish. 2-celled, adnate or free. Ovary 1 (f. 96. *g.*), 3-celled. Style 1, filiform, crowned by a triple stigma (f. 96. *d.*). Capsule 3-celled or only 1-celled from abortion. Seeds solitary or numerous in each cell, fixed to the central axis, inverted. Albumen fleshy (ex Juss.) corneous (ex Pet. Th.). Embryo central, green. Cotyledons leafy, waved. Little trees and shrubs, natives of Madagascar, with alternate, feather-nerved, entire leaves; deciduous stipulas; and racemose and panicled flowers. This order is allied to *Malvàceæ*, according to Petit Thouars, in the flowers being furnished with an involucre, as well as in the stamens being monadelphous, but according to the opinion of Jussieu it is more nearly allied to *Ebenàceæ* and *Simplocíneæ*, on account of the petals being connected at the base, as well as in the seeds being albuminous.

Synopsis of the genera.

1 Sarcolæ'na. Involucrum fleshy, urceolate, 5-toothed, with a calyx within it. Petals 5, conniving into a tube, with the stamens inserted in its base. Capsule baccate, 3-celled, cells 2-seeded, furnished with prurient villi on the inside.

2 Leptolæ'na. Involucrum rather fleshy, cylindrical, small. Sepals 3, longer than the involucrum. Petals 5, conniving into a tube. Stamens 10. Ovary 3-celled; cells 2-seeded, but the capsule is 1-celled, 1-seeded from abortion.

3 Schizolæ'na. Involucrum 2-flowered, not fleshy, fringed (f. 96. *f.*). Sepals 3 (f. 96. *a.*). Petals 5 (f. 96. *b.*). Stamens numerous (f. 96. *c.*). Capsule 3-celled; cells many-seeded.

4 Rhodolæ'na. Involucrum of 2 bracteas, which are pressed

to the calyx. Sepals 3, concave, fleshy. Petals 6, urceolate. Stamens numerous, connected at the base. Ovary 3-celled, many-seeded.

† *A genus allied to Chlenàceæ.*

5 Hugònia. Involucrum none. Calyx 5-parted. Petals 5, unguiculate. Stamens 10, monadelphous at the base. Styles 5, distinct. Drupe containing 5, 1-seeded carpels adhering together.

I. SARCOLÆ'NA (from σαρξ σαρκος, *sarx sarcos*, flesh, and χλαινα, *chlaina*, a cloak; alluding to the fleshy involucre). Pet. Thour. l. c. p. 37.

Lin. syst. *Monadélphia, Polyándria.* Involucre fleshy, pitcher-shaped, 5-toothed, and covered with rusty down. Calyx within the involucre. Petals 5, conniving into a tube at the base. Stamens numerous, inserted in the base of the tube. Anthers terminal. Ovary 3-celled; cells 2-seeded. Capsule within the large baccate involucrum, which is furnished with stinging hairs inside. Albumen thin. Shrubs with decumbent branches; younger leaves plaited; adult ones waved, appearing as if they were 5-nerved. Flowers white.

1 S. grandiflòra (P. Th. l. c. p. 40. t. 9.) panicle few-flowered; leaves acute, clothed with rusty down beneath; involucre depressed, scabrous from hairs. ♄. S. Native of Madagascar. Flowers large.

Great-flowered Sarcolæna. Shrub 10 feet.

2 S. multiflòra (P. Th. l. c. p. 40. t. 10.) panicle crowded; leaves acute, rather pilose on the nerves beneath; involucre rough from hairs, 3-lobed. ♄. S. Native of Madagascar.

Many-flowered Sarcolæna. Shrub 10 feet.

3 S. erio'phora (P. Th. l. c. p. 40.) panicle few-flowered, axillary; leaves blunt, free from longitudinal plaits; involucre very hairy. ♄. S. Native of Madagascar.

Wool-bearing Sarcolæna. Shrub 10 feet.

Cult. Sarcolæ'na is a genus of elegant shrubs; the species will thrive well in a mixture of sand, loam, and peat; and cuttings will probably root in sand under a hand-glass, in heat.

II. LEPTOLÆ'NA (from λεπτος, *leptos*, slender, and χλαινα, *chlaina*, a cloak; in allusion to the narrow fleshy involucre). P. Th. hist. veg. afr. austr. p. 41. D. C. prod. 1. p. 521.

Lin. syst. *Monadélphia, Decándria.* Involucre small, rather fleshy, cylindrical. Sepals 3. longer than the involucre. Petals 5, connected into a tube. Stamens 10. Anthers fixed by the back. Ovary 3-celled; cells 2-seeded. Capsule girded by the scabrous involucre, 1-celled, 1-seeded from abortion. An elegant tree, with smooth, waved leaves, and corymbose flowers.

1 L. multiflòra (P. Th. l. c. p. 41. t. 11,). ♄. S. Native of Madagascar at Foulepointe. Flowers white.

Many-flowered Leptolæna. Tree 20 feet.

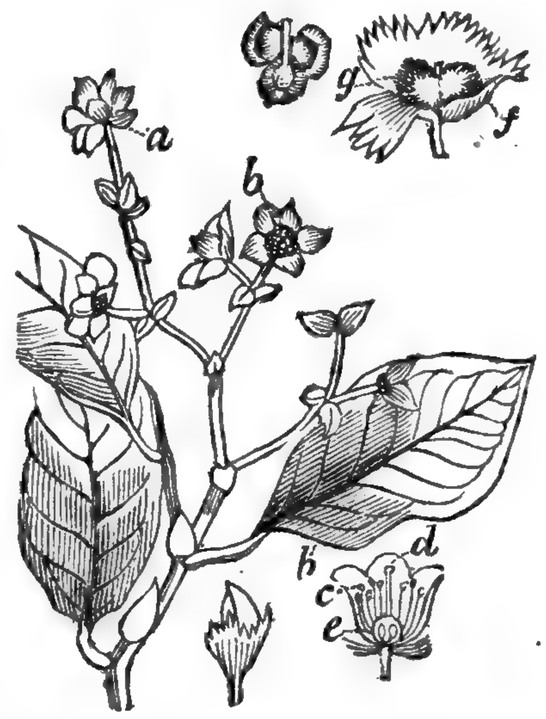
Cult. See *Sarcolæ'na* for cultivation and propagation.

III. SCHIZOLÆ'NA (from σχιζω, *schizo*, to cut, and χλαινα, *chlaina*, a cloak; alluding to the cut involucre (f. 96. *g*.). P. Th. hist. veg. afr. austr. p. 43. gen. nov. no. 55. D. C. prod. 1. p. 521.

Lin. syst. *Monadélphia, Polyándria.* Involucre 2-flowered (f. 96. *b*.), fringed, not fleshy, at length expanded, jagged (f. 96. *f*.), clammy, conniving. Sepals 3 (f. 96. *a*.). Petals 5 (f. 96. *b*.). Stamens numerous, with slender filaments (f. 96. *e*.) and adnate anthers. Capsule enclosed within the involucre (f. 96. *g*.), 3-celled; cells many-seeded. Elegant little trees, with ovate smooth leaves, and panicles or racemes of flowers.

1 S. ròsea (P. Th. l. c. p. 43. t. 12.) panicles terminal; involucre very large, irregularly cleft. ♄. S. Native of Madagascar. Flowers red (f. 96.).

FIG. 96.



Rose-coloured-flowered Schizolæna. Tree 20 feet.

2 S. elonga'ta (Pet. Th. l. c. p. 44.) panicles terminal; involucre 5-lobed, a little longer than the capsule. ♄. S. Native of Madagascar. Flowers white.

Elongated-involucred Schizolæna. Tree 20 feet.

3 S. cauliflòra (P. Th. l. c. p. 44.) flowers racemose; racemes rising from the trunk or larger branches. ♄. S. Native of Madagascar.

Stem-flowered Schizolæna. Tree 20 feet.

Cult. Schizolæ'na is a genus of elegant little trees. The species will thrive well in a mixture of loam, sand, and peat; and cuttings will root in sand, under a hand-glass, in heat.

IV. RHODOLÆ'NA (from ῥοδος, *rhodos*, a rose, and χλαινα, *chlaina*, a cloak; flowers are red). Pet. Th. hist. veg. afr. austr. p. 47. gen. nov. no. 56. D. C. prod. 1. p. 522.

Lin. syst. *Monadélphia, Polyándria.* Involucre constantly of 2 bracteas, which are pressed to the calyx. Sepals 3, concave, fleshy, clammy. Petals 6, large, urceolate, spirally twisted in the bud. Stamens numerous, shorter than the petals, joined at the base into a short urceolus; anthers quadrangular, inserted by the back. Ovary 3-celled, many-seeded. A climbing shrub with oval, acute leaves, which are pointed by the middle nerve being drawn out; 2-flowered, naked, axillary peduncles, and large scarlet flowers.

1 R. altívola (P. Th. l. c. p. 48. t. 13.). ♄. ◠. S. Native of Madagascar. Fruit unknown.

Soaring Rhodolæna. Shrub climbing.

Cult. This is a beautiful climbing shrub with large scarlet flowers, well adapted for covering rafters in stoves. It will thrive well in a mixture of loam and peat; and cuttings will root in sand under a hand-glass, in heat.

† *A genus allied to Chlenàceæ.*

V. HUGO'NIA (in honour of John Hugon, an English botanist, who published a dissertation on the systems of botany in 1771). Lin. gen. no. 831. Gært. fruct. 1. p. 281. t. 58. D. C. prod. 1. p. 522.

Lin. syst. *Monadélphia, Decándria.* Calyx naked, permanent, 5-parted, or of 5 unequal sepals, which are connected at the base, imbricate in the bud. Petals 5, unguiculate, alternating with the sepals, twisted in æstivation. Stamens 10, joined into an urceolus at the base at first, but afterwards becoming free and filiform; anthers ovate, twin. Ovary roundish. Styles 5, distinct. Drupe fleshy, enclosing (5 ex Cav. 10 ex Gært.) 1-seeded carpels, adhering together, with a pendulous seed in each cell. Embryo inverted in the axis of a fleshy albumen, with a short superior radicle and flat leafy cotyledons. Shrubs with alternate leaves, but they are usually crowded and opposite near the flower; 2 awl-shaped stipulas and 1-flowered axillary peduncles, sometimes some of which are changed into hooked spines. This genus is allied to *Malvàceæ* or *Byttneriàceæ*, but the calyx is not valvate but imbricate.

1 H. My'stax (Lin. spec. 944.) leaves oval, smooth, very

entire; spines hooked, almost opposite. ♄. S. Native of Ceylon and Malabar.—Rheed. mal. 2. p. 29. t. 19. Flowers yellow. Fruit yellowish or red.

Bearded Hugonia. Fl. June, Sept. Clt. 1818. Sh. 10 ft.

2 H. SERRA'TA (Lam. dict. 3. p. 149.) leaves oval-oblong, serrated, adult ones smooth; spines almost opposite, hooked. ♄. S. Native of the Mauritius. H. Mýstax, Cav. diss. 3. p. 177. t. 73. f. 1. exclusive of the synonymes. Flowers yellowish.

Serrate-leaved Hugonia. Fl. Ju. Oct. Clt. 1820. Sh. 10 ft.

3 H. TOMENTÒSA (Cav. diss. 3. p. 178. t. 23. f. 2.) leaves oblong, serrated, downy on both surfaces; spines wanting. ♄. S. Native of the Mauritius. Lam. dict. 3. p. 150. Flowers yellowish or white.

Downy-leaved Hugonia. Shrub 10 feet.

Cult. The species of *Hugònia* will thrive well in a mixture of loam, sand and peat; and ripened cuttings will root freely in sand under a hand-glass, in heat.

ORDER XXXVII. TERNSTRŒMIA'CEÆ (plants agreeing with *Ternstræ'mia* in important characters.) D. C. mem. soc. h. nat. gen. vol. 1. prod. 1. p. 523.—Ternstræ'mia, Mirb. bull. philom. 1813. p. 381.

Calyx of 3-5, unequal, concave (f. 97. *a.*), coriaceous, obtuse, permanent, imbricate sepals (f. 99. *a.*), usually furnished with 2 bracteoles at the base. Petals usually 5 (f. 97. *d.* f. 99. *b.*), rarely more or fewer, inserted on the disk, sometimes free (f. 97. *d.*), sometimes connected at the base (f. 99. *b.*). Stamens numerous, hypogynous (f. 99. *d.* f. 98. *c.* &c.), somewhat adnate to the petals at the base, free, or connate, rarely disposed in bundles (f. 99. *d.*); filaments short, awl-shaped; anthers erect, 2-4-celled, adnate or versatile. Ovary ovate (f. 98. *d.* f. 99. *c.*). Styles 2-7, free, or more or less joined together (f. 99. *f.*). Fruit ovate-globose, radiately divided on the inside into as many cells as there are styles or stigmas (f. 97. *g.* f. 98. *e.* f. 99. *c.*), sometimes dry-baccate (f. 97. *g.* f. 98. *d. e.*), indehiscent, sometimes capsular, dehiscent (f. 99. *c.*). Seeds few or numerous, fixed to the central placenta (f. 97. *g.* f. 98. *e.*), sometimes arched (f. 97. *h.*), sometimes roundish or compressed. Albumen fleshy or wanting. Embryo arched or straight, slender, terete, with oblong cotyledons, and an inconspicuous plumule, with a long radicle, which is turned towards the hylum. The order is composed of trees and shrubs, with alternate, exstipulate, coriaceous, feather-nerved, undivided leaves, and axillary and terminal peduncles, bearing handsome, white, yellow, red, purple, and variegated flowers. *Camèllia* and the cuts we have given will convey a very good idea of the beauty of the genera. The tea is well known to be one of the most useful plants in the world for its stimulating influence in decoction upon the nerves, which is attributed by Cullen to the presence of a narcotic principle. The seeds of *Camèllia oleìfera*, and some others, yield a fine oil. Noronha states that the fruit of a *Sauraúja*, found in Java, is subacid, in flavour resembling the Tomato, and that it is eaten by the Javanese under the name of *Koleho*.

Synopsis of the Genera.

TRIBE I.

TERNSTRŒMIE'Æ. *Calyx with 2 bracteas at the base. Petals connected together at the base, opposite the sepals. Anthers adnate. Style crowned by a simple stigma. Albumen fleshy.*

1 TERNSTRŒ'MIA. Sepals and petals 5. Stamens numerous, in a double series. Anthers oblong, smooth. Berry dry, 2-5-celled, at length 3-5-valved; cells 3-4-seeded. Seeds wingless.

TRIBE II.

EURYE'Æ. *Calyx furnished with 2 bracteas at the base, of 5 sepals or 5 lobes. Corolla 5-parted, opposite the sepals. Anthers adnate. Style crowned by 3-5 distinct stigmas.*

2 ANNESLE'A. Calyx 5-lobed. Corolla contracted at the throat, 5-cleft. Stamens numerous, disposed in a double series. Anthers linear, smooth, ending in a long point. Berry dry, 3-celled; cells 1-3-seeded. Style crowned by 3 awl-shaped stigmas.

3 GEE'RIA. Flowers dioecious. Calyx of 5-sepals. Corolla 5-parted. Stamens numerous, adnate to the base of the corolla. Styles 3-5, connected at the base, crowned by as many acute stigmas. Berry 5-celled, many-seeded.

4 EU'RYA. Flowers polygamous. Sepals and petals 5, both concrete at the base. Stamens 12-15. Anthers smooth, tetragonal. Style 3-5-cleft. Capsule 3-5-celled, many-seeded.

TRIBE III.

FREZIE'REÆ. *Calyx furnished with 2 bracteas at the base. Petals free, alternating with the sepals. Anthers adnate. Style crowned by 2-5 distinct stigmas. Seeds wingless. Albumen fleshy. Embryo rather curved.*

5 CLEYE'RA. Sepals and petals 5. Anthers hispid from retrograde bristles. Style filiform, crowned by 2-3 stigmas. Berry 2-3-celled; cells 2-3-seeded.

6 FREZIE'RA. Sepals and petals 5. Anthers smooth, subcordate. Style 3-5-cleft at the apex. Fruit dry, 3-5-celled.

7 LETTSÒMIA. Sepals 7. Petals 5-6, inner petals narrowest. Style short, crowned by 3-5 stigmas. Berry 3-5-celled.

TRIBE IV.

SAURAU'JEÆ. *Calyx deeply 5-parted, furnished with 2-3 bracteas. Petals alternating with the sepals, more or less connected together at the base. Stamens numerous, adhering to the base of the corolla. Anthers incumbent, inserted by the back, not adnate. Styles 3-5, distinct from the ovary. Seeds wingless. Albumen fleshy.*

8 SAURAU'JA. Petals 5, joined together to the middle. Styles 3-5. Capsule 3-5-celled, 3-5-valved; cells many-seeded. Anthers bursting by 2 pores at the apex.

9 APATE'LIA. Petals 5, joined together at the base. Stamens numerous, disposed in 5 bundles. Anthers bursting by 2 pores at the top. Styles 5. Capsule 5-celled, 5-valved, many-seeded.

TRIBE V.

LAPLA'CEÆ. *Calyx bractless, of 3-5 sepals, sometimes 5-parted. Petals usually 5, distinct. Stamens numerous, free, or connected at the base. Anthers adnate or versatile. Styles equal in number to the cells of the ovary, joined in 1, crowned by*

many-stigmas. Fruit 3-5-celled. Albumen fleshy or wanting. Seeds compressed or winged, rarely cochleate.

10 COCHLOSPE'RMUM. Calyx of 5 unequal sepals (f. 97. *a.*). Petals 5, emarginate at the apex (f. 97. *d.*). Filaments free. Anthers acuminated, 4-sided, opening by one pore. Style simple. Capsule globose, 3-5-celled. Seeds numerous, cochleate, woolly (f. 97. *h. g.*). Albumen fleshy.

11 LAPLA'CEA. Calyx of 4-5 sepals. Petals 5-9, equal. Stamens in 3 series, adnate to the base of the petals. Anthers kidney-shaped, 2-celled. Capsule 5-7-celled, 5-7-valved, woody; cells 3-seeded. Seeds winged, hanging from the central axis.

12 BONNE'TIA. Calyx 5-parted. Petals 5. Anthers 2-celled. Style trifid at the apex. Capsule 3-celled, 3-valved; valves bent in at the edges so much as to constitute dissepiments. Seeds linear, winged at both ends.

13 MAHU'REA. Calyx 5-sepalled. Petals 5. Anthers adnate. Style crowned by a 3-5-lobed stigma. Capsule 3-celled, 3-valved; valves bent in so much at the margins as to constitute dissepiments. Seeds minute, compressed, winged at both ends.

14 MARI'LA. Calyx of 4, rarely of 5 sepals. Petals 4-5. Stamens numerous, joined at the base; anthers adnate. Style crowned by a capitate 3-4-lobed stigma. Capsule 3-4-valved, 3-4-celled, with the margins of the valves bent inwards so as to form dissepiments, which are fixed to the central placenta. Seeds numerous, girded by a yellow fringe.

15 VENTENA'TIA. Calyx 3-sepalled (f. 98. *a.*), deciduous. Petals 11-12 (f. 98. *b.*). Anthers adnate, 2-celled (f. 98. *c.*). Capsule 5-celled (f. 98. *e.*); cells many-seeded.

16 CARAI'PA. Calyx 5-parted. Petals 5, inferior. Anthers fixed by the back. Style crowned by a 3-lobed stigma. Capsule 3-celled, 3-valved. Seeds sub-solitary, compressed, inserted in the large, trigonal, 3-winged, central placenta.

17 KIELMIE'RA. Calyx 5-parted, unequal. Petals 5. Anthers oblong, 2-celled, fixed by the back. Style crowned by 3 stigmas. Capsule 3-celled, 3-valved; valves bent in at the margins so much as to constitute dissepiments. Seeds girded by a membranous margin, extended at both ends.

18 ARCHITÆ'A. Calyx 5-parted. Petals 5. Stamens connate into 5 bundles at the base. Anthers 2-celled. Style simple. Capsule 5-celled, incompletely 5-valved. Seeds linear, rather winged.

19 GODÒYA. Calyx of many deciduous sepals. Petals 5. Stamens numerous, disposed in many rows, or collected into 5 bundles. Anthers long, biporose. Style simple. Capsule 3-5-valved, 3-5-celled, with the edges of the valves bent inwards, forming the dissepiments, many-seeded; seeds winged.

TRIBE VI.

GORDONIE'Æ. *Sepals 5, free, or joined together at the base. Petals usually connected at the base. Stamens numerous, monadelphous at the base. Anthers ovate, oscillatory. Styles 5, distinct or connected. Carpels 5, capsular, few or many-seeded, sometimes distinct, sometimes connected into a single fruit, with a dissepiment in the middle. Albumen wanting. Embryo straight, with an oblong radicle, and leafy cotyledons, which are wrinkled and plaited lengthwise, with an inconspicuous plumule.*

20 MALACHODE'NDRON. Calyx 5-cleft, furnished with 2 bracteas. Petals 5, crenulated. Ovary 5-furrowed. Styles 5, free. Stigmas capitate. Carpels 5, capsular, connected, 1-2-seeded.

21 STUA'RTIA. Sepals 5, connected almost to the middle, bibracteate. Petals 5. Style crowned by a 5-lobed stigma. Capsule woody, 5-celled, 5-valved; cells 1-2-seeded. Seeds wingless.

22 GORDÒNIA. Sepals 5, coriaceous (f. 99. *a.*). Petals 5, adhering to the tube of the stamens, and connected together at the base (f. 99. *d.*). Style crowned by 5 stigmas (f. 99. *f.*). Capsule 5-celled, 5-valved (f. 99. *c.*); cells 2-5-seeded. Seeds ending in a leafy wing.

23 BLU'MEA. Calyx 5-parted, unequal. Petals 5, obovate, free. Anthers almost sessile, disposed in a ring around the style, which is 5-cleft at the apex. Capsule 5-celled; cells many-seeded.

24 SCHÌMA. Calyx 5-cleft. Petals 5, connected together at the base, and adnate to the urceolus of the stamens, unequal, one of them is cucullate. Style crowned by a 3-lobed stigma. Capsule globose, 5-celled; valves with a dissepiment in the middle; cells 1-2-seeded. Seeds ending in a wing.

25 POLY'SPORA. Calyx girded by some deciduous accessary bracteas. Sepals and petals 5. Stamens monadelphous at the base. Style crowded by 5 stigmas. Capsule conical, 5-celled, 5-valved. Seeds numerous, imbricate, ending in a wing.

TRIBE VII.

CAMELLIE'Æ. *Sepals 5-9. Petals 5-7-9, usually cohering at the base. Stamens numerous, monadelphous, or polyadelphous at the base. Anthers versatile, 2-celled. Styles 3-5, connected at the base. Fruit 3-celled, 3-valved, few-seeded; valves with a dissepiment in the middle, or bent in at the margins so much as to form dissepiments. Albumen wanting.*

26 CAME'LLIA. Calyx girded by some accessary bracteas or sepals. Stamens polyadelphous, or monadelphous at the base. Valves of capsule bearing a dissepiment in the middle of each; central axis triquetrous.

27 THE'A. Calyx 5-parted. Petals 5-9, in 2-3 series. Stamens adhering to the base of the petals. Style 3-cleft. Capsule 3-lobed, 3-seeded; dissepiments formed from the inflexed margins of the valves.

Tribe I.

TERNSTRŒMIE'Æ (plants agreeing with *Ternstræ'mia* in important characters.) D. C. prod. 1. p. 523.

Calyx with 2 bracteas at the base. Sepals connected together at the base, and opposite the petals. Anthers adnate. Style 1. Stigma simple. Albumen fleshy.

I. TERNSTRŒ'MIA (Ternstrœm, a Swedish naturalist and traveller in China, who died at Palicandre in 1745.) Lin. fil. suppl. 39. D. C. prod. 1. p. 523.—Tonàbea, Juss. Toanàbeo, Aubl. guian. 1. p. 569.

LIN. SYST. *Polyándria, Monogýnia.* Calyx of 5 unequal sepals, furnished with 2 bracteas at the base. Petals 5, connected at the base into a monopetalous corolla. Stamens inde-

finite, inserted in the receptacle, and adhering to the base of the corolla. Anthers oblong, smooth, fixed by the base, commonly bursting lengthwise on the inside. Style simple. Stigma simple. Fruit coriaceous or fleshy, crowned by the permanent style, 2-5-celled; cells 3-4-seeded in *T. Brasiliénsis*, opening irregularly in 3-5-valves, with the valves seminiferous. Seeds oblong. Pedicels axillary, solitary, 1-flowered, furnished with a scale at the base, and with 2 bracteas just under the flower. Hilum situated at the top of the seed. Albumen fleshy. Embryo curved, with a long cylindrical radicle, and linear-entire cotyledons, pointing towards the umbilicus.—Trees or shrubs, with scattered coriaceous, entire or serrated leaves, with the petioles jointed at the base. Flowers axillary, solitary.—Species almost all American.

1 T. bre'vipes (D. C. prod. 1. p. 523.) leaves quite entire, obovate, somewhat emarginate; pedicels axillary, hardly longer than the flower. ♄. S. Native of South America. Flowers small, red. Coll. hort. rip. t. 38.

Short-peduncled Ternstrœmia. Fl. July, Aug. Clt. 1818. Sh.

2 T. peduncula'ris (D. C. l. c. and prod. 1. p. 523.) leaves quite entire, ovate-oblong, obtuse; pedicels lateral, thrice as long as the flower. ♄. S. Native of the West Indies. T. meridionàlis, Swartz, obs. 207. Flowers small, white.

Pedunculated-flowered Ternstrœmia. Fl. July, Aug. Clt. 1818. Tree.

3 T. linea'ta (D. C. l. c. and prod. 1. p. 523.) leaves quite entire, oblong, rather acute; pedicels lateral, drooping, scarcely longer than the flower. ♄. S. Native of Mexico. T. meridionàlis, Moc. et Sesse, fl. mex. icon. ined. Flowers white.

Lined-petalled Ternstrœmia. Shrub 6 feet.

4 T. sylva'tica (Cham. et Schlecht. Linnæa. 4. p. 221.) branches smooth; leaves lanceolate, obtusely acuminated; bracteas ovate, acute, under the calyx; petals not lined; anthers apiculate. ♄. S. Native of Mexico. Flowers white.

Wood Ternstrœmia. Shrub.

5 T. elli'ptica (Swartz, prod. p. 81.) leaves quite entire, elliptical, acute; pedicels lateral, twice as long as the petioles. ♄. S. Native of the West Indies. Flowers white.

Elliptic-leaved Ternstrœmia. Shrub.

6 T. Brasilie'nsis (St. Hil. fl. bras. 1. p. 298. t. 59.) leaves lanceolate or obovate-lanceolate, obtuse, or with a very short acumen, serrulated; leaflets of calyx roundish, denticulated; seeds spotted with red. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers white. Petals shorter than the calyx, with erose margins. Fruit 2-5-celled.

Var. mìnor (St. Hil, l. c.) leaves much smaller; flowers smaller; segments of corolla smaller. In the province of St. Paul.

Brasilian Ternstrœmia. Fl. March. Tree 15 feet.

7 T. carnòsa (St. Hil. fl. bras. 1. p. 299.) leaves obovate, or obovate-lanceolate, nearly entire, rather scabrous above; leaflets of calyx unequal, roundish, quite entire; seeds smooth, white. ♄. S. Native of Brazil in the province of Minas Geraes. This species comes near to *T. meridionàlis* of Mutis. Fruit 2-celled.

Fleshy-leaved Ternstrœmia. Shrub 10 feet.

8 T. meridiona'lis (Mutis, Swartz, prod. p. 81.) leaves obovate, lanceolate, entire, shiny on both surfaces; leaflets of calyx unequal, denticulated; fruit 2-celled. ♄. S. Native of South America. Flowers white.

Meridional Ternstrœmia. Shrub 10 feet.

9 T. puncta'ta (Swartz, prod. p. 81.) leaves entire, oblong, somewhat emarginate, denticulated, dotted on the margin; pedicels axillary, much longer than the petioles. ♄. S. Native of Guiana in woods. Taonàbo punctàta, Aubl. guian. 1. p. 571. t. 228. Flowers yellowish. Fruit 5-6-celled.

Dotted-leaved Ternstrœmia. Fl. Ju. Aug. Clt. 1820. Tree 20 ft.

10 T. clusiæfòlia (H. B. et Kunth, nov. gen. amer. 5. p. 207. t. 463. f. 1.) leaves oblong, obtuse, quite entire, covered with small black dots beneath; pedicels axillary, a little longer than the petioles. ♄. S. Native of South America on the mountains about Popayan. Flowers white.

Clusia-leaved Ternstrœmia. Tree 30 feet.

11 T. denta'ta (Swartz, prod. 81. but not of Mirb.) leaves serrate-toothed, oval-oblong, or oboval, acuminate; pedicels axillary and lateral, a little longer than the petioles; outer leaflets of calyx ovate-lanceolate, acute. ♄. S. Native of Guiana in woods. Toanàbo dentàta, Aubl. guian. 1. p. 569. t. 227. Flowers yellowish.

Toothed-leaved Ternstrœmia. Tree 28 feet.

12 T. salicifòlia (D. C. mem. l. c. and prod. 1. p. 524.) leaves serrulated, oblong, acuminated, almost veinless; pedicels 2-3, axillary, a little shorter than the petioles. ♄. S. Native of Guadaloupe in woods. Flowers yellowish.

Willow-leaved Ternstrœmia. Tree 20 feet.

13 T. venòsa (Spreng. new. entd. 1. p. 162.) leaves serrulately oblong, veiny; pedicels aggregate, axillary, a little shorter than the petioles. ♄. S. Native of Brazil. Flowers white.

Veiny-leaved Ternstrœmia. Fl. June, Aug. Clt. 1824. Shrub 6 feet.

14 T. ? quinquepartìta (Ruiz, et Pav. syst. 180.) leaves obsoletely-serrulated, obovate; corolla 5-parted. ♄. S. Native of cold parts of the Andes of Peru in woods. Stamens disposed in 5 bundles. This is perhaps a distinct genus.

Five-parted-flowered Ternstrœmia. Tree 20 feet.

15 T. ? globiflòra (Ruiz et Pav. syst. 180.) leaves quite entire, oblong; corolla globose, 5-toothed. ♄. S. Native of cold parts of the Andes of Peru in woods. Stamens disposed in 5 bundles. Flowers white. This species, with the preceding, will probably form a distinct genus.

Globe-flowered Ternstrœmia. Tree 12 feet.

16 T. rubiginòsa (Jack, mal. misc. 1. no. 2. p. 39.) leaves ovate, spiny-serrated, hoary beneath; stamens monadelphous; flowers lateral and axillary, in bundles; peduncles and calyxes covered with glandular hairs; fruit 3-celled. ♄. S. Native of Sumatra. Cleyèra rubiginòsa, Spreng. syst. 3. p. 596.

Rusty Ternstrœmia. Tree 16 feet.

17 T. pentape'tala (Jack, mal. misc. 1. no. 2. p. 40.) leaves obovately-lanceolate, spiny-toothletted, smooth; flowers lateral, in bundles; peduncles smooth; fruit 3-celled. ♄. S. Native of Pulo-Pinang. Cleyèra pentapétala, Spreng. syst. 3. p. 596.

Five-petalled Ternstrœmia. Tree 20 feet.

18 T. ? corymbòsa (Smith in Rees' cycl. 35.) leaves opposite, elliptic, acuminated, entire; panicles terminal, forked, corymbose, many-flowered; calyx bractless. ♄. S. Native of Guiana. Flowers white.

Corymbose-flowered Ternstrœmia. Tree.

Cult. All the species of this genus will thrive well in a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, in heat.

Tribe II.

EURYE'Æ (plants agreeing with *Eurya* in the corolla being monapetalous, and the style being cleft at the apex). Calyx furnished with 2 bracteas at the base, of 5 sepals or 5 lobes. Corolla 5-parted. Anthers adnate. Styles crowned by 3-5 distinct stigmas.

II. ANNESLE'A (in honour of George Annesley, Lord Mountnorris, F. R. and L. S., who collected many plants on his travels in the north of Africa and the south of Europe, while Viscount Valentia.) Wall. pl. rar. asiat. 1. p. 5. t. 5.

Lin. syst. *Polyándria, Monogýnia.* Calyx bibracteolate at the base, profoundly divided into 5 nearly equal lobes, imbricate in æstivation. Corolla monopetalous, 5-cleft, contracted at the throat, with the segments opposite the calycine lobes. Stamens numerous, distinct, erect, inclosed, disposed in a double series on the receptacle. Anthers linear, smooth, adnate, ending in a long point. Style 1, cylindrical, crowned by 3 awl-shaped stigmas. Berry dry, globose, crowned by the calycine lobes, 3-celled; cells 1-3-seeded. Seeds red, hanging from the top of the central placenta, arillate. Embryo replicate, cylindrical, inverted.—A tree with exstipulate, entire, scattered leaves, and axillary, fragrant, ventricose, yellowish-white flowers on long peduncles. This genus approaches *Cleyèra*, from which it differs in the linear, smooth anthers, while in *Cleyèra* they are hispid.

1 A. fra`grans (Wall. l. c.) ♄. S. Native of the East Indies in woods near Moalmeyn, in Martabania. Leaves oblong-lanceolate, obtuse, shining above, pale beneath. Peduncles long, axillary.

Fragrant Anneslea. Fl. Jan. Tree 30 feet.

Cult. A mixture of turfy loam and peat will suit this tree, and ripened cuttings will root in sand under a hand-glass, in heat.

III. GEE`RIA (Geer, the name of some botanist known to Blume?) Blum. bijdr. ex Schlecht. Linnæa. 1. p. 660.

Lin. syst. *Diœ´cia, Polyándria.* Flowers dioecious. Calyx of 5 sepals, furnished with 2 bracteas at the base. Corolla 5-parted, with rounded segments. Male flowers with numerous stamens, adhering to the base of the corolla, and with a sterile ovary. Female flowers with a globose ovary, and 3-5 styles, which are connected at the base, crowned by as many acute stigmas. Berry 5-celled, many-seeded. Seeds in 2 series, fixed to the top of the central axis. Albumen somewhat cartilaginous. Cotyledons flat-convex. This genus comes near to *Eùrya*, but differs in the flowers being dioecious, not polygamous.—Trees or shrubs, with alternate, serrated, exstipulate leaves, and axillary 1-flowered peduncles.

1 G. serra`ta (Blum. l. c.) ultimate branches tomentose; leaves lanceolate, acuminated, puberulous beneath; flowers crowded, axillary; female ones pentagynous. ♄. S. Native of Java.

Var. β, sericea (Blum. l. c. p. 661.) ultimate branches silky; leaves puberulous on the nerves beneath. ♄. S. Native of Java.

Serrated-leaved Geeria. Tree.

2 G. angustifòlia (Blum. l. c.) leaves narrow-lanceolate, acuminated, serrated, silky beneath, as well as the ultimate branchlets; female flowers tri-pentagynous. ♄. S. Native of Java.

Narrow-leaved Geeria. Tree.

3 G. gla`bra (Blum. l. c.) branches smooth; leaves oblong-lanceolate, acuminated, smooth; flowers crowded, axillary. ♄. S. Native of Java.

Smooth Geeria. Tree.

4 G. obova`ta (Blum. l. c.) branches smooth; leaves obovate, entire at the base, retuse, and obtusely serrated at the apex, smooth; flowers few, axillary. ♄. S. Native of Java.

Obovate-leaved Geeria. Tree.

Cult. The species will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

IV. EU`RYA (from *ευρυς, eurys*, large; flowers large.) Thunb. fl. jap. p. 11. Browne, pl. chin. diss. p. 7. D. C. prod. 1. p. 525.

Lin. syst. *Polygàmia, Monœ`cia.* Flowers polygamous. Calyx 5-parted. Petals 5, roundish, somewhat connected at the base. Stamens 12-15, in one series. Anthers smooth, tetragonal. Style 3-5-cleft at the apex. Berry 3-celled, many-seeded. Seeds reticulated.—Asiatic evergreen shrubs, with axillary pedicels and white flowers.

1 E. Japo´nica (Thunb. jap. p. 191. t. 25.) branches smooth; leaves elliptical, acute; flowers axillary. ♄. G. Native of Japan near Nagasaki. Flowers white.

Japan Eurya. Shrub 4 feet.

2 E. Chine´nsis (Brown. l. c. with a figure.) ultimate branches pubescent; leaves oval-cuneated; flowers axillary. ♄. G. Native of China in the province of Kiang-si and Quangtong, in fields and on hills. Lodd. bot. cab. t. 1213. Flowers white.

Chinese Eurya. Fl. Feb. Clt. 1818. Shrub 2 feet.

3 E. multiflòra (D. C. l. c. and prod. 1. p. 525.) branches hairy; leaves elliptical-oblong, acuminate; flowers axillary, disposed along the branches in fascicles, usually beneath the leaves. ♄. G. Native of Nipaul. Flowers white.

Many-flowered Eurya. Clt. 1823. Shrub 4 feet.

4 E. acumina`ta (D. C. l. c. and prod. 1. p. 525.) branchlets villous; leaves elliptical-oblong, acuminate; flowers few, axillary. ♄. G. Native of Nipaul. Flowers white?

Acuminate-leaved Eurya. Shrub 3 feet.

Cult. All the species of *Eùrya* will thrive in a mixture of loam, peat, and sand; and cuttings will root in sand or mould under a hand-glass, in a moderate heat.

Tribe III.

FREZIE`REÆ (plants agreeing with *Frezièria* in the petals being distinct, and in the style being cleft at the apex). D. C. prod. 1. p. 525. Calyx furnished with 2 bracteas at the base. Petals unconnected, alternating with the sepals. Anthers adnate. Style 1. Stigmas 2-5, distinct. Seeds wingless, with fleshy albumen and a somewhat curved embryo.

V. CLEYE`RA (Andrew Cleyer, M. D. a Dutch physician, once resident in Batavia). Thunb. fl. jap. p. 12. D. C. prod. 1. p. 525.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-sepalled. Petals 5, unconnected. Stamens adhering to the base of the petals. Anthers hispid from retrograde bristles. Style filiform. Stigmas 2-3. Berry dry, 2-3-celled. Shrubs with the habit of *Ternstræ`mia*. All natives of Asia.

1 C. Japo´nica (Thunb. fl. jap. p. 224.) leaves oblong-lanceolate, veinless, serrulated at the apex. ♄. G. Native of Japan near Nagasaki. Kæmpf. amœn. 5. p. 774. icon. Ternstræ`mia Japónica, Thunb. in Lin. soc. trans. 2. p. 335. Flowers white or yellowish.

Japan Cleyera. Clt. 1820. Tree 20 feet.

2 C. ochna`cea (D. C. mem. soc. his. nat. gen. vol. 1. p. 524.) leaves oval-oblong, acute at both extremities, entire, veiny above; peduncles 1-flowered, axillary, solitary or in fours, twice as long as petioles. ♄. G. Native of Japan. Sakàki, Kæmpf. amœn. 777. Banks, icon. Kæmpf. t. 33. Flowers yellow.

Ochnaceous Cleyera. Tree 20 feet.

3 C. ochnoìdes (Wall. mss. in herb. Lin. soc.) leaves coriaceous, oblong, tapering to both ends, smooth, entire, obtuse or acuminate; pedicels solitary or numerous, rising from a short peduncle, drooping. ♄. S. Native of the East Indies. In the specimen we can see no trace of bracteas, and the calyx is 5-lobed, not of 5 sepals. It is therefore probably a distinct genus. Frezièra ochnoìdes, Wall. l. c.

Ochna-like Cleyera. Shrub.

4 C. lu`shia; leaves obovate or elliptical, quite entire, almost veinless, and are as well as branches smooth; peduncles 1-flowered, axillary, solitary, or in fours, smooth, straight, twice as long as petioles. ♄. G. Native of Upper Nipaul at Sirinagur, where it is called *Lushi-swa*. C. ochnàcea.

Var. β Wallichiàna (D. C. prod. 1. p. 524.) Ternstrœ'mia Lùshia, Hamilt. mss. in D.Don, prod. 1. p. 225. Flowers yellow?

Lushia Cleyera. Fl. June. Tree 20 feet.

Cult. The species of *Cleyèra* will thrive well in a mixture of loam, sand, and peat; and ripe cuttings will root in sand under a hand-glass, in heat.

VI. FREZIE'RA (this genus is dedicated by Swartz to A. F. Frezier, a French engineer and traveller in Chili and the South Sea, who published his travels in 1716). Swartz fl. ind. occid. 2. p. 971. D. C. prod. 1. p. 524.—Eròteum, Swartz. prod. p. 85.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-sepalled. Petals 5, broadest at the base. Filaments free. Anthers smooth, somewhat cordate. Style 3 or 5-cleft at the apex. Berry dry, 3-5-celled; cells many-seeded. American trees, with the habit of *Laùrus.* Pedicels axillary.

1 F. thæoìdes (Swartz, fl. ind. occid. p. 972.) leaves ovate-lanceolate, serrulate-toothed, smooth on both surfaces; pedicels solitary, 1-flowered. ♄. S. Native of the mountains of Jamaica. Eròteum thæoìdes, Swartz. prod. p. 85. Flowers white; anthers yellow.

Tea-like Freziera. Clt. 1818. Tree 40 feet.

2 F. undula'ta (Swartz. fl. ind. occid. p. 974.) leaves elliptical-lanceolate, acuminate, serrated, smooth; flowers axillary, crowded. ♄. S. Native of the Caribbee Islands. Eròteum undulàtum, Swartz, prod. 85. Flowers white.

Waved-leaved Freziera. Tree 50 feet.

3 F. nervòsa (H. et B. pl. equin. 1. p. 31. t. 9.) leaves lanceolate, toothed, smooth above, pubescent beneath; pedicels many, in fascicles. ♄. S. Native of South America in cold parts of the province of Pasto. Flowers white.

Nerved-leaved Freziera. Tree 40 feet.

4 F. serícea (H. B. pl. equin. 1. p. 29. t. 8.) leaves elliptic-lanceolate, acuminated, serrulate, silvery beneath; flowers 2 or 3 together, axillary, sessile. ♄. S. Native of South America between Quito and Popayan. Flowers white.

Silky-leaved Freziera. Tree 40 feet.

5 F. chrysophy'lla (H. B. pl. equin. 1. p. 27. t. 7.) leaves lanceolate-oblong, smooth above, villous beneath from golden silky down; pedicels axillary, few, short. ♄. S. Native of South America about Popayan. Flowers white.

Golden-leaved Freziera. Tree 30 feet.

6 F. cane'scens (H. B. pl. equin. 1. p. 25. t. 6. nov. gen. amer. 5. p. 211. t. 463. f. 2.) leaves elliptic-oblong, serrulated, hoary from down beneath; pedicels 1-2, axillary. ♄. S. Native of the Andes of Peru. Flowers white.

Hoary-leaved Freziera. Tree 30 feet.

7 F. reticula'ta (H. B. pl. equin. 1. p. 23. t 5.) leaves ovate-lanceolate, serrated, downy beneath; pedicels 3-5 together, axillary, fascicled. ♄. S. Native of the Andes of Peru near Almaguer, Flowers white.

Reticulate-leaved Freziera. Tree 40 feet.

Cult. These trees will thrive well in a mixture of sand, loam, and peat; and cuttings will root in sand under a hand-glass, in heat.

VII. LETTSO'MIA (in honour of John Cockley Lettsom, M. D. F.R.S. an English naturalist, who has given a history of the tea-tree, as well as a work on the means of preserving objects of natural history, in 1772). Ruiz et Pav. prod. fl. per. p. 77. t. 14. D. C. prod. 1. p. 525.

Lin. syst. *Polyándria, Monogýnia.* Calyx 7-sepalled. Petals 5-6, overlapping each other at the bottom, inner ones narrowest. Filaments free. Style very short. Stigmas 3-5. Berry 3-5-celled; cells many-seeded.

1 L. tomentòsa (Ruiz et Pav. syst. 134.) leaves lanceolate, quite entire, clothed with silky down beneath; berry 5-celled. ♄. S. Native of Peru in groves. Flowers white.

Downy Lettsomia. Clt. 1823. Shrub 4 feet.

2 L. lana'ta (Ruiz et Pav. syst. p. 135.) leaves lanceolate, obsoletely serrulated, woolly; berry 3-celled. ♄. S. Native of Peru in groves. Flowers white?

Woolly-leaved Lettsomia. Shrub 4 feet.

Cult. Lettsòmia is a genus of beautiful shrubs. The species will thrive well in a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, in heat.

Tribe IV.

SAURA'UJEÆ (plants agreeing with *Sauràuja* in important characters). D. C. prod. 1. p. 525. Calyx furnished with 2-3 bracteas. Petals alternating with the sepals, which are more or less connected at their base into a monopetalous corolla. Stamens numerous, monadelphous at the base, adhering to the lower part of the corolla. Anthers inserted by their back, not adnate, opening by 2 pores at the apex. Styles 3-5, distinct from the ovary, but sometimes connected together at the base. Seeds not sufficiently known.

VIII. SAURAU'JA (from Sauraujo, the name of some Portuguese botanist, known to Willdenow). Willd. nov. act. soc. nat. cur. berol. 3. p. 406. t. 4. D. C. prod. 1. p. 525.

Lin. syst. *Polyándria, Tetra-Pentagýnia.* Calyx 5-parted, Petals 5, connected together to their middle. Styles 3-5, sometimes connected at the base. Berry furrowed, filled with a shining pulp, with as many cells as there are styles, many-seeded; seeds minute, angular. Albumen fleshy. Embryo linear, with short cotyledons and an obtuse, terete radicle. American and Asiatic trees and shrubs with the habit of *Laùrus.* Leaves serrated. Flowers of all white, axillary and lateral.

1 S. exce'lsa (Willd. l. c.) leaves oblong-obovate, acutish, quite entire, scabrous above, hairy beneath at the veins; peduncles long, covered with brown hairs, trichotomously-panicled at the apex. ♄. S. Native of South America on wooded mountains in the province of Caraccas.

Tall Saurauja. Fl.? Clt. 1824. Tree 50 feet.

2 S. villòsa (fl. mex. icon. ined. under the name of *Dàvya*) leaves elliptic, acuminated at both ends, serrated from the middle to the top, villous beneath as well as the branchlets and peduncles. ♄. S. Native of Mexico.

Villous Saurauja. Tree 20 feet.

3 S. panicula'ta (Wall. mss. in herb. soc. Lin.) leaves long, oblong-lanceolate, acuminated, with spinose serratures, clothed with rusty tomentum beneath, with the midrib and petioles beset with bristles; peduncles extra-axillary, panicled at the top, shorter than the leaves. ♄. S. Native of the East Indies.

Panicled-flowered Saurauja. Tree.

4 S. serra'ta (Moc. et Sesse, fl. mex. icon. ined. under *Dàvya.* D. C. prod. 1. p. 526.) leaves elliptic, tapering to the base, acute, serrated, smooth; branches, petioles, and peduncles velvety with rusty down. ♄. S. Native of Mexico.

Serrated-leaved Saurauja. Tree?

5 S. Nipaule'nsis (D. C. mem. soc. gen. 1. p. 421.) leaves lanceolate, acuminated, serrated, smooth above, covered with brown down beneath as well as the branchlets; racemes many-flowered, panicled, on long peduncles. ♄. S. Native of Nipaul at Narainhetty, where it is called *Tonshi.* Ternstrœ'mia racemòsa, D. Don, prod. fl. nep. p. 225. Tónshia polypétala and Dillènia racemòsa, Hamilt. mss. Leaves a span long and 2 or 3 inches in breadth.

Nipaul Saurauja. Fl. Aug. Clt. 1824. Tree 30 feet.

6 S. lanceola'ta (D. C. mem. soc. gen. 1. p. 241.) leaves oblong-lanceolate, acuminate, very minutely serrated, adult ones smooth, younger ones furnished with rufous scales at the nerves;

peduncles axillary, about equal in length with the petioles, umbellate at the apex. ♄. S. Native of Java. Vanalphìmia lanceolàta, Lechen, mss.

Lanceolate-leaved Saurauja. Tree.

7 S. nudiflòra (D. C. mem. soc. gen. 1. p. 241.) leaves obovate, rather acute, somewhat serrated, adult ones smooth on both surfaces; peduncles lateral, 1-flowered, solitary. ♄. S. Native of Java.

Naked-flowered Saurauja. Tree.

8 S. bracteola'ta (D. C. l. c.) leaves oval, tapering to both ends, a little serrated, smooth; peduncles lateral, simple, or branched, and furnished with a few minute bracteas. ♄. S. Native of Java.

Bracteolate-peduncled Saurauja. Tree.

9 S. spadi'cea (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 662.) leaves lanceolate, acuminated, serrulated, smooth above but rusty beneath; umbels axillary, crowded, shorter than the petioles; calyx smooth. ♄. S. Native of Java.

Chesnut-coloured-leaved Saurauja. Tree.

10 S. bracteòsa (D. C. l. c.) leaves oval, cordate at the base, a little serrated; peduncles axillary, trichotomous; bracteas oblong, length of pedicels. ♄. S. Native of Java.

Var. β? punctàta (D. C. prod. 1. p. 526.) leaves more serrated, dotted on the upper surface with down.

Large-bracted Saurauja. Tree.

11 S. tri'stYla (D. C. l. c.) leaves elliptic, acutish at both ends, finely serrated, smooth; petioles and pedicels covered with little scales; pedicels axillary, simple, or trifid, disposed in bundles. ♄. S. Native of the Moluccas.

Three-styled Saurauja. Tree.

12 S. gigante'a (Nor. icon. ined. under the name of *Scàpha*. D. C. prod. 1. p. 526.) leaves oval, cordate at the base, acuminated, serrated, brown-velvety beneath; peduncles axillary, trichotomous, almost without bracteas, one-half shorter than the leaves. ♄. S. Native of Java.

Gigantic Saurauja. Tree 50 feet.

13 S. crenula'ta (D. C. l. c.) leaves obovate, cuneated at the base, somewhat acute at the apex, crenulately serrated; peduncles 1-flowered, aggregated on the old branches. ♄. S. Native of Java. Vanalphìmia Djìnote, Lech. mss.

Crenulate-leaved Saurauja. Tree 20 feet.

14 S.? cauliflòra (Nor. icon. ined. under the name of *Scàpha*,) leaves oblong, acuminate, awnedly serrated, smooth above, but clothed with rusty strigose tomentum beneath; pedicels 1-flowered, collected together in bundles on the trunk; calyx smooth. ♄. S. Native of Java on the banks of the river Sudan. Fruit baccate, therefore this plant may be a distinct genus.

Stem-flowering Saurauja. Tree 20 feet.

15 S. Reinwardtia'na (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 662.) leaves elliptic-oblong, acuminated; obtuse at the base, serrulated, rough on the veins, as well as the branches; peduncles axillary, usually solitary, longer than the petioles, umbellately 3-flowered, bracteate; bracteas oblong, lanceolate, leafy; calyx hairy. ♄. S. Native of Java.

Reinwardt's Saurauja. Tree.

16 S. hirsu'ta (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 661. and 662.) leaves oval, acuminated, unequal at the base and rounded, scabrous above, but covered with hispid hairs beneath, as well as the branches and peduncles; peduncles axillary, umbellately 3-flowered, longer than the petioles; bracteas spatulate; calyx hairy. ♄. S. Native of Java.

Hairy Saurauja. Tree 20 feet.

17 S. pe'ndula (Blum. l. c.) leaves oblong, smooth, broadest above, and tapering to the base, with glandular serratures; peduncles axillary, elongated, nodding, 2-3-cleft, much longer than the petioles; pedicels usually 3-flowered, umbellate; calyx smooth. ♄. S. Native of Java.

Pendulous-flowered Saurauja. Tree.

18 S. cunea'ta (Blum. l. c.) leaves cuneated, acute, serrulated above, smooth; peduncles filiform, axillary, solitary, one-half shorter than the leaves, 3-flowered at the apex, bracteolate; calyx smooth. ♄. S. Native of Java.

Cuneated-leaved Saurauja. Tree.

19 S. micra'ntha (Blum. l. c.) leaves oblong, acuminated, acutish or obtuse at the base, serrulated, strigose on both surfaces, as well as branches and peduncles; racemes crowded, axillary, and lateral bracteolate, shorter than the petioles; calyx smooth. ♄. S. Native of Java.

Small-flowered Saurauja. Tree.

20 S. Noronhia'na (Blum. l. c.) leaves oval, acuminate, obtuse at the base, callosely serrated, covered with strigose scales on both surfaces; peduncles axillary, crowded, 1-flowered, nodding; calyx smooth. ♄. S. Native of Java. Petioles and branches strigosely muricated.

Noronha's Saurauja. Tree.

21 S. Blumea'na (Spreng. syst. app. p. 210.) leaves oval, acuminate, cordate at the base, setaceously serrulated, smooth above, but covered with brown villi beneath; younger ones covered with strigose hairs on both surfaces, as well as the petioles and branches; peduncles axillary, trichotomously cymose, shorter than the petioles, bracteate; bracteas broad-lanceolate; calyx hairy. ♄. S. Native of Java. S. gigantèa, Blume, l. c. but not of Noronha.

Blume's Saurauja. Tree.

Cult. Sauraúja is a beautiful genus of trees, with fine leaves, and rather large white flowers. The species will thrive well in a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, in heat.

IX. APATE'LIA (from απατηλος, *apatelos*, false. This genus does not differ from *Sauraúja* unless in the disposition of the stamens, which is not always constant). D. C. mem. soc. gen. vol. 1.—Palàva, Ruiz et Pav. prod. fl. per. p. 88. t. 22. but not of Cav.

Lin. syst. *Polyadélphia, Polyándria*. Calyx 5-parted. Petals 5, somewhat joined together at the base. Stamens numerous, disposed in 5 bundles. Anthers bursting by 2 pores at the apex. Stigmas 5. Capsule 5-celled, 5-valved.—Trees with fine leaves, and axillary peduncles bearing white flowers.

1 A. lanceola'ta (Ruiz et Pav. syst. 181. under the name of *Palàva*,) leaves oval-oblong, acuminated at both ends, serrated, rusty beneath; branches, petioles, and peduncles very hairy. ♄. S. Native of Peru in the mountains about Chincao.

Var. β, pedunculàris (D. C. prod. 1. p. 526.) leaves ovate at the base; peduncles 4 times longer than the petioles. ♄. S. Native of Peru.

Lanceolate-leaved Apatelia. Tree 20 feet.

2 A. tomentòsa (H. B. et Kunth, nov. gen. amer. 7. p. 222. t. 650. under the name of *Palàva*,) leaves obovate-lanceolate, sharply toothletted, rough above, clothed with white down beneath, as well as the branchlets; panicles axillary, bracteated. ♄. S. Native of New Granada in the kingdom of Quito near Popayan. Sauraúja tomentòsa, Spreng. syst. app. p. 211.

Downy Apatelia. Tree 30 feet.

3 A. glabra'ta (Ruiz et Pav. syst. 181. under the name of *Palàva*,) leaves oblong, acute, serrulate, almost smooth on both surfaces; branches, petioles, and peduncles covered with small strigose hairs. ♄. S. Native of Muna among weeds.

Smoothish Apatelia. Shrub 4 to 10 feet.

4 A. biserra'ta (Ruiz et Pav. syst. 181. under the name of *Palàva*,) leaves obovate-oblong, doubly serrated; racemes branched; pedicels 3-flowered. ♄. S. Native of Peru in shady places. Sauraúja biserràta, Spreng. syst. app. p. 211.

Twice-serrated-leaved Apatelia. Shrub 12 feet.

5 A. sca'bra (H. B. et Kunth, nov. gen. amer. under *Palàva*, 7. p. 221. t. 648.) branches, panicles, petioles, and calyx setose; leaves cuneate, oblong, denticulated, scabrous. ♄. S. Native of New Grenada. Panicles axillary. Filaments adhering to the base of the petals, but free from each other.

Scabrous Apatelia. Tree 24 feet.

Cult. See *Sauràuja* for cultivation and propagation.

Tribe V.

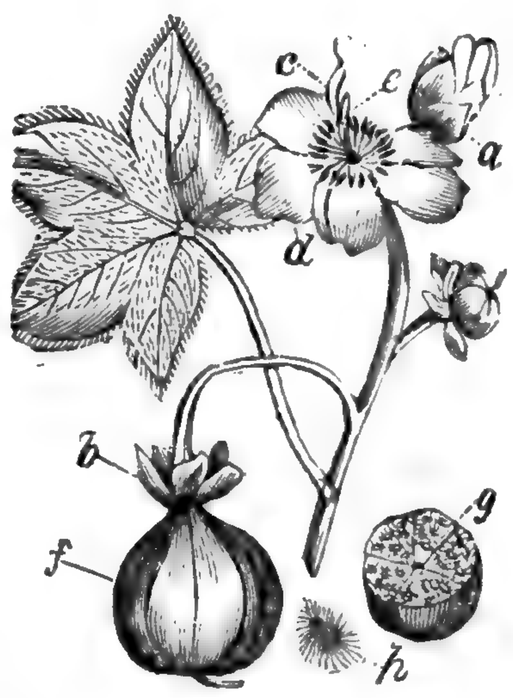
LAPLA'CEÆ (plants agreeing with *Laplàcea* in many important characters). D. C. prod. 1. p. 526.

Calyx bractless, of 3-5 sepals. Petals sometimes exceeding the number of sepals. Stamens numerous, free, or connected at the base; anthers adnate or versatile Styles connected or free. Fruit 3-5-celled. Albumen fleshy or wanting..—The tribe contains elegant trees, with fine leaves, and large shewy flowers.

X. COCHLOSPE'RMUM (from *κοχλω, cochlo*, to twist, and *σπερμα, sperma*, a seed; in allusion to the seeds being rather curved, f. 97. *h*.) Kunth, diss. mal. p. 6. nov. gen. amer. 7. p. 526. D. C. prod. 1. p. 527.

Lin. syst. *Polyándria. Monogýnia.* Calyx of 5, permanent, oval-oblong, blunt, unequal, imbricate sepals (f. 97. *a*.), which at length become reflexed, 2 outer ones smallest (f. 97. *b*.). Petals 5 (f. 97. *d*.), permanent, somewhat ovate, emarginate at the apex, unequal-sided, twisted in the bud. Stamens numerous; filaments filiform, smooth; anthers fixed by the base, linear, 4-sided and 4-celled, opening by a single pore at the apex. Style long, filiform, hooked at the top (f. 97. *c*.). Capsules girded by the permanent calyx, petals, and stamens, ovate-globose, 3-5-celled, 3-5-valved (f. 97. *f*.). Valves bearing incomplete dissepiments in the middle. Seeds numerous, somewhat cochleate or kidney-shaped (f. 97. *h. g*.), covered with wool. Albumen fleshy. Embryo slender, with the radicle at the sharpest end of the seed pointing towards the hylum; cotyledons entire, incumbent.—Trees or shrubs, with alternate, stipulate, lobed leaves, with the petioles jointed at the base. Flowers large, yellow, panicled, with the peduncles articulated at the base.

FIG. 97.



1 C. gossy'pium (D. C. prod. 1. p. 527.) lobes of leaves 5, very entire. ♄. S. Native of the East Indies. Bómbax grandiflòrum, Sonn. voy. ind. 2. p. 235. t. 133. Bómbax gossýpium, Lin. syst. 517. Cav. diss. 5. p. 297. t. 157. Bòmbax Cóngo, Burm. ind. 145. Leaves almost like those of *Gossýpium religiòsum*, tomentose beneath. Flowers large, yellow. (f. 97.).

Cotton-like Cochlospermum. Clt. 1822. Tree 50 feet.

2 C. Orinoce'nse (Mart. fl. bras. 1. p. 83.) lobes of leaves 5-7, digitate, smooth, entire. ♄. S. Native of New Spain. Bómbax Orinocénse, H. B. et Kunth, nov. gen. amer. 5. p. 234. Flowers large, yellow.

Orinoca Cochlospermum. Clt. 1820. Tree 20 feet.

3 C. insi'gne (St. Hil. pl. usu. bras. no. 57.) leaves coriaceous, palmately 5-lobed; lobes conduplicate, coarsely, sharply, and doubly serrated, adult ones smooth. ♄. S. Native of Brazil in the provinces of Minas Novas and Minas Geraes. Flowers large, yellow. Maximiliàna règia, Mart. et Schrank, bot. zeit. regensb. 1819. p. 452. Wittelsbáchia insígnis, Mart. fl. bras. 1. p. 81. t. 55. C. hibiscoìdes, H. B. et Kunth, nov. gen. amer. 7. p. 223. C. serratifòlium, D. C. prod. 1. p. 527. Bómbax hibiscifòlium, Willd. herb. In Brazil this plant is called *Butua do Curvo*, where a decoction of the roots are used against internal pain, especially that which is the result of falls or other accidents; this decoction will cure an abscess although of considerable standing.

Shewy Cochlospermum. Fl. May, Sept. Tree 30 feet.

4 C. vitifòlium (Spreng. syst. app. p. 206.) lobes of leaves crenate-serrated, smooth on both surfaces. ♄. S. Native of New Spain. Bómbax vitifòlium, Willd. enum. p. 720. Wittelsbáchia vitifòlia, Mart. nov. gen. 1. p. 83. Flowers large, yellow.

Vine-leaved Cochlospermum. Clt. 1820. Tree 30 feet.

Cult. *Cochlospérmum* is a genus of magnificent trees. The species thrive well in a mixture of loam and peat. Cuttings should not be too ripe, and they should be taken off at a joint, and if planted in sand they will root freely under a hand-glass, in a moist heat. Plants raised from seeds make finer trees.

XI. LAPLA'CEA (in honour of Marquis La Place, the celebrated French mathematician). H. B. et Kunth, nov. gen. amer. 5. p. 207. t. 461. D. C. prod. 1. p. 527. Hæmochàris, Sal.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 4 or 5 deciduous, rather orbicular, concave, imbricate, unequal sepals. Petals 5-9, free, but unequal-sided, twisted in the bud. Stamens numerous, disposed in 3 rows, adnate to the base of the petals in *L. speciòsa*, but free in the rest; anthers versatile, 2-celled, bursting lengthwise behind. Ovary sessile, 5-7-celled; cells 3-seeded. Styles 5-7, joined into 1 or free. Capsules woody, 5-7-celled, 5-7-valved from the top to the middle; central column thick, bearing the seeds. Seeds oblong, pendulous, ending in a wing. Albumen wanting. Embryo linear, straight, with a short, superior radicle, and ovate, entire cotyledons.—Trees or shrubs; leaves scattered, exstipulate, entire, coriaceous, with the petioles articulated at the base. Flowers axillary, solitary, bractless, with the peduncles jointed at the base.

1 L. speciòsa (H. B. et Kunth, l. c.) leaves oblong, quite entire, coriaceous, smooth; flowers large, axillary, solitary, on peduncles; styles 5, connate; capsule 5-valved, 5-celled. ♄. S. Native of South America between Gonzana and Loxa. Flowers large, white, very shewy. Petals 9.

Shewy Laplacea. Tree 20 feet.

2 L. semiserra'ta (St. Hil. fl. bras. 1. p. 306.) leaves lanceolate, dentately-serrated, glabrous; calyx and corolla silky on the outside; styles free. ♄. S. Native of Brazil in the provinces of Rio Janeiro and Minas Geraes. Hæmochàris semiserràta, Mart. et Zucc. fl. bras. 1. p. 107. t. 66. Wikstrœ'mia fruticòsa, Schrad. in gœtt. anz. 1821. p. 710. Lindlèya, Nees in bot. zeit. 1821. p. 299. Petals 5-8, white, unequal-sided. Styles 5-7, crowned by bifid stigmas. Capsule 5-7-valved from the top to the middle.

Var. β, acuminàta (St. Hil. l. c. p. 301.) leaves lanceolate, acuminated, sharply serrated, very narrow at the base, cuneated, longer than the petioles. Province of St. Paul.

Half-serrated-leaved Laplacea. Fl. year. Tree 30 feet.

3 L. hæmato'xylon; leaves ovate, acuminated, serrated; styles 5, distinct; fruit oblong, somewhat pentagonal; pedicels very thick, short; petals 5. ♄. S. Native of Jamaica. Gordònia hæmatóxylon, Swartz, fl. ind. occ. 2. p. 1199. Flowers white to flesh-coloured.

Red-wooded Laplacea. Tree 16 feet.

4 L. tomentòsa; leaves obovate, unequal-sided, nearly entire, smooth above, but tomentose beneath; flowers terminal, solitary; petals 5. ♄. S. Native of Brazil in the province of St. Paul. Hæmochàris tomentòsa, Mart. fl. bras. 1. p. 106. t. 67. Flowers white. Styles 5, free. Capsule 5-celled.

Tomentose-leaved Laplacea. Fl. Dec. Shrub 10 feet.

Cult. *Laplàcea* is a very shewy genus of small trees. They will thrive well in a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, in a moderate heat.

XII. BONNE'TIA (in honour of Charles Bonnet, a French naturalist; he wrote some botanical papers in 1754.) Mart. et Zucc. fl. bras. 1. p. 115. t. 100. but not of Schreb.

Lin. syst. *Polyándria, Monogýnia.* Calyx permanent, 5-parted, imbricate. Petals 5, equal, free, but unequal-sided, twisted in æstivation. Stamens indefinite, smooth, free, filiform, permanent; anthers fixed above the base, 2-celled, each cell opening by a pore at the base. Style trifid at the apex, each lobe terminated by a peculiar kind of stigma. Capsule girded round the base by the permanent calyx and stamens, 3-celled, 3-valved; valves bent in at the edges so much as to constitute dissepiments, central column awl-shaped, placentiferous, each placenta opposite the valves. Seeds numerous, linear. Integument thin, drawn out at both ends.—Elegant middle-sized trees or shrubs. Leaves scattered, exstipulate, coriaceous, entire, 1-nerved, marked with transverse veins, with the petioles articulated at the base. Flowers large, terminal; peduncles 1 or many-flowered, articulated at the base.

1 B. a'nceps (Mart. fl. bras. 1. p. 115. t. 100. B) leaves obovate-oblong, on short petioles, smooth; peduncles axillary, 3-flowered; pedicels involucrated at the base. ♄. S. Native of Brazil in the province of Rio Janeiro in sandy places. Petals white, mixed with rose-colour, smooth.

Two-edged Bonnetia. Fl. Sept. Shrub 2 to 3 feet (St. Hil.) Tree 16 feet (Mart.).

2 B. venulòsa (Mart. fl. bras. 1. p. 115. t. 100. A.) leaves oblong, bluntish, veiny beneath, on short petioles; flowers in racemes; seeds erect. ♄. S. Native of Brazil in the province of Bahia. Flowers white. Leaves tapering to the base.

Veiny-leaved Bonnetia. Tree.

3 B. stri'cta (Nees et Mart. in nov. act. bonn. 12. p. 87. t. 6.) leaves alternate, nearly sessile, obovate, obtuse or acutish, coriaceous, shining; peduncles axillary and terminal, somewhat corymbose at the tops of the branches, 3-flowered. ♄. S. Native of Brazil between Cabo Frio and Lagoa Feia, and the river Parahiba, in marshy places. Kisèria stricta, Mart. in regensb. bot. zeit. Jahrg. p. 298. Calyx with 3 bracteas under the flower.

Straight Bonnetia. Shrub 8 feet.

Cult. See *Laplàcea* for cultivation and propagation.

XIII. MAHU'REA (Mahuri is the name of the tree in Guiana). Aubl. guian. 1. p. 558.

Lin. syst. *Monadélphia, Polyándria.* Sepals 5. Petals 5, equal. Stamens numerous, connected at the base. Anthers adnate, 2-celled, bursting lengthwise. Style 1. Stigma 3-4-lobed. Capsule conical, 3-valved, bent in at the margins. Seeds numerous, linear, winged at both ends, attached to the angles of the central column.—Trees, with alternate leaves. Flowers disposed in racemes, purplish.

1 M. palu'stris (Aubl. guian. 1. p. 558. t. 222.) flowers hardly the diameter of an inch; anthers adnate, minute; leaves oblong-coriaceous. ♄. S. Native of Guiana in marshes. Bonnètia meridionàlis, Swartz. B. palústris, Vahl. Flowers terminal, racemose, purplish. Leaves entire, full of pellucid dots.

Marsh Mahurea. Tree 15 feet.

2 M. speciòsa (Chois. mss. in D. C. prod. 1. p. 558.) flowers yellow, 2 inches in diameter; anthers elongated, tetragonal, furrowed, fixed by the base; leaves oblong-lanceolate; racemes axillary. ♄. S. Native of the island of St. Martha. M. racemòsa, Balbis, mss.

Shewy Mahurea. Tree 12 feet.

Cult. See *Laplàcea* for cultivation and propagation.

XIV. MARI'LA (from *μαριλη, marile,* live embers or sparks; in allusion to the sparkling yellow fringe round the seed, or the transparent dots and lines on the leaves). Swartz, prod. 84. D. C. prod. 1. p. 558.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 4 cross sepals, the 2 outer ones involving the flower. Corolla of 4-5 petals. Stamens very numerous, somewhat connected at the base; anthers adnate, 2-celled, bursting lengthwise. Style 1, short, crowned by a capitate 4-5-lobed stigma. Fruit columnar, crowned by the permanent style, 3-4-celled, 3-4-valved; valves bent inwards at the margins so much as to form dissepiments, with the placentas opposite the valves. Seeds very numerous, girded by a yellow fringed margin. Leaves entire, full of pellucid dots.

1. M. racemòsa (Swartz, prod. p. 88.) leaves opposite, oblong-lanceolate, veined; racemes axillary. ♄. S. Native of the Caribbee islands. Flowers yellow or greenish-white.

Racemose-flowered Marila. Tree 15 feet.

Cult. This tree will thrive well in a mixture of loam, sand, and peat; and half-ripened cuttings will root if planted in a pot of sand, and a hand-glass placed over them, in heat.

XV. VENTENA'TIA (in honour of E. P. Ventenat, a French botanist, author of Choix de Plantes cultivées par Cels, and the Jardin de la Malmaison, in 1803.) P. Beauv. fl. d'ow. et de Ben. 1. t. 17. D. C. prod. 1. p. 527.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 3, concave, (f. 98. *a.*), deciduous sepals. Petals 11-12 (f. 98. *c.*), oblong, tapering to the base, blunt, spreading. Stamens numerous, free; anthers oblong, 2-celled, adnate, bursting lengthwise. Ovary ovate (f. 98. *d.*). Style longer than the stamens. Berry ovate-globose, furrowed longitudinally, 5-celled, cells many-seeded (f. 98. *e.*). Seeds unknown, therefore the place which this plant should occupy in the natural system is uncertain. Calyx imbricate, not valvate, on this account this genus is removed from *Tiliàceæ*.

1 V. glau ca (P. Beauv. l. c.) ♄. S. Native of the western coast of Africa, in the kingdom of Benin. A small tree, with exstipulate, stalked, ovate, acuminate, glaucous, feather-nerved leaves. Flowers scarlet, about the size of those of a species of *Gordònia*.

FIG. 98.

Glaucous-leaved Ventenatia. Shrub 10 feet.

Cult. *Ventenàtia* is a very fine shrub, bearing very ornamental scarlet flowers. It may probably thrive well in a mixture of loam and peat; and cuttings will perhaps root in sand under a hand-glass, in a moist heat.

XVI. CARAI'PA (Caraipe is the name of one of the species in Guiana). Aubl. guian. 1. p. 56. t. 223.

Lin. syst. *Polyándria, Monogýnia.* Calyx inferior, 5-parted. Corolla of 5 unequal-sided petals. Stamens indefinite, free or somewhat connected at the base. Style simple, crowned by a 3-lobed stigma. Capsule 3-celled, 3-valved, bearing the seeds on the large, ligneous, central, trigonal, 3-winged placenta. Seeds subsolitary, compressed. Albumen wanting.—Middle-sized trees, with stalked, opposite, and alternate, simple, exstipulate, coriaceous, entire leaves, and terminal racemes or panicles of white flowers.

1 C. paniculà'ta (Mart. fl. bras. 1. p. 104. t. 64.) leaves opposite, oblong, acute, smooth above; petioles and peduncles rusty-tomentose; flowers panicled; petals tomentose on the outside. ♄. S. Native of Brazil near the bar of the Rio Negro. Petals white. The anthers in all are versatile.

Panicled-flowered Caraipa. Fl. Oct. Tree 23 feet.

2 C. glabra'ta (Mart. fl. bras. 1. p. 105. t. 65.) leaves alternate, oblong, acuminated, tapering to the base, glaucescent beneath; flowers racemose. ♄. S. Native of Brazil in the province of Rio Negro. Corolla white.

Smooth Caraipa. Tree 30 feet.

3 C. densifòlia (Mart. fl. bras. 1. p. 105. t. 65. fruit only,) leaves alternate, ovate, oblong, bluntly cuspidate, rounded at the base, smooth on both surfaces, glaucous beneath; flowers racemose. ♄. S. Native of Brazil in the province of Rio Negro on the banks of the river Solimoes near Ega.

Dense-leaved Caraipa. Tree 20 feet.

4 C. grandiflòra (Mart. fl. bras. 1. p. 106.) leaves alternate, very long, oblong-lanceolate, cuspidate, acutish at the base, shining above, glaucous beneath; flowers racemose. ♄. S. Gathered with the last. Flowers white.

Great-flowered Caraipa. Tree 20 feet.

5 C. parvifòlia (Aubl. guian. 1. p. 561. t. 223. f. 1.) leaves alternate, ovate, acute, tomentose beneath and whitish; flowers racemose; ovary villous. ♄. S. Native of Guiana. This tree is called *Manche-haches* by the Creoles in Guiana, who consider the wood to be the best for making handles to hatchets and axes. Flowers white, small.

Small-leaved Caraipa. Tree 20 feet.

6 C. longifòlia (Aubl. guian. 1. p. 561. t. 223. f. 2.) leaves alternate, ovate-oblong, acute, hoary beneath; flowers racemose; ovary tomentose. ♄. S. Native of Guiana.

Long-leaved Caraipa. Tree 20 feet.

7 C. Richardia'na (Cambess. in mem. mus. 16. p. 414. t. 3.) leaves alternate, oblong, usually with a short and blunt acumen, quite smooth; flowers corymbose, pedicellate; ovary smooth. ♄. S. Native of Guiana. Flowers white and rose-coloured.

Richard's Caraipa. Fl. May. Shrub 6 to 12 feet.

8 C. racemòsa (Rich. herb. Cambess. l. c. p. 415.) leaves alternate, oblong, very blunt, and very smooth; flowers racemose, almost sessile; ovary tomentose. ♄. S. Native of Guiana. Petals tomentose.

Racemose-flowered Caraipa. Tree 20 to 30 feet.

9 C. varia'bilis (Cambess. in mem. mus. 16. p. 416.) leaves alternate, oblong-lanceolate, narrowed at both ends, usually acuminated, smooth; flowers few, panicled or racemose, pedicellate; ovary tomentose. ♄. S. Native of Guiana. Petals clothed on the outside with refuscent tomentum.

Variable Caraipa. Tree 20 feet.

10 C. fasciula'ta (Rich. herb. Cambess. l. c. p. 417.) leaves alternate, elliptic, acuminated, quite smooth; flowers few, panicled, pedicellate; ovary tomentose. ♄. S. Native of Guiana.

Fascicled Caraipa. Tree 20 feet?

11 C. angustifòlia (Aubl. guian. 1. p. 562. t. 224. f. 4.) leaves alternate, long, ovate, acuminated, clothed with white tomentum beneath; flowers racemose; ovary tomentose. ♄. S. Native of Guiana.

Narrow-leaved Caraipa. Tree 20 feet.

12 C. latifòlia (Aubl. guian. 1. p. 561. t. 224. f. 3.) leaves broad, ovate, acuminated, cinereous beneath; flowers racemose; ovary tomentose. ♄. S. Native of Guiana. Leaves alternate.

Broad-leaved Caraipa. Tree 20 feet.

Cult. The species of *Caraìpa* will no doubt thrive well in a mixture of loam and sand; and cuttings with their ends ripened will root in sand under a hand-glass, in heat.

XVII. KIELMEYE'RA (from C. F. D. Kielmeyer, Counsellor of State to the King of Wurtemberg, a patron of botany). Mart. et Zucc. fl. bras. 1. p. 112. St. Hil. fl. bras. 1. p. 303.

Lin. syst. *Polyándria, Monogýnia.* Calyx permanent, bract-less, 5-parted, imbricate, 2 outer leaflets smallest. Petals 5, free, equal, unequal-sided, twisted in the bud. Stamens numerous, free, rarely connected at the base, filiform. Anthers fixed by the back, oblong, 2-celled, bursting lengthwise inwards. Style simple, crowned by 3 free or connate stigmas, and appearing as if the style was trifid. Capsule 3-celled, 3-valved; valves bent in at the margins so much as to constitute dissepiments. Central column awl-shaped, placentiferous, each placenta opposite the valves. Seeds oblong, girded by a membranous margin extended at both ends. Integument thin. Albumen wanting. Embryo straight, flat, with a minute radicle pointing towards the umbilicus, and large kidney-shaped cotyledons.—Trees or shrubs, full of resinous juice. Leaves scattered, exstipulate, usually crowded at the tops of the branches, coriaceous, entire, 1-nerved, and marked with feathered veins; petioles jointed at the base. Flowers large, axillary, and terminal, usually at the tops of the branches among the shorter leaves, or appearing in corymbs, or racemes, rarely in panicles, in consequence of the upper leaves being absent. Peduncles bracteate, articulated at the base.

1 K. speciòsa (St. Hil. fl. bras. 1. p. 304. pl. usu. bras. no. 58.) stem arboreous; leaves oblong, somewhat elliptical, obtuse, puberulous beneath on the nerves; flowers racemose; calycine segments ovate, obtuse, tomentose, nearly equal. ♄. S. Native of Brazil in the province of Minas Geraes, where it is called *Malva do Campo, Folha Santa,* and *Pinhao,* and where a decoction of the leaves is employed to prepare emollient baths. Petals white or flesh-coloured.

Shewy Kielmeyera. Fl. April. Tree 20 feet.

2 K. falca'ta (St. Hil. fl. bras. 1. p. 304.) stem arboreous; leaves oblong-subelliptic, somewhat falcate, puberulous; flowers racemose; calycine segments ovate, acuminated, puberulous, nearly equal. ♄. S. Native of Brazil in the province of St. Paul. Petals flesh-coloured. A small twisted tree.

Falcate-leaved Kielmeyera. Fl. Oct. Tree 15 feet.

3 K. coria'cea (Mart. fl. bras. 1. p. 112. t. 70.) shrubby; leaves spatulate, glaucescent, glabrous; flowers racemose; sepals ovate, acute, tomentose, nearly equal. ♄. S. Native of Brazil in the province of Minas Geraes. A small twisted shrub, abounding in yellow juice. Petals flesh-coloured.

Coriaceous-leaved Kielmeyera. Fl. Aug. Shrub 3 to 4 feet.

4 K. rubriflòra (St. Hil. fl. bras. 1. p. 305.) stem suffruticose, simple; leaves oblong-subelliptic, obtuse; puberulous beneath; flowers corymbose; sepals ovate, puberulous, nearly equal. ♄. S. Native of Brazil in the province of Minas Geraes. Petals obovate-oblong, obliquely truncate at the apex, red.

Red-flowered Kielmeyera. Fl. May. Shrub 1½ foot.

5 K. ròsea (Mart. fl. bras. 1. p. 110. t. 68.) stem shrubby, branched; leaves lanceolate, very smooth, pale beneath; flowers corymbose; sepals ovate-roundish, nearly equal. ♄. S. Native of Brazil in the province of Minas Geraes. Petals obovate, rose-coloured.

Rose-coloured-flowered Kielmeyera. Fl. Feb. Sh. 3 to 4 ft.

6 K. neriifòlia (St. Hil. fl. bras. 1, p. 306.) stem shrubby, simple; leaves long, lanceolate, quite smooth; flowers racemose or panicled; sepals ovate, acute, puberulous, nearly equal. ♄. S. Native of Brazil in the provinces of Minas Geraes and Minas Novas. Petals obovate, rose or flesh-coloured.

Oleander-leaved Kielmeyera. Fl. May. Shrub 2 to 3 feet.

7 K. corymbòsa (Mart. fl. bras. 1. p. 113. t. 72.) stem shrubby, simple; leaves obovate-oblong, very blunt, and quite smooth; flowers panicled; sepals ovate-lanceolate, ciliated, nearly equal. ♄. S. Native of Brazil in the province of Goyaz near Villa Boa. Petals obovate, rather retuse, red.

Var. β, pauciflòra (St. Hil. fl. bras. 1. p. 307.) branches naked above; panicle few-flowered. In the province of Minas Geraes.

Corymbose-flowered Kielmeyera. Fl. July. Shrub 3 to 4 ft.

8 K. HUMIFU'SA (St. Hil. fl. bras. 1. p. 307. t. 63.) stem suffruticose, trailing; leaves ovate-elliptic, densely puberulous beneath; flowers racemose; sepals ovate, puberulous, nearly equal. ♄. S. Native of Brazil in the province of Minas Geraes near Tejuco. Stems numerous from the root, 1 foot high, rather trailing. Petals obovate, rose-coloured, smooth, but rather ciliated on the margin.

Trailing Kielmeyera. Fl. Sept. Shrub ½ to 1 foot.

9 K. TOMENTÒSA (St. Hil. fl. bras. 1. p. 308. t. 61.) shrubby; leaves elliptic, obtuse, tomentose beneath; flowers corymbose; sepals ovate, tomentose, nearly equal. ♄. S. Native of Brazil in the province of Minas Geraes at a place commonly called Bosa. Petals obovate-oblong, white, tomentose beneath.

Tomentose Kielmeyera. Shrub 2 to 4 feet.

10 K. EXCE'LSA (St. Hil. fl. bras. 1. p. 308.) arboreous; leaves oblong-subelliptic, obtuse, quite smooth; flowers racemose; sepals ovate, smooth, nearly equal. ♄. S. Native of Brazil near Rio Janeiro. Petals obovate, smooth, white.

Tall Kielmeyera. Fl. June. Tree 60 feet.

11 K. PETIOLA'RIS (Mart. fl. bras. 1. p. 111. t. 69.) stem arboreous or shrubby; leaves oblong, subelliptic, obtuse, quite smooth; flowers corymbose or racemose; sepals roundish, smooth, unequal. ♄. S. Native of Brazil in the province of Minas Geraes near Villa Rica. Petals obcordate, white.

Petiolar Kielmeyera. Fl. Feb. Shrub 3 to 4 feet.

12 K. VARIA'BILIS (Mart. fl. bras. 1. p. 112. t. 71.) stem shrubby, simple; leaves ovate or obovate, very obtuse, quite smooth; flowers racemose or subsolitary; sepals ovate-roundish, smooth, unequal. ♄. S. Native of Brazil in the province of Minas Geraes. Petals obovate-oblong, white, and smooth.

Variable Kielmeyera. Fl. Feb. Shrub 1 to 2 feet.

Cult. This is a beautiful genus of shrubs, with fine leaves and elegant flowers. The species will thrive well in a mixture of turfy loam and sand; and ripened cuttings will root in sand under a hand-glass, in heat. None of them have yet been introduced to the gardens.

XVIII. ARCHITÆ'A (in honour of Archyta, an ancient philosopher of Tarento). Mart. fl. bras. 1. p. 117.

Lin. syst. *Polyadélphia, Polyándria.* Calyx 5-parted, permanent. Petals 5. Stamens numerous, collected into 5 bundles at the base. Anthers 2-celled, didymous, bursting lengthwise. Style simple, permanent. Capsule 5-celled, incompletely 5-valved, opening at the base, but connate at the apex. Seeds linear, rather winged, inserted in the central pentagonal column.—A shrub, with the habit of *Bonnètia*. Leaves in fascicles, feather-nerved.

1 A. TRIFLÒRA (Mart. fl. bras. 1. p. 117. t. 73.) leaves in fascicles, nearly sessile, obovately-lanceolate, acuminated, acutish; peduncles terminal, 3-flowered. ♄. S. Native of Brazil.

Three-flowered Architæa. Tree 15 feet.

Cult. A mixture of loam and peat will answer this tree well; and cuttings which are ripened at the bottom will root in sand under a hand-glass, in heat.

XIX. GODO'YA (in honour of Emmanuel Godoy, Duke of Arcadia, commonly called Prince of Peace, on account of his having concluded the peace between France and Spain, after the war of the revolution. This genus has been dedicated to him as a protector of botany). Ruiz et Pav. fl. per. prod. p. 101.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 5 or many sepals, imbricate in æstivation. Petals 5, convolute in æstivation. Stamens definite or indefinite, disposed in many series, outer series sterile, free or in 5 bundles, inner series of 10-40 free fertile stamens. Anthers long, opening by 2 pores behind. Style simple, crowned by a 3-5-angled stigma. Capsule 3-5-valved, 3-5-celled; valves bent inwards at the edges, constituting the dissepiments; cells many-seeded. Seeds imbricate, winged.—Trees, with alternate, stalked, entire, or subserrulated, coriaceous leaves, which are finely ribbed, and racemes of yellow flowers.

1 G. GEMINIFLÒRA (Mart. fl. bras. 1. p. 119. t. 74.) leaves oblong, bluntish, obsoletely serrulated; racemes axillary or terminal, compound, elongated; calyx of 10 sepals; stamens about 40. ♄. S. Native of Brazil in the province of Rio Negro.

Twin-flowered Godoya. Clt. 1829. Tree 20 feet.

2 G. SPATULA'TA (Ruiz et Pav. l. c. p. 102.) leaves spatulate, crenated; calyx 5-sepalled; stamens about 40. ♄. S. Native of Peru in groves at Cuchero and Chinchao.

Spatulate-leaved Godoya. Tree 20 feet.

3 G. OBOVA'TA (Ruiz et Pav. l. c.) leaves ovate, elliptical, crenated; calyx 5-sepalled; stamens about 10. ♄. S. Native of Peru at Cuchero. Wood hard.

Obovate-leaved Godoya. Tree 30 feet.

Cult. These are elegant trees, worth cultivating; they will thrive well in a mixture of sandy loam and peat; and ripened cuttings will root freely in sand under a hand-glass, in heat.

Tribe VI.

GORDONIE'Æ (plants agreeing with *Gordònia* in many important characters). D. C. prod. 1. p. 527. Calyx of 5 free or connected sepals (f. 99. *a.*). Stamens numerous, with filiform filaments, which are connected together at the base (f. 99. *d.*), and oscillatory oval anthers. Carpels 5, more or less joined together at the base (f. 99. *c.*). Styles 5, distinct, and connected together at the base, or sometimes almost to the apex (f. 99. *f.*), with an equal number of stigmas (f. 99. *f.*). Carpels capsular, 1-2-seeded, sometimes almost distinct, sometimes closely joined together into 1 capsule (f. 99. *c.*), sometimes with a dissepiment in the middle of each valve. Seeds few. Albumen wanting. Embryo straight, with an oblong radicle, and leafy cotyledons which are plaited lengthwise, and with an inconspicuous plumule. American and Asiatic trees and shrubs with alternate oval or oblong, entire or toothed, feather-nerved exstipulate leaves, which are usually deciduous. The flowers resemble those of *Camèllia* on the one hand and *Cydònia* on the other. This tribe was formerly confused with *Malvàceæ* and *Tiliàceæ*, from their plaited, wrinkled cotyledons, but it is more nearly allied to *Ternstræmiàceæ* on account of the calyx being imbricate, not valvate in æstivation, and in the absence of stipulas.

XX. MALACHODE'NDRON (from μαλαχος, *malachos*, soft, and δενδρον, *dendron*, a tree). Cav. diss. 5. p. 502. f. 2. Juss. gen. 275. D. C. prod. 1. p. 528.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-cleft, furnished with 2 bracteas at the base. Petals 5, with a crenulate limb. Ovary 5-furrowed. Styles 5, unconnected. Stigmas capitate. Carpels 5, capsular, connected, 1-seeded. Seeds unknown.

1 M. OVA'TUM (Cav. l. c.). ♄. H. Native of the mountains of Virginia, Carolina, and Georgia. Lindl. bot. reg. 1104. Stuártia pentágynia, Lher. stirp. nov. 1. p. 155. t. 74. Smith, exot. bot. t. 101. Leaves ovate, acuminated. Flowers axillary, solitary, almost sessile. Petals waved, cut, of a pale-cream colour. This is an elegant tree.

Ovate-leaved Malachodendron. Fl. Aug. Sept. Clt. 1785. Tree 20 feet.

Cult. This beautiful deciduous shrub, whose large flowers are of a cream-colour, deserves a place in the collection of every admirer of ornamental shrubs. Although it is sufficiently hardy to bear the winters in Britain in the open air, yet the young shoots often get injured in winter, the summer not being long

enough to ripen the wood, or flower it in perfection; it is therefore better to keep it as a greenhouse plant. Peat soil, mixed with a little loam, suits it best; and it is readily encreased by layers, and ripened cuttings will root in sand, under a hand-glass.

XXI. STUA'RTIA (in honour of John Stuart, Marquis of Bute, once a distinguished patron of botany). Cav. diss. 5. p. 393. t. 159. f. 2. D. C. prod. 1. p. 528.

Lin. syst. *Monadélphia, Polyándria.* Calyx permanent, 5-cleft, rarely 5-parted, furnished with 2 bracteas at the base. Petals 5. Ovary roundish. Style 1, filiform, crowned by a capitate 5-lobed stigma. Capsule woody, 5-celled, 5-valved; cells 1-2-seeded. Seeds wingless, ovate, even. A shrub with deciduous leaves.

1 S. Virgi'nica (Cav. l. c.). ♄. H. Native of North America in swamps in the lower counties of Virginia and Carolina. S. malachodéndron, Lin. spec. 982. Lher. stirp. rar. 1. t. 73. Lam. ill. t. 593. S. Marilándica, Andr. bot. rep. t. 397 or 73. Duh. arb. 2. t. 78. Flowers large, white, with purple filaments and blue anthers, usually in pairs. Leaves ovate, acute. Petals entire.

Virginian Stuartia. Fl. July, Sept. Clt. 1742. Sh. 6 to 8 ft.

Cult. This beautiful shrub deserves to be cultivated in every collection of ornamental shrubs. For treatment and cultivation see *Malachodéndron.*

XXII. GORDO'NIA (in honour of Alexander Gordon, a celebrated nurseryman at mile-end near London, who lived in the time of Philip Miller). Ellis in phil. trans. 1770. Cav. diss. 307. D. C. prod. 1. p. 528.

Lin. syst. *Monadélphia, Polyándria.* Calyx of 5 rounded, coriaceous sepals (f. 99. *a.*). Petals 5, somewhat adnate to the urceolus of the stamens (f. 99. *d.*). Style crowned by a peltate 5-lobed stigma (f. 99. *f.*). Capsules 5-celled, 5-valved (f. 99. *c.*); cells 2-4-seeded. Seeds ending in a leafy wing, fixed to the central column, filiform. Trees with the appearance of *Gordònia.*

Sect. I. Lasia'nthus (from λασιος, *lasios*, wool, and ανθος, *anthos*, a flower; calyx covered with silky wool). D. C. prod. 1. p. 528. Petals somewhat connected at the base. Stamens almost disposed in five bundles. Style 1.

1 G. lasia'nthus (Lin. mant. 570.) pedicels axillary, usually shorter than the leaves; leaves oblong-coriaceous, smooth, serrated; calyx silky; capsules conoid, acuminated. ♄. H. Native of North America in cedar swamps near the sea-coast, from Virginia to Florida, where it is called *Loblolly-bay.* Cav. diss. 6. t. 161. Sims, bot. mag. t. 668. Hypéricum lasiánthus, Lin. spec. 1101. Catesb. carol. 1. t. 44.—Pluk. amalth. t. 352. This is a beautiful small evergreen tree with white flowers, about the size of those of a single rose. (f. 99.)

FIG. 99.

Loblolly-bay or *Woolly-flowered* Gordonia. Fl. Aug. Oct. Clt. 1739. Tree 14 feet.

2 G. Chilau'nea (Hamilt. mss. in D. Don, prod. fl. nep. p. 225.) pedicels axillary, elongated, hardly longer than the petioles; leaves elliptical, acute, veiny, quite entire, pubescent beneath; calyx a little ciliated; petals entire. ♄. G. Native of Nipaul at Suembu, where it is called *Chilaune-swa.* G. Wallichii, D. C. prod. 1. p. 528. Leaves 3-4 inches broad. Bud of flower globose, and girded by the short calyx. Flowers white. A small evergreen tree.

Chilaune Gordonia. Fl. May. Tree 14 feet.

3 G. exce'lsa (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 663.) leaves oblong-lanceolate, acuminated at both ends, serrulated; peduncles axillary, solitary, 1-flowered, shorter than the leaves. ♄. S. Native of Java. Schìma excélsa, Reinw. cat. pl. hort. bot. Buitenz. p. 80. In a specimen gathered by Blume on Mount Burangrang in Java, the ovary was constantly 4-celled, and the stigma peltate, 4-lobed.

Tall Gordonia. Tree 30 feet.

Sect. II. Lacathe'a (from λα, *la*, very, and καθημαι, *cathemai*, to sit; application not evident). Salisb. D. C. prod. 1. p. 528. Petals connected at the base. Filaments free. Style 1.

4 G. pube'scens (Pursh, fl. amer. sept. 2. p. 451.) flowers almost sessile; leaves obovate-lanceolate, pubescent beneath, somewhat serrated, membranaceous; petals and sepals rather silky on the outside; capsules spherical. ♄. H. Native of North America in Georgia on the banks of the Alatamaha, near Fort Barrington; also in South Carolina. Lois. herb. amat. t. 236. Lacathèa flórida, Sal. par. lond. t. 56. This is a beautiful tree, whose large white flowers and yellow anthers have a most agreeable appearance.

Var. α, velutìna (D. C. prod. 1. p. 528.) leaves oblong, velvety beneath. G. pubéscens, Lher. stirp. p. 156. Vent. malm. t. 1. Cav. diss. 6. t. 162. Franklìnia Americàna, Marsh. arb. 48.

Var. β, subglàbra (D. C. prod. 1. p. 528.) leaves obovate-oblong, smoothish beneath. G. Franklìni, Lher. stirp. 1. p. 156. Franklìnia Alatámaha, Marsh. arb. 48. Flowers fragrant.

Pubescent Gordonia. Fl. Aug. Sept. Clt. 1774. Tr. 20 ft.

Cult. Gordònia is a genus of elegant trees and shrubs, whose large beautiful white flowers make a very agreeable appearance. For cultivation and treatment see *Malachodéndron.* The *G. excélsa,* being a native of Java, will require to be kept in a stove, and ripened cuttings will root in sand under a hand-glass, in heat.

XXIII. BLU'MEA (in honour of C. L. Blume, M. D. for a long time resident in Java, author of several works on Java plants). Spreng. syst. 5. p. 12. no. 2461.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-parted, unequal. Petals 5, obovate, fugacious. Anthers almost sessile, disposed in a ring around the style. Style 5-cleft at the apex. Capsule 5-celled; cells many-seeded. Seeds winged?

1 B. Java'nica (Spreng. syst. 3. p. 126.). ♄. S. Native of Java. Reinwárdtia Javánica, Blume. Leaves oblong, serrulated, smooth; peduncles 3-flowered. Flowers large, yellow.

Java Blumea. Tree 30 feet.

Cult. A mixture of loam and peat will suit this tree, and ripened cuttings will root in sand under a hand-glass, in heat.

XXIV. SCHI'MA (probably from σχισμα, *schisma*, a fissure; in allusion to the valves of the capsule only being cleft half-way down). Reinwardt, Blum. bijdr. ex Schlecht. Linnæa. 1. p. 662.

Lin. syst. *Monadélphia, Polyándria.* Calyx 5-cleft, permanent. Petals 5, adnate to the urceolus of the stamens, as well as being connected together at the base, unequal, one of which is cucullate. Style crowned by a peltate, 5-lobed stigma. Capsule globose, 5-celled, half 5-valved; valves woody, with a dissepiment in the middle of each. Central receptacle capitate. Seeds 1-2 in each cell, elongated into a leafy wing at the apex.

This genus comes near to *Gordònia*, but differs in the structure of the calyx and capsule.

1 S. Noro'nhæ (Blum. l. c.) leaves oblong-lanceolate, acuminated, entire; peduncles axillary, solitary, 1-flowered at the extremity of the branches. ♄. S. Native of Java.

Var. β, undulàta; leaves waved. ♄. S. Native of Java.

Noronha's Schima. Tree.

Cult. This tree will thrive well in a mixture of loam and sand, and ripened cuttings taken off at a joint will root freely if planted in sand under a hand-glass, in heat.

XXV. POLY'SPORA (πολυς, *polys*, many, and σπορα, *spora*, a seed; many in capsule). Sweet, hort. brit. p. 61.

Lin. syst. *Monadélphia, Polyándria.* Calyx girded by accessory bracteas. Sepals and petals 5. Stamens numerous, monadelphous at the base. Style crowned by a 4-5-lobed stigma. Capsule conical, 5-celled, 5-valved, many-seeded. Seeds imbricate, ending in a wing. A shrub with smooth, obovate, entire leaves, and axillary, solitary, almost sessile flowers.

1 P. axilla'ris (Sweet, l. c.). ♄. S. Native of Pulo-Pinang. Camèllia axillàris, Roxb. ex Ker. bot. reg. t. 349. Sims, bot. mag. t. 2047. Gordònia anómala, Spreng. syst. 3. p. 126. Leaves obovate-oblong, serrulated, upper ones quite entire. Flowers of a yellowish-white colour, about the size of those of *Camèllia Sasánqua*, solitary, almost sessile, usually axillary. Styles 4, and hardly unconnected at the apex.

Axillary-flowered Polyspora. Fl. Nov. to Mar. Clt. 1816. Shrub 3 feet.

Cult. This shrub will thrive well in a mixture of loam and peat; and cuttings not too much ripened will root in sand, under a hand-glass, in heat, or it may be grafted on the single red *Camèllia Japónica*.

Tribe VII.

CAMELLIE'Æ. D. C. theor. elem. ed. 1. 1813. Feb. as an order. Theàcea, Mirb. bull. phil. Dec. 1813. as an order. Calyx of 5-9 sepals, inner ones largest and concave, deciduous. Petals 5-7-9, alternating with the sepals when the same number, sometimes they are connected at the base. Stamens numerous, filiform, separated into many bundles at the base, but usually monadelphous. Anthers ellipsoid, roundish, versatile. Ovary ovate-roundish, crowned by 3-5 filiform styles, which are connected at the base. Capsule 3-5-celled, 3-5-valved; valves sometimes with dissepiments in the middle, sometimes so much bent in at the margins as to form dissepiments. Seeds large, few, fixed to the margins of the central placenta. Albumen wanting. Embryo with large, thick, oily cotyledons, and as if they were jointed at the base, and an obtuse, short, radicle, pointing to the hilum, and a hardly evident plumule. Smooth evergreen trees or shrubs, inhabitants of the colder parts of Asia, China, Japan, &c. Flowers axillary, very shewy, red, white, or striped.

XXVI. CAME'LLIA (in honour of George Joseph Camellus or Kamel, a Moravian Jesuit and traveller in Asia. He wrote a history of the plants of the isle of Luzon, which is inserted in the 3d vol. of John Ray's Historia Plantarum). Lin. gen. no. 848. D. C. prod. 1. p. 529.

Lin. syst. *Monadélphia, Polyándria.* Calyx imbricate, surrounded by accessory bracteas or sepals. Stamens monadelphous. Anthers elliptical, 2-celled, bursting lengthwise. Capsule furrowed, with a dissepiment in the middle of each valve, separating from the free triquetrous axis when ripe. Cells 1-2-seeded. Elegant evergreen trees or shrubs, with coriaceous, dark-green, shining leaves, and large flowers, resembling the rose, of various hues.

1 C. Japo'nica (Lin. spec. 982.) leaves ovate, acuminate, acutely serrated; flowers axillary, sessile, usually solitary; ovary smooth. ♄. G. Native of Japan and China. Cav. diss. 6. t. 160. Jacq. icon. rar. 3. t. 553. Duh. ed nov. t. 71. Andr. bot. rep. t. 25. Lodd. bot. cab. t. 329. and 455. Lois. herb. amat. t. 43, 44, 45, and 46. Curt. bot. mag. t. 42. This plant, in its native country, grows to a large tree. It is in high esteem among the Japanese and Chinese for the elegance of its large flowers, which exhibit a great variety of colours, but have no scent, and for its evergreen leaves. It is very common everywhere in the groves and gardens, flowering from October to April. It varies with white, red, yellowish, purple flowers, and variegated and blotched with the same colours, from single to semidouble and double. It is the greatest ornament of the greenhouses of Europe in spring, and is now cultivated by nurserymen to a vast extent. The plant was cultivated in England before 1742 by Robert James Lord Petre.

The varieties at present cultivated in England are as follows:

Varieties of Camèllia Japónica which have been introduced from China.

α *álba-plèna.* Double white Camellia. Clt. 1792. The flowers are pure white, from 3 to 4 inches in diameter, the petals being disposed in circles from the circumference to the centre, and lying particularly flat and even one above another. Andr. bot. rep. p. 25. Lodd. bot. cab. 269.

β *fimbriàta.* Fringed white Camellia. Clt. 1816. The flowers are double, white; the petals are fringed. Lodd. bot. cab. 1103.

γ *variegàta.* Double striped Camellia. Clt. 1792. The flowers of a fine dark rose of red-colour, irregularly blotched with white, whilst those which appear in the spring are generally plain red. They are 3 or 4 inches in expansion. The outer petals are about $1\frac{1}{2}$ inch in diameter, roundish cordate, thick and fleshy at the base, and sometimes a little divided at the apex. When the flowers are fully expanded they become recurved. The centre petals are often small, narrow, and upright, confusedly arranged, many of them being disposed in tufts, with small parcels of stamina intermixed. Some flowers are particularly handsome and as double as a rose. Andr. bot. rep. t. 91. Lodd. bot. cab. 329.

δ *rùbro-plèna.* Double red Camellia. Old Red and Greville's Red. Clt. 1794. The flowers are 3 or $3\frac{1}{2}$ inches in diameter. They are of a crimson-red colour, and resemble the flowers of a double *Hibíscus*. The petals are numerous, of an irregular shape, comparatively long and narrow, pointed, and veined. They are curled on the margins, gradually diminishing in size towards the centre. Andr. bot. rep. t. 199. Lodd. bot. cab. 397.

ε *incarnàta.* Lady Hume's Blush Camellia or Buff Camellia. Clt. 1806. The flowers open very regularly 3 or $3\frac{1}{2}$ inches in diameter, of a fine glowing blush-colour, becoming richer as they expand; the outer petals are a good deal recurved, they gradually diminish in size towards the centre, and are pointed. In general they are evenly arranged and laid over each other. Ker. bot. reg. 112. Andr. bot. rep. 660. f. 1. Lodd. bot. cab. 140.

ζ *anemonefl̀ora.* Waratah Camellia or Blush Waratah Camellia or Anemone-flowered Camellia. Clt. 1739. The flowers are remarkably shewy, and resemble a double anemone. They are about 3 or 4 inches in diameter, of a deep-red colour. The outer petals expand quite flat, roundish-cordate, surrounding a great number of smaller ones, regularly disposed and rising upright in the centre, each of them are roundish-cordate, and slightly marked with veins of a deeper colour. Those in the centre of the flower are of a peculiar form, being small and fleshy at the base, and broad and thin towards the point, with

a very minute white tip, they are compactly arranged in rows from the circumference to the centre, which is considerably elevated about the outer petals, and each incurved towards the styles, with their edges turned outwards. Sims, bot. mag. 1654. Lodd. bot. cab. 537.

η crassinérvis. Mr. Kent's Camellia. Clt. 1820. This kind is very like the *Waratah.* The only difference appears to be that in the flowers of this the outer petals are paler and more cupped and the leaves are thinner and rounder. It was formerly known under the name of *Kent Hexangular.* Lodd. bot. cab. 1475.

θ myrtifòlia. Myrtle-leaved Camellia. Clt. 1808. The flowers are large in proportion to the plant, about 3 inches in diameter, and are freely produced. On their first opening they appear to be of a deep rose-colour, but when expanded become paler. The petals are numerous and regularly arranged over each other, forming a peculiar nice compact flower, faintly veined with red. The outer petals are of a roundish form, always darker in colour than the interior ones, an inch broad, at length becoming recurved. The inner petals are much smaller, and pointed, at first they are erect and closely set together, so that the centre of the flower is considerably elevated; they afterwards expand almost flat. Sims, bot. mag. 1670. Lodd. bot. cab. 354.

ι hexangulàris. Hexangular-flowered Camellia. This variety is no less remarkable for the regular disposition of its petals, than for the peculiar elegance of its flowers. This plant is only known by the Chinese drawings in the possession of the Horticultural Society. It has not yet been introduced. The preceding variety usually goes under that name in the gardens.

κ involùta. Lady Long's Camellia. Clt. 1820. It agrees precisely in character with the *myrtle-leaved*, but differs in being more erect and of stronger growth, and in having all the petals involute instead of spreading, but this is not permanent, as the petals are sometimes inflexed. Ker. bot. 633.

λ *variábilis.* Various-flowered Camellia. Clt. 1816. This is remarkable for producing more than 4 different coloured flowers upon the same plant, red, white, and blush varieties of the *pæony-flowered* and the *Pompone.*

μ Pompònia. The Kew Blush Camellia. Clt. 1810. The flowers of this variety are very delicate, and measure, when full expanded, 4 inches in diameter. They consist of 10 or 12 roundish-cordate outer petals, arranged in 2 rows round a great number of smaller ones that rise in the centre, in an erect, irregular mass, the outer petals spread open and become almost flat, they are sometimes entire, but usually indented and undulated. Their colour is pure white, excepting for about a third of their length, nearest the base, which is deeply tinged with red, as well as a small stripe up the centre. Ker. bot. reg. 22. Lodd. bot. cab. 596.

ν pæoniflòra ròsea. Red Pæony-flowered Camellia. Clt. 1810. Andr. bot. rep. 660. Lodd. bot. cab. 238.

ο pæoniflòra pállida. Blush Pæony-flowered Camellia. Clt. 1820.

π pæoniflòra álba. White Pæony-flowered Camellia. Clt. 1810.

These three last varieties are in every respect the same as the *Pompone.* The only difference appears to be in the colour of the flowers. That of the first is of a bright rose or red-colour, marked with darker veins. The second is intermediate in the colour between the last-mentioned and the *Pompone*, being darker than the *Pompone*, yet not so dark as the *Red Pæony-flowered.* The whole of the petals are veined and of a deep blush-colour, excepting the edges, which are nearly white. The third variety is generally cultivated under the name of *White Waratah* or *White Anemone-flowered* and *White Pompone.* The flowers are exactly the same as the *Pompone*, excepting that they are pure white, and have not the blush tinge at the base of the petals.

ρ semidùplex. Semi-double Red Camellia. Clt. 1808. The plant is not easily distinguished from Middlemist's Red Camellia, unless when in flower. The flowers consist of from 6-12 large roundish petals in a single or double series, round the column of stamina, and expanding to $2\frac{1}{2}$ inches in diameter; they are generally concave, and all marked with veins that are darker than the uniform rich rose-colour of the flowers. The stamens rise erect, they are transformed into small, roundish, ligulated petals, slightly divided at the apex, and striped with white in the same manner as Middlemist's Red, but not so large nor are the petals so numerous. It has been impregnated with the pollen of the single white, and some excellent varieties have been raised from the seed by Mr. Press, the gardener to Edward Gray, Esq. at Harringay House, Hornsey. Andr. bot. rep. 559.

ς atrorùbens. Loddiges's Red Camellia. Clt. 1809. The flowers are generally middle-sized, and seldom exceed 3 inches in diameter. They are very striking at a distance, appearing scarlet. The outer petals are of a thick substance, roundish, oblong, with the edges sometimes notched and slightly undulated. The whole are ranged in a double or triple series, and are faintly marked with darker veins. The centre of the flower is filled with small petals, confusedly mixed together, varying a good deal both in size and form, each are incurved and have a white tip, sometimes elongated, ligulate petals rise out from amongst them, intermediate in shape between the outer and inner petals, of a paler colour, arranged in a cluster overtopping the others. The flower is usually neat and shewy. Lodd. bot. cab. 170.

τ Welbánkii. Welbank's White Camellia. Clt. 1820. This variety is called *luteo-albicans* in bot. reg. 708. also *flavéscens* and White Moutan Camellia. The flowers are of a yellowish-white colour, and do not open freely, about $3\frac{1}{2}$ inches in diameter. The petals are not arranged in any sort of order, so that the flower has a confused appearance, the outer ones are of a roundish form, much undulated, and but very little recurved or divided at the extremity. The centre petals are of an irregular shape, sometimes they approach to those of the *Pompone*, but are often twisted and arranged in tufts with several parcels of imperfect stamens intermixed among them. The flower is upon the whole rather delicate, and has been compared to those of *Gardènia flórida.*

υ ròsea. Le Blanc's Red Camellia. Clt. 1821. This, though not so shewy as many other varieties, is nevertheless desirable, from producing its flowers both early and abundantly. The flowers, when expanded, measure about $2\frac{1}{2}$ inches in diameter, of a pale-rose colour approaching that of the Myrtle-leaved. The flower has sometimes the appearance of a small moss rose, but generally the outer petals expand nearly flat, they are roundish-cordate, and sometimes have a faint green stripe down the centre. The whole of the petals are nearly of the same form, being evenly arranged, diminishing gradually in size to the centre, but not so full of petals as some other varieties.

χ *speciòsa.* Rawes's Variegated Waratah. Clt. 1824. The flowers of this variety are extremely handsome, and of a deeper red than either the *atrorùbens* or *Waratah.* They open very regularly, and when expanded are usually 4 inches in diameter. The outer petals 10-12 or more, a little cordate, but generally rounded, a little recurved and faintly veined, disposed in 2 or 3 series, with a few unequal blotches of white appearing on some of them near the edges, above these there is another row of small incurved thick petals, which rise upright, and become

larger the nearer they approach the centre; from these proceed 8 or 10 petals, nearly as large as those at the extremity, and surround another set of small incurved petals, thus having the appearance of two flowers, one formed in the centre of the other; nearly the whole of the petals have a little white stripe at their base, and some will even be variegated; all are tipped with white in the same manner as those of the *Waratah*.

ω *cárnea*. Middlemist's Red Camellia. Clt. 1808. This variety is also known under the name of Rose-coloured Camellia. The flowers are similar in colour to the semi-double red but larger. The outer petals are roundish-cordate, arranged in circles over each other, they are not numerous, although the flowers may be said to be more than semi-double. The centre petals are short, and vary in form, generally they are roundish and a little twisted, as well as marked with dark-coloured veins, and all of them have more or less a small white-coloured stripe down their centre. The stamens are at times perfect, but usually changed into petals, and the whole altogether resemble a full-blown rose. Ker. bot. reg. 22. Andr. bot. rep. 660. f. 1.

α α *imbricàta*. Crimson Shell Camellia. Clt. 1827. This is without doubt the best variety that has been brought from China. The flowers are upwards of $3\frac{1}{2}$ inches in diameter, and very regular in form, the petals being arranged one above another, and gradually diminishing in size towards the centre, exactly in the manner of the Double White. The colour is of a fine crimson-red and remarkably shewy. When the flowers first begin to open they are concave, but as they expand they become quite flat. The outer petals are nearly round. The centre petals are rather pointed and rise upright.

β β *Párksii*. Park's Striped Rose Camellia. Clt. 1824. This differs from the common striped. The flowers open well, and measure 4 inches in diameter. They are of a bright rose-colour, irregularly striped or blotched with white. The outer petals are very large, slightly cordate, occasionally having a fringed edge. Those towards the centre are irregular in their form, partly twisted and disposed in a similar manner to those of the Common Striped, giving the whole flower the same confused appearance, and shewing a few imperfect stamens in the hollows formed by the twists of the petals. It is upon the whole a very handsome variety. It possesses a slight but pleasant scent, which has also been remarked in the Myrtle-leaved.

γ γ *Sabiniàna*. Sabine's White Camellia. Clt. 1824. The flowers are pure white, 3 inches in expansion, and resemble in their form those of the *Pompone*. The outer petals are disposed in 2 series and spread nearly flat, about 20 in number; they are round, and but a very little cordate. Those towards the centre of the flower are small and narrow, confusedly arranged, like the centre petals of Walbank's White, and rise nearly upright, a few of them are small and incurved, with their sides compressed so as almost to have a tubular appearance. In the centre of the flower several small parcels of stamina sometimes appear, but they are not always discernible, unless closely examined.

To these 24 varieties may be added the Semi-double White and Rose-coloured Waratah, which have been ascertained to be different from any of those described above. The first was purchased on the Continent in 1822 by Mr. Palmer. The second was introduced from China by the Horticultural Society in 1824, neither of which has yet produced perfect flowers in the gardens.

N.B. There are numerous other names for varieties known by gardeners, but they appear to be all synonymous with those described above unless they are seedling varieties.

* * *Names of seedling varieties which have been raised in the gardens of Britain.*

1 *Colvíllii* (Sweet, fl. gard. n. s. with a figure). Colvill's Striped Camellia. An elegant hybrid, with the petals regularly disposed, blotched with white on a red ground.

2 *Rósa Sinénsis* (Lodd. bot. cab. 1455.). China Rose Camellia. Flowers red.

3 *Aitóni* (Chandl. cam. 3.). Aiton's Large Single Red.

4 *althæiflóra* (Chandl. cam. 4.). Hollyhock-flowered. Flowers red.

5 *corállina* (Chandl. cam. 5.). Coral-flowered.

6 *insígnis* (Chandl. cam. 6.). Splendid Red.

6 *flórida* (Chandl. cam. 7.). Florid Red.

8 *anemoneflóra-álba* (Chandl. cam. 8.). White Anemone-flowered Camellia.

9 *Chandlèri* (Chandl. cam. 1-2.). Chandler's Striped Waratah.

10 *punctàta*. Gray's spotted. Flowers pink spotted with white.

11 *Rósa múndi*. The Rose of the World. Flowers white and crimson.

12 *Préssii*. Presse's Single Red.

13 *eclípsis*. Presse's Eclipse. White and red.

14 *rúbro-punctàta*. Single Red Spotted. Flowers white spotted with red.

Common or *Japan* Camellia. Fl. Feb. May. Clt. 1739. Tree 20 feet.

2 C. reticula'ta (Lindl. bot. reg. t. 1078. Hook, bot. mag. t. 2784.) leaves oblong, acuminated, serrated, flat, reticulated; flowers axillary, solitary; calyx 5-leaved, coloured; ovary silky. ♄. G. Native of China. A splendid species, distinguished from *C. Japónica* in the strongly reticulated leaves, and in the silky ovarium. The flowers are large and elegant, containing from 17-18 petals, which are loosely arrayed, wavy, and generally entire, they are of a clear bright purple, darker towards the base and paler towards the edges; stamens irregularly monadelphous, in several bundles; ovary 2-4-celled; style 2-4-cleft.

Reticulated-leaved or Captain Rawes's Camellia. Fl. Feb. May. Clt. 1824. Shrub 10 feet.

3 C. maliflòra (Lindl. bot. reg. 1078. in a note) leaves obovate, convex, bluntly serrated; flowers terminal and axillary, usually solitary; branches and petioles pubescent; ovary smooth. ♄. G. Native of China. C. Sasánqua flòre-plèno, Ker. bot. reg. vol. 7. t. 549. Sims, bot. mag. 2080. An elegant species with small semidouble red flowers.

Apple-flowered Camellia. Fl. Jan. May. Clt. 1816. Sh. 8 ft.

4 C. Sasa'nqua (Thunb. fl. jap. p. 273. t. 30.) leaves ovate-oblong, serrated; flowers terminal and axillary solitary; branches and ovary villous. ♄. G. Native of Japan and China. Sasánqua, Kæmpf. amœn. 853. Staunt. icon. chin. 2. p. 466, with a figure. This is a tree of middling size, with much smaller leaves and flowers than *C. Japónica*. The leaves dried in the shade have a sweet smell; a decoction of them is used by the women in Japan to wash their hair with, and they are mixed with tea to give it a grateful odour; indeed they are hardly to be distinguished from the leaves of that plant. The flowers vary from single to semi-double and double, white. This plant is also cultivated to a great extent by nurserymen on account of the fragrance and elegance of its flowers.

Var. α; semidouble white. Ker, bot. reg. t. 12.

Var. β; double white. Ker, bot. reg. t. 1091.

Sasanqua or Lady Bank's Camellia. Fl. Jan. May. Clt. 1811. Tree 10 feet.

5 C. Ki'ssi (Wall. asiat. res. 13. p. 429.) leaves elliptical, serrulated, bluntly acuminate; flowers sessile, generally solitary, axillary, and somewhat terminal, usually 4-petalled, and with 3 distinct, furrowed, woolly styles, which are about equal in length to the stamens. ♄. G. Native of Nipaul at Narainhetty, where it flowers in September, and where it is called

Kengna by the inhabitants. C. Keìna, Hamil. mss. in D. Don, prod. fl. nep. p. 924. This species is very like *C. Sasánqua*. The flowers are white and fragrant. It is called in the Newar language *Kissi* or *Kissi-swa*. The leaves of this shrub have a very strong but transient smell of tea, but their infusion possesses only to a very slight degree its flavour, owing perhaps, as Mr. Gardner justly observes, to the defective manner of gathering and drying them for the trials which he instituted. It has also been ascertained by Mr. Gardner that the Nipaulese extract an oil from the seed of the *Kissi* by pressure, which is much valued by them as a medicine.

Kissi Camellia. Fl. Dec. to May. Clt. 1823. Shrub 7 feet.

6 C. oleífera (Abel. chin. p. 174. with a figure;) leaves elliptic-oblong, acute, serrated, coriaceous, shining; flowers solitary; calyxes silky, deciduous; petals 5-6, 2-lobed. ♄. G. Native of China. Lodd. bot. cab. 1065. This plant resembles the two preceding species. The flowers are very numerous, white, and fragrant. The Chinese extract an oil from the seed by pressure, which is in very general use in the domestic economy of China. The seeds are white, and are as well as those of any other species, reduced to a coarse powder, which is stewed or boiled in bags, and then pressed, when the oil is yielded. Dr. Abel, trav. 176.—Ker, bot. reg. 492.

Oil-bearing Camellia. Fl. Nov. Shrub 6 to 8 feet.

7 C. drupífera (Lour. coch. 2. p. 499.) leaves ovate-oblong, somewhat crenated; flowers terminal in twos or threes, 8-petalled; drupe 4-celled. ♄. G. Native of Cochin-China, where it is also cultivated. The flowers are probably white. The inhabitants of Cochin-china extract an oil from the seed by pressure, which is used by them to anoint their hair, and for various medical purposes; it has a pleasant odour, and does not easily become rancid. It will perhaps prove a distinct genus from *Caméllia*, as well as the following species.

Drupe-bearing Camellia. Tree 10 feet.

8 C. euryoìdes (Lindl. bot. reg. t. 983.) leaves ovate-lanceolate, acuminate, serrated, silky beneath; branches hairy; peduncles lateral, 1-flowered, scaly. ♄. G. Native of China. Lodd. bot. cab. 1493. Thèa euryoìdes, Booth in hort. trans. Flowers white.

Eurya-like Camellia. Fl. May, July. Clt. 1822. Shrub 4 ft.

Cult. All the species of *Caméllia* are universally admired by every collector of plants, on account of their beautiful rose-like flowers, and elegant, dark-green, shining, laurel-like leaves. They are very hardy green-house plants, and are easy of culture, requiring only to be sheltered from severe frost. The best soil for them is an equal quantity of good sandy loam and peat. Messrs. Loddiges find that light loam alone answers as well or better, and in the Comte de Vandes gardens at Bayswater rotten dung is mixed with loam and peat. The pots should be well drained with pieces of potsherds, that they may not get soddened with too much wet, as nothing injures them more than overwatering, particularly when they are not in a growing state. When growing freely, they can scarcely have too much, and they should be watered all over the leaves with a fine rose pot. They are readily increased by cuttings or inarching on the commoner kinds. The cuttings should be taken off at a joint as soon as they are ripened, and planted in sand under a hand-glass, where they will soon strike root; when this is the case, they should be planted singly into small pots, and set in a close frame, and they must afterwards be hardened to the air by degrees. (Sweet.)

The single red *Caméllia Japónica* is propagated by cuttings or layers and seed for stocks, and on these the other kinds are generally inarched or budded. Henderson, ot Wood-hall near Hamilton, puts in cuttings at any time of the year, except when they are making young wood; lets them remain in a vinery for a month or more, and then puts them in a hot-bed, where there is a little bottom heat. A speedy mode of obtaining stocks is by planting stools in a pit devoted to that purpose, and laying them in autumn; the following autumn most of the layers will be rooted, when they may be taken off and potted, and used as stocks the succeeding spring. Inarching or grafting is performed early in the spring, when the plants begin to grow; the chief care requisite is so to place and fix the pot containing the stock, as that it may not be disturbed during the connection of the scion with the parent plant. The graft being clayed over is then covered with moss to prevent its cracking. When independent grafting is used, the mode called side grafting is generally used, and the operation of tongueing is generally omitted. A few seeds are sometimes obtained from the single and semi-double kinds; these require 2 years to come up, but they make the best stocks of any, but the seedlings are usually allowed to come into flower before they are grafted upon, in case some new variety should be produced, but the best cultivators cross-impregnate the blossoms by cutting off the stamens before the anthers burst, and when the stigma is in a perfect state, dusting it with the pollen of the kind intended for the male parent. *C. Sasánqua* seeds most readily, and is often employed as the female parent for raising new varieties. The plants so raised from seed, if well treated, flower in 4 or 5 years, and if nothing new is produced they still make excellent stocks. Henderson of Wood-hall, who is one of the most successful growers of *Camélliας* in Scotland, uses the following compost: equal parts of light-brown mould, river sand and peat earth, and a little rotten leaves, mixed well together; and when the camellias require shifting put some broken coal-char in the bottom of the pots, and some dry moss or *Hýpnum* over it. (Cal. mem. 3. p. 316.)

Camélliας have the best effect, and are grown to most advantage, in a house entirely devoted to them. Such a house should be rather high than otherwise, as the plants never look so well as when 6 or 8 feet high, trained in a conic form, and clothed with branches from the root upwards. The plants should be raised near to the glass by means of a stage, which should be so contrived that as they advance in height it may be lowered in proportion; only the very best crown or patent glass should be used, because it is found that the least inequality of surface or thickness of material, so operates on the sun's rays as to concentrate them, and burn or produce blotches on the leaves.

To grow *Camélliας* in perfection considerable care is requisite. The roots are apt to get matted, so as after a time to render them impervious to water. Hence frequent attention should be paid to see that the water poured on the pots moistens all the earth equally, and does not pass by the sides and leave the middle or principal part dry. When the plants are in a growing state they require to be liberally watered, and to have a greater degree of heat than that which is usually given to green-house plants. If this heat and watering is not given in November and December, the plants will not expand their blossoms freely, neither will vigorous shoots be supplied after the blossoming is over. To form handsome plants they should be trained with single stems to rods, and pruned so as to make them throw out side branches from every part of the stem; to encourage this, the plants should not be set too close together on the stage. In summer the plants should be set out of doors on a stratum of scoria or on pavement, in a sheltered but open situation, or the glass roof may be taken off. Some kinds do very well if planted out in a green-house conservatory. The single and double red *Camélliа* will endure the open air when trained against a south wall, and protected by mats in winter. Henderson, of Wood-hall, gives the following account of his mode of treating *Camélliας*: "The best time for a regular shifting of the *Camélliа* is the month of February and beginning of March. After shifting all those that require it, put them into a peach-house, vinery or pinery, or in

the warmest part of a green-house. They will soon begin to make young wood. From the time they begin to make their young shoots till they have finished their growth give them plenty of water. They may be kept in the vinery or peach-house until they have formed their flower-buds, when a few of them may be removed to a colder place, such as behind the stage of a green-house, for the *Camélliias* are fond of being shaded during strong sunshine. In three or four weeks after, a few more of the *Camélliias* may be brought out of the peach-house, and put into a colder situation. This may be repeated three or four times, which will make as many different successions of flowering. Those that are wanted to come into flower early may remain in the warm house until they are beginning to flower, when they should be taken to a cold place, as the coldest place in the green-house, then give them plenty of light only, and they will open their flowers well, and stand long. A *Camélliia* cannot stand heat when in flower, indeed they seldom open their flowers well when in heat, at all events the flowers soon fall off. Those that are kept all the summer in the vinery will come into flower by the 1st or middle of October, and a pretty large plant, having perhaps 50 or 100 flower-buds, will continue in flower till the month of January. Those plants that are removed early from the vinery will now be in flower, to succeed those that were in flower in October, and have now done flowering. These last should be immediately taken into the heat; they will make their young wood early, and they may remain in heat till they come into flower, which will perhaps be a month earlier next year. By attending to shifting the *Camellia* plants from the warm-house to the cold, a regular succession of flowers may be had from the first of October to the middle of July."

The plants produce better flowers from November to April than in the summer months, although they are sometimes to be had all the year round. *Camélliias* delight to be kept damp all the summer months, and a little shaded from the strong sun. Give them plenty of water all the time they are making their young shoots; they may also get a gentle sprinkling over the leaves once every week during the summer months, except when they are in flower. *Camélliias* will stand a great deal of cold and heat without being much injured, but they will not form many flower-buds without some artificial heat.

XXVII. THE'A (altered from *Tcha*, the Chinese name for tea). Lin. gen. no. 668. D. C. prod. 1. p. 530.

Lin. syst. *Monadélphia, Polyándria.* Calyx of 5 sepals. Petals 5-9, disposed in 2 or 3 rows, cohering at the very base. Stamens almost unconnected to the very base. Anthers roundish. Style trifid at the apex. Capsules 3-berried or 3-seeded; the dissepiments are formed from the edges of the valves being bent inwards. (Gært. fruct t. 95.)—Beautiful evergreen shrubs, with shining laurel-like leaves, and largish, white, axillary, stalked flowers.

1 T. ví'ridis (Lin. spec. 735.) leaves elliptic-oblong, serrated, 3 times longer than broad; flowers of 5-sepals, and 5-7-petals, axillary, solitary, erect; fruit nodding, dehiscent. ♄. F. Native of China and Japan. Letts. mon. t. 1.—Black. herb. t. 351. (but with the flower red.) T. Bohèa stricta, Ait. hort. kew. ed. 2. vol. 3. p. 303. T. Chinénsis, Sims, bot. mag. t. 998. T. Chinénsis, var. α víridis, D. C. prod. 1. p. 530. Camélliia víridis, Link. enum. 2. p. 73. Thèa Cantonénsis, Lour. coch. p. 339. —Lodd. bot. cab. 227.—Woodv. med. bot. suppl. 116. t. 256. Leaves pale-green. Flowers spreading, white, fragrant.

All the different kinds of teas brought to this country from China are the produce of *Thèa víridis*, and the whole differences depend upon soil and climate, and the different ages and periods at which their leaves are gathered, and different modes of drying. Dr. Lettsom observes, that a green-tea planted in the Bohea-tea country will produce Bohea-tea, and on the contrary that a plant brought from the Bohea-tea country planted in the Green-tea country will produce Green-tea. The plant loves to grow in valleys, at the foot of mountains, and upon the banks of rivers, where it enjoys a southern exposure to the sun, though it endures considerable variation of heat and cold, as it flourishes in the northern clime of Pekin, as well as about Canton, and it is observed, that the degree of cold is as severe in winter as some of the southern parts of Europe. However, the best tea grows in a mild temperate climate, the country about Nankin producing better tea than either Pekin or Canton. In Japan the tea is planted round the borders of fields without regard to soil or situation, but as the Chinese export great quantities, they plant whole fields with it. The plants are raised from seeds sown where they are to remain. Three or more are dropped into a hole 4 or 5 inches deep; these come up without any further trouble, and require little culture, except that of removing weeds. The leaves are not collected from the cultivated plants until they are 3 years old, and after growing 7 or 10 years they are cut down, in order that the numerous young shoots that will then rise may afford a greater supply of leaves. The best time to gather the leaves is while they are small, young, and juicy. The first gathering of tea leaves, according to Kæmpfer, commences about the latter end of February, when the leaves are young, and unexpanded. The second collection is made about the beginning of April, and the third in June. The first collection, which only consists of fine tender leaves, is most esteemed, and is called Imperial tea. The second is called Tootsjaa or Chinese tea, because it is infused and drank after the Chinese manner. The last, which is the coarsest and cheapest, is drank by the lower class of people. Besides the three kinds of tea here noticed, it may be observed, that by sorting these the varieties of tea become still further multiplied. The tea-trees that yield often the finest leaves grow on the steep declivities of hills, where it is dangerous, and in some cases impracticable to collect them. The Chinese are said to vanquish this difficulty by a singular contrivance. The large monkies which inhabit these cliffs are irritated, and in revenge they break off the branches and throw them down, so that the leaves are thus obtained. The leaves should be dried as soon as possible after they are gathered. The buildings or drying houses contain from 5 to 10 or 20 small furnaces, about 3 feet high, each having at the top a large flat iron pan. There is also a long low table, covered with mats, on which the leaves are laid and rolled by workmen, who sit round it; the iron pan being heated to a certain degree, a few pounds of fresh gathered leaves are put upon it, the fresh and juicy leaves crak when they touch the pan, and it is the business of the operator to shift them as quick as possible with his bare hands, till they become too hot to be easily endured. At this instant the leaves are taken off with a kind of shovel, like a fan, and thrown on the mats before the rollers, who, taking small quantities at a time, roll them in the palms of their hands in one direction, while others are fanning them that they may cool the more speedily, and retain their curl the longer. This process is repeated two or three times, or oftener, before the tea is put into the stores, in order that all the moisture of the leaves may be thoroughly dissipated, and their curl more completely preserved. On every repetition the pan is less heated, and the operation performed more slowly and cautiously. The tea is then separated into the different kinds, and deposited in the store for domestic use or exportation. The country people cure their tea-leaves in earthen kettles, which answer every necessary purpose at less trouble and expense than the process described above, and they are thus enabled to sell it cheaper. After the tea has been kept for some months, it is taken out of the vessels in which it was stored, and dried again

over a very gentle fire, that it may be deprived of any humidity which remained, or it might have since contracted. That which is brought down to Canton undergoes a second roasting, winnowing, packing, &c. from whence it is sent to Europe.

The Chinese know nothing of Imperial tea, flower of tea, and many other names which in Europe serve to distinguish the goodness and the price of tea; but besides the common tea they distinguish two other kinds, viz. the *Voui* and *Soumlo*, which are reserved for people of the first quality, and those who are sick. We have two principal kinds of tea in Europe, viz. Green tea, which is the common tea of the Chinese; T. Le Compte calls it *Bing-tea*, and says it is gathered in April; Bohea tea, which is the *Voui* or *Vou-tcha* of the Chinese, M. Le Compte makes to differ from the Green tea only by its being gathered a month before it, viz. in March, while in the bud. Others take it for the tea of some particular province, the soil being found to make as much alteration in the properties of tea as the time of gathering. As to the difference of flavour and colour peculiar to these two kinds, Dr. Lettsom thinks that there is reason to suspect that they are produced by art. As to the opinion that green tea owes its verdure to an inflorescence acquired from the plates of copper on which it is supposed to be curled or dried, there is no foundation for the suspicion, as the infusions undergo no change on the affusion of volatile alkali, which would detect the minutest portion of copper by turning the liquors blue. On the whole, Dr. Lettsom thinks it not improbable that some green dye, prepared from vegetable substances, is employed in the colouring of the leaves of the green teas. And Newmann suspects that the brown colour and flavour of the bohea teas are introduced by art. Both convey their own particular colour to water, but to rectified spirits they both impart a fine deep-green. Savory speaks of a sort of red tea or Tartar tea, called *Honan-tcha*, which tinges the water of a pale-red; it is said to be extremely digestive; by means of it the Tartars are said to be able to feed on raw flesh. The drink tea is made in China and the greatest part of the East in the same manner as in Europe. The Japanese are said to prepare their liquor in a somewhat different manner, by pulverizing the leaves, stirring the powder in hot water, and drinking it as we do coffee. The Chinese are always taking tea, especially at meals, sometimes 3, 6, or 10 times a day; it is the chief treat with which they regale their friends.

With regard to the commercial history of tea, it was first introduced into Europe by the Dutch East India Company very early in the 17th century, and a quantity of it was brought over from Holland by Lord Arlington and Lord Ossory about the year 1666, at which time it was sold for 60s. a pound. But it appears, even before this time, drinking of tea even in public coffee-houses in this country was not uncommon, for in 1660 a duty of 8d. per gallon was laid on the liquor made and sold in all coffee-houses. The present consumption of it is immense, both amongst the rich and the poor.

Tea is extolled as the greatest of all medicines, moderately and properly taken; it acts as a gentle astringent and corroborative; it strengthens the stomach and bowels, and is good against nauseas, indigestions, and diarrhœas. It acts as a diaphoretic and diuretic. The immoderate use of it is, however, very prejudicial. It refreshes the spirits in heaviness and sleepiness, and seems to counteract the effects of inebriating liquors. The activity of tea chiefly resides in the fragrant and volatile parts, which stands charged as the cause of those nervous affections that are said to be produced or aggravated by the use of this liquor. From Dr. Smith's experiments it appears that green tea has the effect of destroying the sensibility of the nerves and the irritability of the muscles; and from the experiments of Dr. Lettsom it appears that green tea gives out on distillation an odorous water, which is powerfully narcotic, but in a more recent state, as in China, it is still more powerfully narcotic, therefore the Chinese never use it until it is one year old or more, till its volatile parts are still further dissipated. It would, therefore, appear that what are considered the finer teas, contain more of this narcotic principle than what are considered the coarser kinds, especially the green teas, as the more odorous teas in this country often shew their sedative powers in weakening the nerves of the stomach, and indeed of the whole system. Its effects, however, seem to be very different in different persons, and hence the contradictory accounts that are reported of these effects.

The substitutes for teas used by the Chinese may be mentioned. A species of moss common to the mountains or Shantung, an infusion of ferns of different sorts, and Dr. Abel thinks that the leaves of the common *Camèllia* and oil *Camèllia* may be added, and Kæmpfer asserts that in Japan, a species of *Camèllia*, as well as *Olea fràgrans*, is used to give tea a high flavour. By far the strongest tea Dr. Abel tasted in China was that called *Yutien*, used only on occasions of ceremony. It scarcely coloured the water, and on examination it was found to consist of buds and half-expanded leaves. As more select sorts of tea, the flowers of *Camèllia Sasánqua* appear to be collected; the buds also appear to be gathered in some cases.

Common or *Green* Tea. Fl. Sept. Dec. Clt. 1768. Shrub 3 to 6 feet.

2 T. BOHE'A (Lin. spec. 743.) leaves elliptical-oblong, obtuse, crenated, twice as long as broad; flowers of 5 sepals, and 5 petals, axillary, twin or tern. ♄. G. Native of China and Japan. Blackw. herb. t. 352. Letts. mon. ed. 1. with a figure. Lois. herb. amat. t. 255. Lodd. bot. cab. 226. T. Chinénsis β Bohèa, Sims, bot. t. 998. D. C. prod. 1. p. 530. Leaves dark-green, coriaceous. Flowers spreading, white. This is falsely called Bohea tea, as we find the Bohea teas of the shops, as well as other kinds, both green and black, to be the leaves of the former species.—Kæmpf. amœn. t. 606.

Bohea Tea. Fl. Nov. Feb. Clt. 1780. Shrub 2 to 6 feet.

3 T. COCHINCHINE'NSIS (Lour. coch. 338.) leaves lanceolate; flowers of 3-5-sepals and 5 petals, solitary, terminal; fruit 3-lobed, usually 1-seeded, opening at the apex. ♄. G. Native in the north of Cochin-china, where it is also cultivated. Flowers white. This species is used by the inhabitants of Cochin-china medicinally, especially in hot weather, as a sudorific and refrigerent in decoction.

Cochin-china Tea. Shrub 8 feet.

4 T. OLEÒSA (Lour. coch. 339.) leaves lanceolate; flowers of 6-sepals and 6-petals; peduncles 3-flowered, axillary; fruit indehiscent. ♄. G. Native of China about Canton. Flowers white. An oil is obtained from the seed of this shrub, which the inhabitants of China use both for the table, and to burn in lamps. The fruit is more of a berry than a capsule. It is probably Camèllia oleìfera of Abel.

Oily Tea. Shrub 8 feet.

Cult. For the cultivation and propagation see *Camèllia*. The species only require to be protected from severe frost.

ORDER XXXVIII. OLACI'NEÆ (plants agreeing with *Olax* in important characters). Mirb. bull. philom. 1813. no. 75. p. 377. D. C. prod. 1. p. 531.

Calyx of 1 sepal (f. 100. *a*.), somewhat toothed, at length usually enlarged and baccate (f. 100. *h*.), perhaps it is an involucrum. Petals (sepals?) 4-6, hypogynous, rather coriaceous, valvate in æstivation, sometimes free, sometimes all or some of them connected by pairs (f. 100. *b*.), and therefore appear semibifid (f.

100. *d.*). Appendages hair-formed or filiform, simple (f. 100. *d.*), or bifid, rising from the disk of the petals or near the margins of them (f. 100. *c.*). Stamens 3 (f. 100. *b.*) to 10, hypogynous (f. 100. *b.*) or epipetalous; filaments compressed, awl-shaped; anthers cordate-oblong, erect, 2-celled; ovary free, 1 (f. 100. *i.*) -4-celled; cells 1-seeded. Style 1, filiform (f. 100. *e.*). Fruit somewhat drupaceous, indehiscent, girded by the large fleshy calyx, 1-celled, 1-seeded from abortion (f. 100. *h. i.*). Seed pendulous, umbilicate at the base. Albumen fleshy, large. Embryo small, enclosed in the albumen, egg-shaped, basilar, with the radicle directed towards the umbilicus, and with continuous cotyledons. Smooth trees or shrubs, with simple, stalked, alternate, exstipulate, entire leaves, rarely without, and small axillary flowers. The place which this order should occupy in the natural system is extremely doubtful. If the calyx is to be considered an involucre and the petals a calyx, then *Olacíneæ* must come in the subclass *Monochlamýdeæ*, not far from *Santalàceæ*, but if the corolla and calyx are admitted the order comes into subclass *Calyciflòræ*, not far from *Sapòteæ*, but if the petals are to be considered as distinct or variously joined, *Olacíneæ* must be admitted into subclass *Thalamiflòræ*.

Synopsis of the Genera.

§ 1. *Petals twice the number of the antheriferous stamens.*

1 O'lax. Calyx entire. Petals 6, joined to the middle by pairs. Appendages 6, filiform, bifid. Stamens 3, adnate with each other and with the petals.

2 Sperma'xyrum. Calyx entire (f. 100. *a.*), not enlarging. Petals 5, 4 of which are joined to the middle by pairs, and with the stamens, the middle one free. Appendages filiform, simple (f. 100. *d.*). Stamens 3 (f. 100. *b.*), 2 of which are adnate to the petals, the third free (f. 100. *b.*).

3 Fissi'lia. Calyx entire, enlarged. Petals 5, 4 of which are joined by pairs and with the stamens, the fifth free. Appendages filiform, simple. Stamens 3, 2 of which are adnate to the petals, the third free.

§ 2. *Stamens double the number of the petals.*

4 Heiste'ria. Calyx 5-cleft. Petals 5, distinct. Stamens 10. Style crowned by a trifid stigma.

5 Xime'nia. Calyx 4-cleft. Petals 4, hairy inside, conniving at the base, revolute at the top. Stamens 8.

6 Ge'la. Calyx 4-toothed. Petals 4, linear, smooth. Stamens 8. Stigma bifid.

† *Genera not sufficiently known.*

7 Pseudale'ia. Calyx nearly entire. Petals 3, conniving into a tube. Stamens 6, adnate to the petals. Appendages filiform, bifurcate, on each side of the petals.

8 Pseudaleioìdes. Calyx small, entire. Petals 4, unequal, conniving at the base. Stamens 6, adnate to the petals.

9 Icacìna. Calyx 5-cleft. Petals 5. Stamens 5. Style crowned by a truncate stigma.

§ 1. *Petals double or about double the number of the antheriferous stamens.*

I. O'LAX (so called, as Linnæus informs us, from *oλαξ*, *olax*, a furrow, but how it applies to the plant we are not informed; nor is the difficulty of the question lessened by the name being ranged in Phil. Bot. among those which allude to the medicinal effects of the plants that bear them). Lin. amœn. 1. p. 387. Gært. fruct. 3. p. 119. t. 201. D. C. prod. 1. p. 531.

Lin. syst. *Triándria, Monogýnia.* Calyx small, entire, becoming large and baccate after flowering. Petals 6, joined to the middle by pairs, or 3 semibifid ones, with 6 bifid, filiform appendages, one of which is inserted in the disk of each of the petals. Stamens 3; filaments connected with the petals, and therefore bear an ovate anther between each fissure. Drupe dry, 1-seeded, surrounded by the calyx. Flowers in axillary racemes. Leaves entire, ovate-oblong, 1-nerved, entire.

1 O. Zeyla'nica (Lin. spec. 49.) leaves ovate, pointed, smooth; branches angular, flaccid; stem unarmed. ♄. S. Native of Ceylon. Vahl. symb. 3. p. 7. Flowers white.

Ceylon Olax. Tree 20 feet.

2 O. sca'ndens (Roxb. cor. 2. p. 102.) leaves elliptical, obtuse, pubescent beneath; branches round, climbing; stem armed with strong prickles. ♄. ◡. S. Native of Coromandel. Flowers white, with yellow appendages. Drupe yellow.

Climbing Olax. Fl. year. Clt. 1820. Shrub cl.

3 O. imbrica'ta (Roxb. in fl. ind. 1. p. 169.) climbing; leaves bifarious; ovate-lanceolate or oblong, entire, glossy; racemes axillary, bifariously imbricated before the flowers expand; drupes ovate. ♄. ◡. S. Native of the East Indies at Chittagong. Flowers white, with yellowish appendages.

Imbricated-racemed Olax. Fl. July. Clt. 1820. Shrub climbing.

4 O. obtu'sa (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 663.) shrubby; leaves bifarious, ovate or oval-oblong, very blunt, pubescent beneath as well as the terete branches; spikes axillary, very short, bifariously imbricated before expansion; drupe globose. ♄. ◡. S. Native of Java.

Obtuse-leaved Olax. Shrub climbing.

Cult. The species of *O'lax* will thrive well in a mixture of loam and sand; and cuttings will strike root in sand under a hand-glass, in heat.

II. SPERMA'XYRUM (from *σπερμα*, *sperma*, a seed, *αξυρα*, *axyra*, an anchor. The umbilicle funicle is of the form of an anchor). Lab. nov. holl. 2. p. 84.—Oláx, R. Brown, prod. 1. p. 358.—D. C. prod 1. p. 352.

Lin. syst. *Triándria, Monogýnia.* Calyx small, entire, not enlarging after flowering (f. 100. *h.*). Petals 5, 4 of which are united to the middle by pairs, as well as to the filaments of stamens, both are therefore semibifid, the fifth is unconnected and entire. Appendages or nectaries simple, filiform (f. 100. *d.*). Stamens 3, 2 of which adhere to the joined petals, the third is free (f. 100. *b.*). Ovary 1-celled, containing 3 ovulæ; ovulæ hanging from the apex of the central, filiform column. Drupe dry, 1-seeded (f. 100. *i.*). Leaves in 2 rows, and are arranged along the branches as if they were the leaflets of a pinnate leaf, disposed on their petiole. Flowers small, sometimes polygamous from abortion.

§ 1. *Phyllanthoídeæ* (*Phyllánthus and idea, like; plants with the habit of Phyllánthus*). *D. C. prod.* 1. *p.* 533. *Leaves disposed in 2 rows along the branches. Peduncles* 1*-flowered.*

1 S. phylla'nthi (Lab. nov. holl. 2. t. 233.) leaves oval, retuse. ♄. G. Native of New Holland in Van Lewin's Land. Oláx phyllánthi, R. Br. prod. 1. p. 358. Flowers white?

Phyllanthus-like Spermaxyrum. Shrub 6 feet.

2 S. stri'ctum (D. C. prod. 1. p. 532.) leaves oblong-linear, mucronate. ♄. G. Native of New Holland about Port Jackson. Oláx stricta, R. Brown, prod. 1. p. 358.

Straight Spermaxyrum. Clt. 1820. Shrub 6 feet.

FIG. 100.

§ 2. *Osyroídeæ* (*Osyris and idea, like; plants with the habit of Osýris*). *D. C. prod.* 1. *p.* 532. *Leaves like scales, almost none; flowers almost sessile in the axils of the scales, and appear as if constituting a terminal spike.*

3 S. aphy'llum (D. C. prod. 1. p. 532.) leaves almost wanting; flowers sessile, somewhat spiked. ♄. S. Native of New Holland between the tropics. Oláx aphýlla, R. Br. prod. 1. p. 358. Flowers whitish.

Leafless Spermaxyrum. Sh. 6 feet.

Cult. These shrubs will thrive well in a mixture of loam and peat; and cuttings will root in sand under a hand-glass.

III. FISSI'LIA (from *fissus*, cloven; four of the petals being joined at the base, appear as if they were cloven at the apex). Comm. in Juss. gen. 260. D. C. prod. 1. p. 532.

Lin. syst. *Triándria, Monogýnia*. Calyx entire, enlarging after flowering. Petals 5, 4 of which are connected together by pairs to the middle, and are therefore semibifid, the fifth one free. Appendages or nectaries filiform, simple. Stamens 3, 2 of which are adnate to the connected petals and adhering a considerable way, the third one free; filaments flat; anthers elliptical, oscillatory. Ovary 3-celled, 3-seeded. Drupe dry, 1-seeded, girded by the cup-like calyx.

1 F. psitacco'rum (Lam. dict. and illus. t. 28.). ♄. S. Native of Mauritius. O'lax psitaccòrum, Vahl. enum. 2. p. 33. Branches stiff. Leaves ovate-oblong or lanceolate, nerveless. Racemes axillary, few-flowered. Flowers small, white. Parrots are very fond of the fruit of this tree, whence the specific name.

Parrot Fissilia. Tree 20 feet.

Cult. This tree will thrive in a mixture of loam and peat; and cuttings will root in sand under a hand-glass, in heat.

§ 2. *Stamens double the number of the petals.*

IV. HEISTE'RIA (in honour of Laurence Heister, a celebrated physician and anatomist, once Professor of Botany at Helmstadt; died in 1758). Lin. gen. no. 535. but not of Berg. D. C. prod. 1. p. 532.

Lin. syst. *Decándria, Monogýnia*. Calyx small, 5-cleft, becoming very much enlarged after flowering, and cup-shaped, with a spreading border. Petals 5, distinct. Stamens 10; with flat filaments and roundish anthers. Style short. Stigma trifid. Ovary 3-celled, each containing 1 ovula. Drupe 1-celled, 1-seeded from abortion, the form of an olive, half hid by the permanent calyx; seed pendulous. Integument thin. Albumen very fleshy. Embryo small, situated near the hilum at the top of the seeds, with the radicle pointing towards the hilum. Unarmed trees, with alternate, entire, exstipulate, coriaceous leaves, with the petioles jointed at the base. Flowers small, axillary, with the pedicels jointed at the base.

1 H. cocci'nea (Jacq. amer. 126. t. 81.) leaves lanceolate, rounded at the base, shining; flowers twin or numerous, axillary; calyx when in fruit spreading, with obtuse lobes. ♄. S. Native of Martinique in woods, where it is vulgarly called *Bois perdrix* by the French inhabitants, because birds are very fond of the fruit, and of Brazil at Rio Janeiro. Lam. ill. 354. Smith, in Rees' cycl. 17. no. 1. Flowers small, white. The calyx is dark-purple when the fruit is ripe.

Scarlet-calyxed Heisteria. Fl. Dec. Clt. Tree 15 feet.

2 H. cauliflòra (Smith, in Rees' cycl. no. 2.) leaves oblong, sometimes obovate, tapering to the base; flowers rising from the naked stem and branches; calyx closed when in fruit, deeply-lobed. ♄. S. Native of Dutch Guiana. Flowers small and probably white.

Stem-flowered Heisteria. Tree 60 feet?

3 H. parvifòlia (Smith, in Rees' cycl. no. 3.) leaves ovate, acute, shining; flowers axillary; calyx when in fruit spreading, with deep ovate lobes. ♄. S. Native of Sierra Leone. Branches rather flattened. Recesses of calyx reflexed. Flowers small and probably white. Calyx red.

Small-leaved Heisteria. Tree.

Cult. These trees will thrive well in a mixture of loam, sand, and peat; and cuttings will root in sand under a hand-glass, in heat.

V. XIME'NIA (Francis Ximenes, a Spanish monk, who has published four books on the plants which are used in medicine, and animals of New Spain). Plum. gen. 6. t. 21. D. C. prod. 1. p. 533.

Lin. syst. *Octándria, Monogýnia*. Calyx small, 4-cleft, permanent, not enlarged when in fruit. Petals 4, hairy inside and conniving at the base, revolute above, valvate in æstivation. Stamens 8, with capillary filaments, 4 of which are opposite the petals. Anthers fixed by the base, 2-celled, bursting lengthwise at the sides. Ovary 4-celled, 4-seeded. Stigma trifid. Drupe olive-formed, 1-celled, 1-seeded from abortion. Trees or shrubs, usually armed with spines, with alternate, ovate, or lanceolate exstipulate leaves and male axillary flowers.

1 X. America'na (Lin. spec. 497.) branches spinose, peduncles axillary, many-flowered, umbellate, the lower ones usually changed into spines; leaves oblong, entire. ♄. S. Native of South America. Flowers small, greenish-yellow inside, sweet-scented. The fruit is yellow, about the size of a pigeon's egg, of a somewhat acid sweet taste, and is eaten by the natives.

Var. α, ovàta (D. C. prod. 1. p. 533.) leaves ovate. ♄. S. Native of the West Indies and Brazil. X. multiflòra, Jacq. amer. 106. t. 277. f. 31. Lam. ill. t. 297. f. 1. Fruit yellow, drupaceous. Petals greenish.

Var. β, oblónga (D. C. prod. 1. p. 533.) leaves oblong. ♄. S. Native of Guiana. Heymassòli spinòsa, Aubl. guian. 1. p. 324. t. 125.—Lam. ill. t. 297. f. 2.

American Ximenia. Fl. June, Sept. Clt. 1759. Sh. 15 ft.

2 X. elli'ptica (Forst. prod. no. 162.) branches unarmed; peduncles many-flowered; leaves elliptical-lanceolate. ♄. S. Native of New Caledonia. Flowers small, yellowish?

Elliptical-leaved Ximenia. Tree 15 feet.

3 X. ine'rmis (Lin. spec. 497.) unarmed; pedicels 1-flowered; leaves ovate. ♄. S. Native of Jamaica. Liman. hort. jam. 2. p. 156. Flowers small, greenish-yellow.

Unarmed Ximenia. Clt. 1818. Tree 15 feet.

4 X.? fe'rox (Poir. dict. suppl. no. 3.) peduncles somewhat

umbellate; branches spinose; leaves roundish, coriaceous, almost sessile, pubescent. ♄. S. Native of Hispaniola. Flowers small, yellowish?

Fierce-branched Ximenia. Tree?

Cult. The species of *Ximènia* thrive well in a mixture of loam and peat; and cuttings will root in sand under a hand-glass, in heat.

VI. GE'LA (from γελα, *gela*, the light of the sun, which is from γελεω, *geleo*, to shine; in allusion to the shining leaves). Lour. coch. 1. p. 285.—Sèlas, Spreng. syst. 2. p. 172.

Lin. syst. *Octándria, Monogýnia.* Calyx very short, 4-parted. Petals 4, linear, smooth. Stamens 8. Anthers roundish. Style 1. Stigma bifid. Drupe 1-seeded. A little tree, with ovate, shining, quite entire, opposite leaves, and small yellowish flowers disposed in axillary corymbs.

1 G. lanceola'ta (Lour. cochin. 4. p. 285.). ♄. G. Native of Cochin-china. Sèlas lanceolàtum, Spreng. syst. 2. p. 216. Ximènia lanceolàta. D. C. prod. 1. p. 533.

Lanceolate-leaved Gela. Clt. 1823. Shrub 5 feet.

Cult. A mixture of loam, peat, and sand will suit this shrub well; and cuttings will root in sand under a hand-glass.

† *Genera not sufficiently known, but certainly belonging to the present order.*

VII. PSEUDALE'IA (ψευδο, *pseudo*, false, ελαια, *elaia*, an olive; form of fruit like that of an olive). Pet. Th. gen. mad. no. 51. D. C. prod. 1. p. 533.

Lin. syst. *Hexándria, Monogýnia.* Calyx small, nearly entire. Petals 3, conniving into a tube. Filaments 6, adnate to the petals, hence they appear epipetalous. Capillary threads forked at the apex on each side of the petals. Ovary conical. Style length of corolla. Stigma 3-lobed. Drupe spherical, 1-seeded. Seeds exalbuminous. Embryo with indistinct fleshy cotyledons. From the flowers this shrub appears to be intermediate between *O'lax* and *Heistèria*, but the seed is truly distinct.

1 P. Madagascarie'nsis (D. C. prod. 1. p. 533.) ♄. S. Native of Madagascar. A little branching tree, with alternate smooth leaves, and axillary few-flowered peduncles. O'lax pseudalèia. Willd. in Steud. nom. Flowers white?

Madagascar Pseudaleia. Shrub 10 feet.

Cult. A mixture of loam and sand will suit this tree very well; and cuttings will root in sand, under a hand-glass, in heat.

VIII. PSEUDALEIOI'DES (in reference to its similarity to the foregoing genus). Pet. Th. gen. mad. no. 52. D. C. prod. 1. p. 533.

Lin. syst. *Hexándria, Monogýniá.* Calyx small, entire. Petals 4, unequal, broad and connivent at the base. Stamens 6, with broad filaments, unequally applied to the petals, and appear to be inserted in them. Anthers inserted by their apex. Ovary 1-seeded. Style length of corolla. Stigmas 3, globose. Fruit unknown.

1 P. Thoua'rsii (D. C. prod. 1. p. 533.). ♄. S. Native of Madagascar. A weak shrub with alternate leaves and unilateral few-flowered racemes. O'lax pseudaleioìdes, Willd. in Steud. nom. Flowers small, and probably white.

Du Petit *Thouars's* Pseudaleioides. Shrub 6 feet.

Cult. See *Pseudalèia* for cultivation and propagation.

† *A genus allied to Olacìneæ.*

IX. ICACI'NA (this name refers to the similarity of the plant with that of *Chrysobálanus Icàco*, a name given by the Americans to the fruit of that shrub). Adr. Juss. mem. soc. hist. nat. par. 1823. 1. p. 174. D. C. prod. 1. p. 534.

Lin. syst. *Pentándria, Monogýnia.* Calyx short, 5-cleft, usually permanent. Petals 5, valvate in the bud, alternating with the lobes of the calyx and 3-times larger than them, villous on the inside at the base. Stamens 5, erect, alternating with the petals. Anthers cordate, fixed by their middle, 2-celled; cells opening lengthwise. Style simple, incurved, truncate at the apex. Ovary seated on a glandular disk, 1-celled. Fruit fleshy, containing a large nut. A shrub with simple, alternate, exstipulate, short-stalked, ovate, entire, reticulately-nerved leaves, and small panicles of white flowers.

1 I. Senegale'nsis (Ad. de Juss. l. c. t. 9.). ♄. S. Native all along the coast of Guinea by the sea-side. Chrysobálanus lùtea, Hort. trans. 5. p. 453. This is a spinose shrub, it has much the habit of *Cìtrus limònum*. The fruit is about the size of an Orlean's plum, of a yellow colour, with a flavour much resembling that of noyeau.

Senegal Icacina. Fl. April, May. Shrub 10 feet.

Cult. This shrub would thrive in this country in a mixture of one-quarter loam and three-quarters sand, which should be repeatedly watered with salted water, and ripened cuttings will probably root in sea-sand under a hand-glass, in heat.

Order XXXIX. AURANTIA'CEÆ (plants agreeing with the *Orange* in important characters). Corr. ann. mus. 6. p. 376. Mirb. bull. phil. 1813. p. 379. D. C. prod. 1. p. 535.

Calyx urceolate, campanulate, somewhat adnate to the disk, short, 3-5-toothed (f. 101. *a.*), marcescent. Petals 3-5 (f. 101. *b.*), broadest at the base, sometimes free, sometimes a little connected at the base, inserted on the outside of the disk, imbricate in æstivation by the margins. Stamens equal in number with the petals, or double, or multiple (f. 101. *c.*) that number; filaments flat at the base, sometimes free, sometimes variously connected in many bundles, sometimes truly monadelphous, but always free at the apex, and subulate. Anthers terminal, inserted by the base, erect. Ovary ovate, many-celled (f. 101. *d.*). Style 1, terete, crowned by a thick subdivided stigma. M. Decandolle thus explains the structure of the fruit, the orange; first, of a thick, valveless, indehiscent indusium or coat, which is most likely to be considered a continuous torus; secondly, of several carpels in a whorl, around an imaginary axis, often separable without laceration, membranous, and either containing seeds only, or filled with pulp, lying in innumerable little bags, proceeding from the inner coat of the cells. Seeds situated in the carpels, fixed to their inner angles, numerous or solitary, exalbuminous, usually pendulous, often inclosing many embryos. Seed-cover usually marked with a raphis and cup-shaped chalaza. Embryo straight, with a retracted superior radicle, turned towards the hilum, and large thick cotyledons, which are auricled at the base, and a conspicuous plumule.—This order consists of smooth trees and shrubs of the greatest beauty and utility. The leaves are alternate, articulated above the stem, sometimes compound, with one or many pairs of leaflets, the terminal one always standing on a winged, leafy or dilated petiole, which is furnished with a joint, sometimes simple, with a dilated, jointed petiole, and sometimes reduced to the dilated petiole, the terminal leaflet being abortive. Axillary spines not always present. The

leaves, indusium of fruit, stamens, filaments, petals, and calyx abounding in transparent reservoirs of odoriferous oil, which are the most obvious characters. This oil possesses powerful tonic and stimulating properties. The flowers are fragrant, and the fruit in all cases fleshy, and generally eatable. The well known orange, lemon, lime, and shaddock are the representatives of this order.

Synopsis of the Genera.

1 Atala'ntia. Parts of flower quaternary. Stamens 8, monadelphous, but free at the apex. Anthers terminal. Fruit 4-celled, 4-seeded. Leaves simple.

2 Tripha'sia. Parts of flower ternary. Stamens 6, free, rarely 5 or 8. Anthers rather sagittate. Fruit 3-celled, rarely 2-4. Cells 1-seeded. Leaves simple or ternate.

3 Limònia. Parts of flower quaternary or quinary. Stamens free, 8-10, rarely 4-5. Fruit pulpy, 4-5-celled. Cells 1-seeded. Leaves simple or trifoliate.

4 Scleróstylis. Parts of flower quaternary or quinary. Stamens 8-10. Anthers cordate. Fruit dry, 1-2-celled; cells 1-2-seeded. Leaves simple, trifoliate or pinnate.

5 Coókia. Parts of flower quinary. Stamens 10, free. Anthers roundish or cordate. Fruit baccate, subglobose, 5-celled; cells 1-seeded. Leaves pinnate.

6 Murra'ya. Parts of flower quinary. Stamens 10, free. Anthers roundish. Fruit fleshy, 1-2-celled; cells 1-seeded. Leaves pinnate.

7 Microme'lum. Calyx entire. Petals 5. Stamens 10, free. Anthers roundish, didymous. Fruit dry, 5-celled; cells 1-2-seeded. Leaves pinnate.

8 Aglai'a. Parts of flower quinary. Stamens 5, monadelphous, with the anthers inclosed. Fruit baccate, 1-seeded. Leaves pinnate.

9 Berge'ra. Parts of flower quinary. Stamens 10, free. Anthers roundish. Fruit baccate, usually 1-celled, 1-seeded. Leaves pinnate.

10 Clauce'na. Parts of flower quaternary or quinary. Stamens 8-10; filaments dilated at the base, and conniving. Anthers ovate-roundish. Fruit nearly dry, 1-celled, 1-seeded from abortion. Leaves pinnate.

11 Glyco'smis. Parts of flower quinary. Stamens 10, flat. Anthers elliptical. Fruit fleshy, 1-2-celled; cells 1-seeded. Leaves pinnate.

12 Ferònia. Parts of flower quinary. Stamens 10, free, dilated and villous at the base. Anthers oblong. Fruit baccate, many-celled; cells many-seeded. Leaves pinnate.

13 Æ'gle. Parts of flower ternary or quinary (f. 101. *b.*). Stamens 30-40, free (f. 101. *c.*). Anthers long, linear, mucronate. Fruit baccate, woody, turbinately-globose, many-celled (f. 101. *d.*); cells many-seeded. Leaves trifoliate.

14 Ci'trus. Parts of flower usually quinary. Calyx 3-5-cleft. Petals 5-8. Stamens 20-60; filaments compressed, more or less connected at the base into many bundles. Fruit baccate, 7-12-celled; cells many-seeded, pulpy. Leaves simple, with a flat or winged petiole.

I. ATALA'NTIA (from Atalanta, the daughter of Schæneus, so swift that she promised to marry him who outran her, but was overtaken by Hippomanes by casting three golden apples in her way. The fruit of this tree is of a golden-yellow colour.) Corr. ann. mus. 6. p. 383. D. C. prod. 1. p. 535.

Lin. syst. *Monadélphia, Octándria.* Calyx 4-toothed. Petals 4. Stamens 8, monadelphous at the base, but are unconnected at the apex. Anthers terminal. Pistil villous. Fruit spherical, 4-celled, 4-seeded.—A thorny shrub, with simple leaves.

1 A. monophy'lla (D. C. prod. 1. p. 535.) ♄. S. Native of the East Indies. Limònia monophýlla, Roxb. cor. 1. p. 59. t. 83. Leaves ovate-oblong, emarginate at the apex. Spines small, simple. Racemes axillary. Flowers small, white. Fruit yellow, about the size of a nutmeg, very like a lime, and is called by the Hindoos *wild lime.*

One-leaved Atalantia. Fl. June, Aug. Clt. 1777. Shrub 8 ft.

Cult. Atalántia will succeed well in a mixture of loam and peat, and ripened cuttings planted in sand under a hand-glass will root readily, in heat.

II. TRIPHA'SIA (from τριφασιος, *triphasios*, triple; in allusion to the calyx being 3-toothed, and the 3 petals.) Lour. fl. coch. 1. p. 189. D. C. prod. 1. p. 535.

Lin. syst. *Hexa-Octándria, Monogýnia.* Calyx 3-toothed. Petals 3. Stamens 6, unconnected, rarely 5 or 8; filaments awl-shaped, flat. Anthers somewhat sagittate. Fruit 1-3-celled; cells 1-seeded, filled with mucilage. Embryos many in the seed.—Shrubs, furnished with straight axillary spines, and with simple or trifoliate leaves.

1 T. monophy'lla (D. C. prod. 1. p. 536.) leaves simple, oblong. ♄. S. Native in the island of Timor. Leaves almost sessile, blunt. Racemes small in the axils of the spines, shorter than the leaves. Flowers small, white. Fruit unknown. This shrub has the habit of *Atalántia*, but with the flower of *Triphàsia.* Fruit 5-celled?

One-leaved Triphasia. Shrub 6 feet.

2 T. sarmentòsa (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 663.) arboreous; stem prickly; branches sarmentose, hooked; leaves ternate and simple; leaflets oblong, acuminated, quite entire, stalked; corymbs axillary. ♄. S. Native of Java. Calyx 3-4-toothed. Stamens 8. Fruit egg-shaped, 2-3-celled, 2-3-seeded, full of mucilaginous pulp.

Rambling Triphasia. Tree.

3 T. trifolia'ta (D. C. prod. 1. p. 536.) leaves 3-foliate; leaflets ovate, retuse, emarginate at the top, the lateral ones smallest. ♄. S. Native of the East Indies, Cochin-china, and China. Limònia trifoliàta, Lin. mant. 237. Jacq. icon. rar. t. 463. Andr. bot. rep. t. 143. T. Aurantìola, Lour. p. 153. Leaves on short petioles, trifoliate; leaflets ovate, terminal one usually emarginate. Flowers white, sweet smelling. Stamens 6. Fruit of a red-bay colour, soft, the size of a hazel-nut. The pulp is colourless, very sweet, with a slight taste of turpentine; before it is ripe glutinous, and tasting strong of turpentine. Loureiro says, that the berry is red, and ovate like those of coffee, but only half the size, covered with a thin pellicle, and containing a clammy, sweet, inodorous, eatable pulp, and a single ovate seed.

Trifoliate Triphasia. Fl. May, July. Shrub 5 feet.

Cult. The species of *Triphàsia* will grow well in a mixture of turfy loam and peat; but care must be taken not to sodden them with water during winter. Cuttings not too ripe, but ripened at the base, will root readily in sand under a hand-glass, in heat.

III. LIMO'NIA (*Lymoun* is the Arabic name of the citron.

The species of this genus have the appearance of the citron as well as its acid fruit). Lin. gen. no. 524. D. C. prod. 1. p. 536.

LIN. SYST. *Octo-Decándria, Monogýnia.* Calyx 4-5-parted. Petals 4-5. Stamens unconnected, equal or double the number of petals. Fruit baccate, pulpy, 4-5-celled; cells 1-seeded. This genus includes an heterogeneous mass of species.

* *Leaves simple. The genus to which these plants should be referred is doubtful, owing to the parts of fructification being insufficiently known.*

1 L. LU'CIDA (Forst. prod. no. 191.) leaves simple; peduncles axillary. ♄. S. Native of the island of Mallicolla in the South Seas. Flowers white.

Shining-leaved Limonia. Shrub.

2 L. LAURE'OLA (D. C. prod. 1. p. 536.) leaves simple; flowers terminal, in corymbose heads. ♄. G. Native of Nipaul. Leaves exactly like those of *Dáphne laurèola.* Calyx 5-parted. Petals and stamens 5. Flowers white.

Spunge-*laurel*-leaved Limonia. Shrub.

3 L. RETU'SA (D. Don, prod. fl. nep. p. 224.) leaves elliptical, blunt at the apex, and emarginate, acute at the base; petioles semi-cylindrical; peduncles usually solitary, 1-flowered, one-half shorter than the leaves. ♄. G. Native of Nipaul at Sirinagur. Flowers white?

Retuse-leaved Limonia. Shrub.

** *Leaves trifoliate. Shrubs with the habit of Toddàlia.*

4 L. CITRIFÒLIA (Willd. enum. 448.) leaves simple and trifoliate; leaflets ovate-oblong, acuminated; pedicels axillary, shorter than the petioles. ♄. G. Native of China. Flowers small, white. Berry red.

Citron-leaved Limonia. Fl. year. Clt. 1800? Shrub 5 ft.

5 L.? DIACA'NTHA (D. C. prod. 1. p. 536.) leaves trifoliate; leaflets oval, somewhat emarginate; spines axillary, twin, straight. ♄. S. Native of Pondicherry. Flowers small, white, pentandrous?

Two-spined Limonia. Shrub.

6 L.? HO'RRIDA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 663.) leaflets 3, ovate-oblong, bluntish, obsoletely crenulated, intermediate one stalked and larger than the rest; spines twin, infra-axillary, divaricate, straight. ♄. S. Native of Java. Perhaps the same as *L. diacántha.*

Horrid Limonia. Shrub.

7 L.? DU'BIA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 665.) leaflets 3, sessile, oblong, tapering to the base, retuse at the apex, quite entire, lateral ones small; common petiole marginate. ♄. S. Native of Java. Young branches spinose; spines axillary, twin, straight.

Doubtful Limonia. Shrub.

8 L.? MAURITIA'NA (Lam. dict. 3. p. 517.) leaves trifoliate; leaflets oval, somewhat mucronate; panicles axillary; spines none. ♄. S. Native of the Mauritius. Flowers white, quadrifid, octandrous.

Mauritian Limonia. Shrub.

*** *Leaves impari-pinnate, with wingless petioles. Thorns wanting.*

9 L. MADAGASCARIE'NSIS (Lam. dict. 3. p. 517.) leaves pinnate, with 4-5 alternate, lanceolate, toothed leaflets; panicles short, axillary. ♄. S. Native of Madagascar. Flowers white.

Madagascar Limonia. Shrub 6 feet.

10 L. PARVIFLÒRA (Sims, bot. mag. t. 2416.) leaves with 2 pairs of elliptical-lanceolate, quite entire leaflets; corolla campanulate; fruit ovate-spheroid, oblique. ♄. G. Native of China. Flowers white.

Small-flowered Limonia. Fl. year. Clt.? Shrub 6 feet.

11 L. MINU'TA (Forst. prod. no. 190.) leaves pinnate; racemes corymbose, terminal. ♄. S. Native of the Friendly Islands. Flowers white.

Minute Limonia. Shrub.

**** *Leaves impari-pinnate, with winged petioles. Spines axillary. True Limònia.*

12 L. ACIDI'SSIMA (Lin. mant. 380.) leaves with 2 pairs of obovate, somewhat emarginate leaflets; spines solitary; fruit egg-shaped. ♄. S. Native of the East Indies.—Rumph. amb. 2. t. 43. Calyx 5-parted. Petals 5, whitish. Filaments 10. Fruit about the size of a nutmeg, yellowish, but reddish when perfectly ripe. Pulp flesh-coloured, very acid, and is used by the inhabitants of Java instead of soap.

Very-acid-fruited Limonia. Shrub 6 to 10 feet.

13 L. CRENULA'TA (Roxb. cor. 1. t. 86.) leaves pinnate, with 2 or 3 pairs of oblong-elliptical crenulated leaflets; spines solitary; fruit globose. ♄. S. Native on the Coromandel coast. Calyx 4-cleft. Petals 4, white. Stamens 8.—Rheed. mal. 4. t. 14. Fruit about the size of a large pea, when ripe black. It is much used on the coast of Malabar as a medicine. Flowers sweet-scented. Petioles with broad wings.

Crenulate-leaved Limonia. Fl. July. Clt. 1808. Shrub 6 to 10 feet.

14 L. AMBI'GUA (D. C. prod. 1. p. 536.) leaves pinnate; spines in pairs; leaflets roundish-oval. ♄. G. Cultivated in Eastern Florida? L. acidíssima? Nutt. in Sillim. journ. amer. 5. 1822. p. 295. Perhaps a variety of *L. acidíssima* or *L. crenulàta.*

Ambiguous Limonia. Shrub 6 feet.

Cult. The species of *Limònia* will thrive well in a mixture of loam and peat, with the addition of a little rotten dung; ripened cuttings will root in sand under a hand-glass, in a moist heat.

IV. SCLERO'STYLIS (σκληρος, *scleros*, hard, and στυλος, *stylos*, a style; in allusion to the style being thick and hard). Blum. bijdr. ex Schlecht. Linnæa. 1. p. 665.

LIN. SYST. *Octo-Decandria, Monogýnia.* Calyx 4-5-parted. Petals 4-5, connivent or spreading. Stamens free, double the number of the petals; filaments awl-shaped, flat, alternate ones for the most part longest; anthers cordate. Ovary 1-3-celled. Style short, thick, crowned by an obtuse stigma. Berry dry, 1-2-celled, 1-2-seeded. Auricles of cotyledons inconspicuous. Shrubs with simple or impari-pinnate leaves. This genus is nearly allied to *Triphàsia.*

* *Leaves simple.*

1 S. SPINÒSA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 664.) spinose; leaves oblong, acutish, rounded at the base, obsoletely crenulated; peduncles 1-flowered, solitary or crowded; ovary 3-celled; cells 2-seeded. ♄. S. Native of Java. Limònia spinòsa, Spreng. syst. append. 162.

Spinose Sclerostylis. Shrub.

2 S. LANCEOLA'TA (Blum. l. c.) unarmed; leaves oblong-lanceolate, bluntish at the apex; racemes axillary, short. ♄. S. Native of Java. Glycósmis simplicifòlia, Spreng. Ovary 2-celled; cells 1-seeded.

Lanceolate-leaved Sclerostylis. Shrub.

** *Leaves simple and trifoliate.*

3 S. TRIFOLIA'TA (Blum. l. c.) unarmed; leaves simple or trifoliate, oblong-lanceolate, obtuse; racemes axillary, very short. ♄. S. Native of Java. Glycósmis trifoliàta, Spreng. Ovary 3-celled; cells 1-seeded.

Trifoliate Sclerostylis. Shrub.

* * * *Leaves impari-pinnate.*

4 S. PENTAPHY'LLA (Blum. l. c.) unarmed; leaflets 5, rarely 7, oval-oblong, obtuse; racemes axillary, very short; berry globose. ♄. S. Native of Java. Ovary 3-celled; cells 1-seeded.

Five-leaved Sclerostylis. Shrub.

5 S.? MACROPHY'LLA (Blum. l. c.) unarmed; leaflets usually 5, rarely twin or ternate, ovate-oblong, obtusely acuminated, quite entire; racemes divaricate, axillary, very long, tapering to both ends. ♄. S. Native of Java. Calyx 5-toothed. Ovary 3-celled; cells 1-seeded. Perhaps *Glycósmis pentaphýlla*.

Long-leaved Sclerostylis. Shrub.

Cult. Loam and peat will be a good mixture for these shrubs, with the addition of a little rotten dung, and ripened cuttings will root if planted in a pot of sand placed under a hand-glass, in a moist heat.

V. COO'KIA (in memory of the celebrated circumnavigator, Captain James Cook, R. N., who was killed in the Sandwich Islands in 1779). Sonner. voy. 2. p. 130. t. 131. D. C. prod. 1. p. 537.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-cleft. Petals 5, navicular, villous. Stamens 10, with free linear filaments and roundish anthers. Ovary villous. Fruit baccate, somewhat globose, 5-celled, or 1-2-celled from abortion; cells 1-seeded. Small trees with impari-pinnate leaves; leaflets alternate, unequal at the base or oblique.

1 C. PUNCTA'TA (Retz. obs. 6. p. 29.) leaflets ovate-lanceolate, acuminated, hardly unequal at the base. ♄. G. Native of China and the Moluccas. Jacq. schœnbr. 1. t. 101. Lam. ill. t. 354. Quinària Lánsium, Lour. coch. 272.—Rumph. amb. 1. t. 55. A middle-sized tree bearing eatable fruit about the size of a pigeon's egg, yellow on the outside; pulp white, rather acrid but sweet. Flowers small, white, disposed in racemose panicles. There are 2 other figures of *Lansiums* in Rumph. amb. which are probably varieties of this plant or perhaps distinct species. The fruit is sold in the markets at Canton.

Dotted Wampee-tree. Clt. 1795. Tree 20 feet.

2 C. FALCA'TA (D. C. prod. 1. p. 537.) petals with 4 furrows on the inside; leaflets lanceolate, falcate. ♄. G. Native of Cochin-china. Aulàcea falcàta, Lour. cochin. 273. Branches spreading. Flowers small, white, in terminal racemes.

Sickle-leaved Wampee-tree. Shrub 8 feet.

3 C. CYANOCA'RPA (Blum. ex Schlecht. Linnæa. 1. p. 665.) leaflets oblong, acuminated at both ends, bluntish; corymbs solitary, axillary, and terminal. ♄. S. Native of Java. Glycósmis cyanocárpa, Spreng. syst. app. p. 161. Leaflets 5-7, alternate. Calyx 5-leaved. Petals 5, oval, concave, connivent. Stamens 10, awl-shaped, free, equal, compressed. Anthers cordate. Ovary girded by a tumid disk, 5-celled; cells 1-seeded. Stigma obtuse, sessile. Berry oval, dry, 1-seeded. Cotyledons obvolute.

Blue-fruited Wampee-tree. Tree 20 feet.

4 C. CHLOROSPE'RMA (Blum. l. c. p. 664.) leaflets oblong-lanceolate, obtusely acuminated; racemes compound, terminal, and axillary. ♄. S. Native of Java. Glycósmis chlorospérma, Spreng. Leaflets 5-7, alternate. Calyx 5-leaved. Petals elliptic. Stamens for the most part 9, free, awl-shaped, compressed, unequal. Anthers cordate. Ovary tumid at the base, 5-celled; cells 1-seeded. Style almost wanting, crowned by an obtuse stigma. Berry coriaceous, globose, 1-celled, 1-3-seeded. Cotyledons usually lobed. Perhaps a genus allied to *Glycósmis*.

Green-seeded Wampee-tree. Shrub 6 feet.

Cult. The species of *Coókia* thrive very well in a mixture of loam and peat; ripened cuttings, not deprived of any of their leaves, will root in a pot of sand plunged under a hand-glass, in a moist heat.

VI. MURRA'YA (in honour of John Andrew Murray, a Swedish botanist, once Professor of Medicine and Botany in the university of Gottingen, a pupil of Linnæus, and editor of some of his works, especially an edition of his Systema). Kœn. in Schreb. gen. no. 717. D. C. prod. 1. p. 536.—Marsàna, Sonn. voy. ind. 3. t. 139.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted. Corolla campanulate, 5-petalled. Stamens 10, with linear-awl-shaped filaments, and roundish anthers. Fruit baccate, fleshy, 2-celled, but usually 1-celled from abortion; cells 1-seeded. Seed pendulous, with a thick woolly covering. Auricles of cotyledons small (Mirb.). Trees with impari-pinnate leaves, and white, sweet-scented flowers. Fruit eatable.

1 M. EXO'TICA (Lin. mant. 563.) leaflets 7-9. obovate, obtuse; peduncles many-flowered, corymbose; berries roundish, usually 1-seeded. ♄. S. Native of the East Indies. Ker. bot. reg. 434.—Murr. comm. goett. 9. p. 186. t. 1. Lam. ill. t. 352. Chálcas Japonénsis, Lour. coch. 271. Marsàna buxifòlia, Sonn. itin. ind. t. 139.—Rumph. amb. 5. p. 29. t. 18. f. 2. Fruit red. Flowers white, sweet-scented.

Exotic Murraya. Fl. Aug. Sep. Clt. 1771. Shrub 10 ft.

2 M. PANICULA'TA (Jack. mal. misc. 1. no. 2. p. 31.) leaflets ovate, acuminated; flowers terminal and axillary, usually panicled; berries oblong, usually 2-seeded. ♄. S. Native of the East Indies. Hook, exot. fl. t. 79. Chàlcas paniculàta, Lour. cochin. 270.—Rumph. amb. 5. p. 26. t. 17. Flowers white, with the scent of jasmine. Fruit about the size of a small *Cápsicum*, red, with a strong scent like the gooseberry.

Panicled Murraya. Fl. July. Clt. 1823. Tree 20 feet.

3 M. LONGIFÒLIA (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 665.) leaflets 3-5, oblong, acute at the base; racemes terminal. ♄. S. Native of Java. Petals 5, linear, spreading. Anthers ovate. Ovary tumid at the base, 3-celled; cells 3-seeded. Stigma obtuse, sessile.

Long-leaved Murraya. Shrub 10 feet.

Cult. These shrubs will thrive well in a mixture of turfy loam and peat, and ripened cuttings, not deprived of any of their leaves, will root in sand under a hand-glass, in a moist heat.

VII. MICROME'LUM (from μικρος, *micros*, small, and μηλον, *melon*, apple; fruit small). Blum. bijdr. ex Schlecht. Linnæa. 1. p. 665.

Lin. syst. *Decándria, Monogýnia.* Calyx urceolate, entire, permanent. Petals 5, linear, spreading. Stamens 10, free; filaments awl-shaped, alternate ones shortest; anthers roundish, didymous. Ovary 5-celled; cells 2-seeded. Style thick, crowned by an obtuse stigma. Berry dry, with 5 papery, twisted dissepiments inside, lamellate, 1-2-seeded. Cotyledons leafy, twisted. This genus is nearly allied to *Murràya* and *Coókia*. A tree with impari-pinnate leaves and alternate oblique leaflets, and terminal corymbs of flowers.

1 M. PUBE'SCENS (Blum. l. c.) leaflets 7-9, ovate, obtusely acuminated, puberulous beneath as well as the branches and corymbs. ♄. S. Native of Java.

Pubescent Micromelum. Tree 20 feet.

Cult. To be cultivated and propagated in the same manner as that recommended for *Murràya*.

VIII. AGLAI'A (from αγλαια, *aglaia*, one of the Graces, which expresses beauty; given to this genus, which is remarkable for its beauty and the sweet scent of the flowers). Lour. coch. p. 216. D. C. prod. 1. p. 537.

Lin. syst. *Monadélphia, Pentándria.* Calyx 5-parted.

Petals 5. Stamens 5-10, with the filaments as in the *Meliàceæ*, connected into an ovate tube or attached to an urceolate nectary, with enclosed anthers. Stigma broad, sessile. Ovary 1-celled, enclosing 2 ovulæ. Berry 1-seeded (mal. misc. 1. no. 2. p. 33.) Shrubs or trees with impari-pinnate leaves and axillary panicles or racemes of yellow flowers.

1 A. odora'ta (Lour. coch. p. 173.) leaves pinnate, with 5 or 7 glossy leaflets. ♄. G. Native of Cochin-china and China. Opìlia odoràta, Spreng. syst. 1. p. 766. Cumùnium Sinénse, Rumph. amb. 5. p. 28. t. 18. The leaves have a bitter and acrimonious taste. The flowers are small, yellow, and sweet-scented, and are said to be used by the Chinese to scent their teas. Berries small, red, eatable when ripe.

Sweet-scented-flowered Aglaia. Fl. Feb. May. Clt. 1810. Shrub 6 to 10 feet.

2 A. odorati'ssima (Blum. ex Spreng. syst. app. p. 250.) leaflets usually 2 pairs, oblong, bluntish, beneath as well as the panicles clothed with very fine scales; panicles pyramidal. ♄. S. Native of Java. Flowers small, yellow, very sweet-scented.

Very sweet-scented Aglaia. Shrub 10 feet.

3 A. polysta'chia (Wall. in Roxb. fl. ind. 429.) leaflets of few pairs, oblong, lanceolate, acuminated, very smooth, oblique at the base; racemes panicled, axillary; flowers nearly sessile. ♄. S. Native of Silhet in the East Indies. Panicle composed of racemes of small, yellow, sweet-scented flowers.

Many-spiked Aglaia. Tree 40 feet.

4 A. Suli'ngi (Blum. ex Spreng. l. c.) leaflets usually 2 pairs, elliptical-oblong, bluntish, and are as well as the corymbose panicles smooth. ♄. S. Native of Java.

Suling's Aglaia. Tree.

5 A. elli'ptica (Blum. ex Spreng. l. c.) leaflets usually 2 pairs, elliptic-oblong, clothed with rusty down beneath as well as the loose elongated panicles. ♄. S. Native of Java.

Elliptical-leaved Aglaia. Shrub.

6 A. speciòsa (Blum. ex Spreng. l. c.) leaflets usually 4 pairs, oblong-lanceolate, acute, clothed with brown scales beneath as well as the panicles. ♄. S. Native of Java.

Shewy Aglaia. Tree 20 feet.

7 A. deca'ndra (Wall. in Roxb. fl. ind. 2. p. 427.) leaflets usually 6 pairs, oblong, acuminated, pubescent on both surfaces as well as the panicles, which are axillary; flowers decandrous; fruit 5-seeded. ♄. S. Native of Nipaul. Flowers yellow, small, sweet-scented.

Decandrous Aglaia. Tree 50 feet.

8 A. arge'ntea (Blum. ex Spreng. l. c.) leaflets many pairs, cordate, oblong, acuminated, covered with silvery leprosy beneath; panicles elongated, divaricating. ♄. S. Native of Java.

Silvery-leaved Aglaia. Tree 30 feet.

Cult. The species of this genus will thrive well in a mixture of turfy loam and peat, and young cuttings, which are ripened at the base, taken off at a joint, will root in sand under a hand-glass, in heat.

IX. BERGE'RA (in honour of C. J. Berger, once professor of Botany at Kiel). Kœn. in Schreb. gen. no. 718. D. C. prod. 1. p. 537.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted. Corolla 5-parted. Stamens 10, with awl-shaped, compressed filaments and roundish anthers. Style somewhat conical. Ovary 2-celled, 2-ovulate. Fruit baccate, usually 1-celled and 1-seeded. Seed appendent with a membranaceous covering. Auricles of cotyledons large (Mirb. l. c.). This genus is perhaps sufficiently distinct from *Murràya*. Trees with impari-pinnate leaves; leaflets alternate, acuminated, pubescent.

1 B. Kœni'gii (Lin. mant. 565.) leaflets serrated. ♄. S. Native of the East Indies. Lodd. bot. cab. t. 1019.—Rumph. amb. 1. p. 149. t. 53. f. 1. Murràya Kœnígii, Spreng. syst. 2. p. 315. Racemes many, forming a corymb at the top of the branches. Flowers small, whitish-yellow. Fruit the size and form of a pigeon's egg, of a yellow colour. The pulp is easily separated when ripe, and gives out a kind of white juice before it is ripe when cut or broken, which blackens the skin as the outer covering of walnuts does in Europe, but when ripe it is grateful to the palate, and is much sought after by the inhabitants. The taste resembles that of white currants. The wood is hard and durable, and is used to make many implements of husbandry.

Kœnig's Bergera. Fl. April, July. Clt. 1820. Tree 40 ft.

2 B. integrifòlia (Roxb. ex Lamb. herb. D. C. prod. 1. p. 537.) leaflets quite entire. ♄. S. Native of the East Indies. Panicle subcorymbose, terminal. Flowers whitish.

Entire-leaved Bergera. Fl. Jun. Jul. Clt. 1823. Tree.

Cult. The species of *Bergèra* will thrive well in a mixture of turfy loam and peat; and young cuttings, ripened at the bottom, taken off at a joint, will root in sand under a hand-glass, in heat.

X. CLAUCE'NA (meaning unknown). Burm. ind. p. 89. D. C. syst. 1. p. 538.

Lin. syst. *Octo-Decándria, Monogýnia.* Calyx 4-5-toothed. Petals 4-5, oval, concave, spreading. Stamens 8-10, with awl-shaped filaments, which are excavated, dilated, and conniving at their base, and ovate or roundish anthers. Ovary 4-celled; cells 1-2-seeded. Style short, cylindrical. Stigma obtuse. Fruit almost dry, 1-celled, 1-seeded from abortion. Seed appendent, with a membranaceous covering. Auricles of cotyledons large, retuse. Trees with impari-pinnate leaves, and stalked pubescent leaflets. Flowers very small, disposed in lax panicles.

1 C. excava'ta (Burm. ind. t. 29.) leaflets 13 or 15, ovate, acuminate, unequal-sided; petioles and terminal panicles puberulous. ♄. S. Native of Java. Murràya Burmánni, Spreng. syst. 3. p. 315. C. Javénsis, Ræusch. Flowers white, octandrous.

Excavated-filamented Claucena. Tree 20 feet.

2 C. pentaphy'lla (D. C. prod. 1. p. 538.) leaflets 5 or 7. ♄. S. Native of the East Indies. Limònia pentaphýlla, Lamb. herb. but not of Roxb. Flowers white.

Five-leaved Claucena. Fl. Ju. Aug. Clt. 1800. Tr. 20 ft.

Cult. These trees should be propagated and cultivated in the same manner as recommended for *Bergèra*.

XI. GLYCO'SMIS (from γλυκυς, *glycus*, sweet, and οσμη, *osme*, smell; in allusion to the sweet-scented flowers). Cor. ann. mus. 6. p. 384. D. C. prod. 1. p. 538.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted. Petals 5. Stamens 10, with flat, awl-shaped filaments and elliptical anthers. Style short, cylindrical. Ovary 5-celled; cells 1-seeded. Fruit fleshy, 1-2-celled; seed pendulous, with a membranaceous covering. Auricles of cotyledons very short (Mirb.). Trees with impari-pinnate smooth leaves. Panicles axillary and terminal.

1 G. arbòrea (D. C. prod. 1. p. 538.) leaflets 5-7, oblong-linear, alternate, toothletted. ♄. S. Native of Coromandel and the Mauritius, in woods. Limònia arbòrea, Roxb. cor. 1. t. 85. Flowers small, white, sweet-scented. Fruit reddish, and are eaten by birds. The whole plant, when drying in the shade, diffuses a pleasant permanent scent as well as the following.

Tree Glycosmis. Fl. May, Aug. Clt. 1796. Tree 20 feet.

2 G. pentaphy'lla (D. C. prod. 1. p. 538.) leaflets 5, ovate, quite entire. ♄. S. Native of Coromandel. Limònia pentaphýlla, Retz. obs. 5. p. 24? Roxb. cor. 1. t. 84. Flowers

small, white, very fragrant. Fruit red, about the size of a small cherry, and which are eaten by birds.

Five-leaved Glycosmis. Fl. Ju. Jul. Clt. 1790. Sh. 6 ft.

Cult. These trees will succeed well in a mixture of turfy loam and peat, with the addition of a little rotten dung. Ripened cuttings will root in sand under a hand-glass, in heat.

XII. FERO'NIA (Feronia, the goddess of the forests). Cor. in Lin. soc. trans. 5. p. 224. D. C. prod. 1. p. 538.

Lin. syst. *Decándria*, *Monogýnia*. Flowers usually polygamous. Calyx flat, 5-toothed. Petals 5, oblong, spreading. Stamens 10, rarely 11, with filaments which are villous, dilated, and connected at their bases, and oblong, erect, tetragonal anthers. Ovary seated on an elevated disk, crowned by an elliptic-globose sessile stigma. Berry baccate, 5-celled; cells many-seeded; seeds imbedded in spongy pulp. Trees and shrubs with impari-pinnate leaves and racemose flowers.

1 F. elepha'ntum (Corr. l. c. Roxb. cor. 2. t. 141.) leaflets 5-7, obovate, sessile, crenulated, shining; common petiole with a narrow, smooth margin. ♄. S. Native of Coromandel, in woods on the mountains. Spines simple. Leaves smooth. Panicle small, axillary, or terminal. Flowers white with reddish anthers. Fruit large, about the size of an apple with a greyish rind; the pulpy part is universally eaten on the coast of Coromandel. The wood is white, hard, and durable. There is a transparent liquor which exudes from the stem when cut or broken, which is useful for mixing with painters' colours.

Elephant Apple. Clt. 1804. Tree 30 feet.

2 F. pellu'cida (Roth. nov. spec. p. 384.) leaves full of pellucid dots; common petiole round, pubescent. ♄. S. Native of the East Indies. Flowers white. Fruit eatable.

Pellucid-dotted-leaved Elephant Apple. Tree 20 feet.

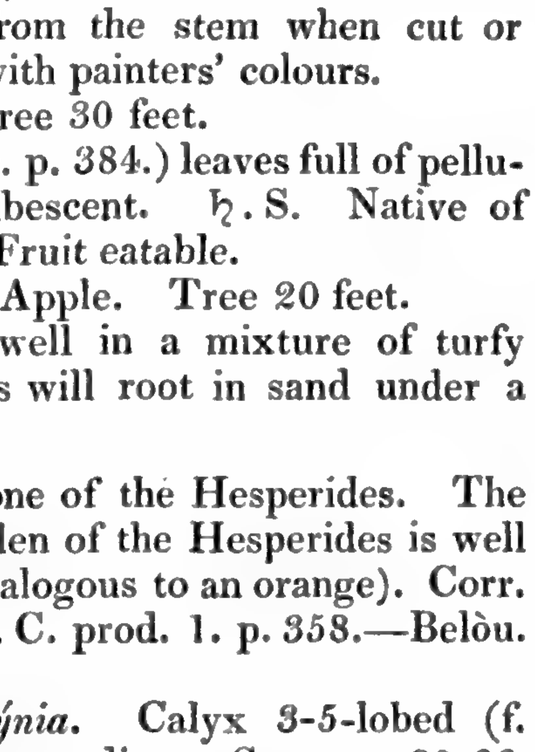
Cult. These trees will thrive well in a mixture of turfy loam and peat; and ripened cuttings will root in sand under a hand-glass, in heat.

XIII. Æ'GLE (Αιγλη, *Ægle*, one of the Hesperides. The fable of the golden apple in the garden of the Hesperides is well known. The fruit of this tree is analogous to an orange). Corr. in Lin. soc. trans. 5. p. 222. D. C. prod. 1. p. 358.—Belòu. Adans. fam. 2. p. 408.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx 3-5-lobed (f. 101. *a*.). Petals 3-5 (f. 101. *b*.), spreading. Stamens 30-36, unconnected, with long, linear, mucronate anthers (f. 101. *c*.) Stigma almost sessile. Fruit baccate, at length woody, turbinately globose, many-celled (f. 101. *d*.); cells many-seeded. Seeds imbedded in fleshy mucous pulp. Auricles of cotyledons very short (Mirb.). Shrubs with simple and double spines and trifoliate leaves; leaflets toothletted.

1 Æ. Ma'rmelos (Corr. l. c. Roxb. corom. 2. t. 143.) middle leaflet stalked; fruit 15-celled. ♄. S. Native of the mountainous parts of Coromandel and elsewhere in the East Indies. Cratæ'va Marmèlos, Lin. spec. 637. The fruit is much larger than that of *Feronia elephántum*, and is very delicious to the taste; and exquisitely fragrant. It is not only nutritious, but possesses an aperient quality which is particularly serviceable in habitual costiveness; it contains a large quantity of exceedingly tenacious transparent gluten, which may be drawn out, when fresh, into fine threads 2 or 3 yards in length. From the rind the Dutch in Ceylon prepare a perfume. The flowers are disposed in axillary and terminal panicles; they are white, and very fragrant.

FIG. 101.



Marmelos Bengal Quince. Clt. 1759. Shrub 10 ft.

2 Æ. sepia'ria (D. C. prod. 1. p. 538.) leaflets obovate-oblong, obtuse, sessile; lateral ones smallest; fruct 7-celled. ♄. S. Native of Japan. Citrus trifoliàta, Lin. spec. 1101.—Ssi. Kæmpf. amœn. 801. t. 802. Flowers axillary, solitary, white. Pulp of fruit glutinous, ungrateful to the taste, but possessing a laxative aperient quality. This shrub forms strong hedges in Japan, from its long, stiff, sharp thorns.

Hedge Bengal Quince. Shrub 8 feet.

Cult. These shrubs thrive best in a rich loamy soil; ripe cuttings, not deprived of any of their leaves, will root in sand under a hand-glass, in heat.

XIV. CI'TRUS (it is supposed that this genus has derived its name from the town of Citron in Judea, but it is very doubtful.) Lin. gen. no. 1218. D. C. prod. 1. p. 539.

Lin. syst. *Polyadélphia*, *Polyándria*, or *Polyándria*. *Monogýnia*. Calyx urceolate, 3-5-cleft. Petals 5-8. Stamens 20-60, with compressed filaments, which are more or less connected together at the base into many bundles, or free. Anthers oblong. Style cylindrical, crowned by a hemispherical stigma. Fruit baccate, 7-12-celled; cells many-seeded, full of pulp, spermaderm, membranous. Auricles of cotyledons very short. Evergreens, trees, or shrubs, with axillary spines and simple leaves, with their petioles usually winged. Flowers white and exquisitely fragrant but heavy. Fruit with a yellow rind, and soft, usually delicious pulp. This genus contains the orange, lemon, lime, and shaddock. *Citrus* is the most striking of fruit-bearing trees, and must have attracted the notice of aboriginal man long before other fruits of less beauty but of more nutriment or flavour. The golden apples of the heathens and the forbidden fruit of the Jews are supposed to allude to this genus, though it is remarkable that we have no authentic records of any species of *Citrus* having been known; certainly none were cultivated by the Romans.

Dr. Sickler, who spent 6 years in Italy, and paid great attention to the kinds and culture of the *Citrus* tribe, published at Weimer in 1815, a quarto volume called *Vollkommene Orangerie-Gartner*, in which he describes 74 sorts. He arranges the whole into 2 classes, and these classes into divisions and subdivisions, without regard to their botanical distinctions or species, as follows:

Lemons.	Cedrates or Citrons		4 sorts.
	Lemons.	Round Lemons	6 do.
		Pear-shaped do.	11 do.
		Cylindrical do.	4 do.
		Gourd-shaped do.	2 do.
		Wax do.	5 do.
		Lumies	8 do.
	Cedrate Lemons or Citronates		6 do.
	Limes		4 do.
Oranges.	Bitter Oranges		6 do.
	Sour Oranges		6 do.
	Sweet Oranges		12 do.

A short delineation of Dr. Sickler's treatise by Dr. Nochden will be found in Hort. trans. vol. 3. append., which is perhaps of more use for the Italian names of the varieties than for any other information it contains.

In the districts towards the sea-coast in the south and south-west of Italy, especially about Sorento and Amalfii, you meet not only with groves of Orange and Lemon trees, but almost with forests.

1 C. Me'dica (Risso, ann. mus. 20. p. 199. t. 2. f. 2.) branches spiny; petioles naked; leaves oblong, obtuse; flowers with 35-40

stamens, often without a style; fruit oblong, wrinkled, with a thick rind, and acid pulp. ♄. G. Native of Asia, but has been cultivated from time immemorial in middle and south Europe, and now cultivated almost throughout the world.—Ferr. hesper. t. 59, 60-63. C. Mèdica Cèdra, Gall. citr. p. 87. var. 1, 2-5-7. —Rumph. amb. 2. t. 25 and 26. f. 2. Blackw. herb. t. 361. Young branches violet-coloured. Rind wrinkled, adhering to the pulp, possessing a sweet odour. Petals purplish on the outside. Pedicels axillary, solitary, 1-flowered. The specific name *Mèdica* is said to be derived from Media, where it is said to have originally come from. This was the opinion of the Romans. The tree was cultivated in Italy before Virgil and Pliny. The wood was formerly used in making furniture by the Romans, as the Acasia is at this day. The fruit is often half a foot in length, ovate, with a protuberance at the tip; usually 9-celled; the pulp is white, and commonly acid; the rind yellow, thick, hardish, odoriferous, irregular; it is esculent, both raw and preserved. Properly there are two rinds; the outer thin, with innumerable miliary glands, full of the most fragrant oil; the inner thick, white, and fungous; the partitions consist of two very thin diaphanous, membranaceous plates, connected at the axis, and inserted into the rind at the perephery; the cells are filled with a bladdery pulp. In each cell are a few seeds, commonly 1 or 2, sometimes 3 or 4.

Risso gives the following description of this species:

Branches spiny. Pedicels bear about 10-flowers, disposed in a corymb, the greater part of them sterile. The calyx is 5-toothed, covered on the outside with protuberances, and streaked with a few reddish nerves. The flowers are large, purple without and white within, usually of 5 petals, which are oval-oblong, with 40 or 50 stamens, with flat unequal filaments, and yellow anthers. Pistil permanent, caducous, or wanting. The fruit is large and oblong, covered with protuberances, which are red when young, but of fine yellow colour when ripe; the rind is spongy and thick, with a sweet odour, adhering closely to the pulp, which is sparing and acid. Seeds oblong, with a reddish pellicle. It is called *Cedrat* (Fr.), *Cedrot* (Ital.), *Sedrou* (Nice), *Citron* (Eng.), *Cedreiro* (Brazil).

The fruit of the *Citron* is seldom eaten raw, but is generally preserved and made into confections, which being kept till winter and spring, when there is a scarcity to furnish out the desert, is the more valuable; but unless the season be warm, and the trees well managed, the fruit rarely ripens in England. The finest fruit that ever was produced in England, was in the garden of his Grace the late Duke of Argyle, at Whitten, where the trees were trained against a south wall, through which there were flues for warming the air in winter, and glass covers to put over them when the weather began to be cold. Thus the fruit was as large as it is in Italy or Spain.

The *Citron* is a native of the warm regions of Asia. Being introduced into Europe from Media, it had the name of *Malus Medica*. It seems to have come into Italy after the age of Virgil and Pliny, but before that of Palladius (Lin.), who appears first to have cultivated it with any success there (Virg. 136. qu. ed.) According to Haller, the Median apple described by Theophrastus is certainly a sort of orange (Bibl. bot. 32.), which fruit, according to Athenæus, first travelled into Greece from Persia (Evelyn), and in time became known to the Greeks, and about the same time it began also to be cultivated in Judea. If the Median apple be the orange, the *tristes succi* of Virgil, and the *acres medullæ* of Palladius, it must have been much corrected by culture; the latter author, Theophrastus, and Pliny, all speak of it as not eatable, though they celebrate its medicinal qualities far above its desert.

It has been conjectured by many commentators, from the circumstance of Jews at the present day carrying *Citrons* to the Feast of the Tabernacles, that it was the fruit ("Hadar") spoken of in the 23d chap. 4th ver. of the Book of Leviticus. In old Samaritan coins *Citrons* may be observed attached to the palm on one side. Josephus mentions a custom of great antiquity. Thus on one occasion, when Alexander the king and the high priest stood at the altar, the people revolted, and threw at him the *Citrons* they bore in their hands. It is, however, probable, that no particular fruit was alluded to, and it was not until the days of Solomon that *Citrons* became known.

There are 3 varieties of the *Citron* enumerated by Risso in ann. du. mus. 20. p. 199 and 200. which are as follows:

1 *Large Citron* (Engl.), *Gros Sedrou* (Nice), *Cedrat a gros fruit* (Fr.), *Cedrone* (Ital.). *Citrus Médica frúctu máximo* (Risso). Fruit large, wrinkled, copper-coloured, with a very thick rind and acid pulp. Volc. p. 119. Gal. p. 98. no. 2. The principal difference which separates this variety from the species is the great size of its fruit. The leaves are oval-oblong and thick, of a glaucous green-colour. The flowers are large, white, and numerous; the stamens are much longer than the pistil. The fruit is large, with a thick rind, adhering closely to the pulp, which is a little acid.

2 *Monstrous Citron* (Engl.), *Cedro monstruoso* (Ital.), *Sedrou* (Nice), *Cedrat monstrueux* (Fr.), *Citrus Médica tuberòsa* (Risso). Fruit monstrous, mucronated, yellow, with acid pulp. Ferr. hesp. 357. Volc. p. 162. Gal. p. 100. no. 5. From the tubercles and teats, which ordinarily cover the fruit, the name is derived. The leaves are large, usually curled, and of a dark-green colour, placed on short petioles. The flowers are disposed in a corymb. The fruit is roundish oval, of a dark-yellow colour, usually terminating in a short point at the apex; the rind is thick, and is covered with large tubercles, which even penetrate to the middle of the pulp, which is acid, and does not contain any seeds.

3 *Florence Citron* (Engl.), *Cedratello di Firenze* (Ital.), *Cedrat de Florence* (Fr), *Citrus Médica Florentìna* (Risso). Fruit small, ovate, acuminated, very sweet-scented, with a thick yellow rind and acid pulp. Volc. p. 133. Desf. p. 138. Gal. p. 103. no. 7. This variety is a very pretty tree. The branches are spiny and green. The leaves are oval-oblong, toothed, and pointed, of a glaucous-green colour. The flowers are disposed in a tuft at the summits of the branches. The calyx is 5-toothed. The corolla is composed of 5 or 8 petals, which are tinted with violet on the outside. Stamens from 30 to 36, with twisted filaments, which are as long as the pistil. The fruit is ovate, gradually tapering to the apex into a point; the rind is thick, of a clear yellow colour, with a sweet scent, and covered with a few tubercles; the pulp is divided into 8-cells, and is truly acid.

The Portuguese had many of the most curious sorts of *Lemons* and *Citrons*, brought from the Indies formerly, which seemed to thrive almost as well there as in their native soil, and yet they have not been increased. There are a few trees still remaining in some neglected gardens near Lisbon, almost unnoticed by the inhabitants (Martyn). The *Lemon* was first cultivated in Britain in the botanic garden at Oxford in 1648. (Hort. kew).

The useful parts of the *Lemon* and *Citron* are the juice and the outward rind of the fruit, and the volatile oil of the outer rind. The juice of *Lemons* is analogous to that of the Orange, from which it only differs in containing more citric acid, and less syrup. The quantity of the former is indeed so great that the acid has been named from the fruit, *acid of Lemons*, and is always prepared from it. The simple expressed juice will not keep on account of the syrup, extractive mucilage, and water, which cause it to ferment. The yellow peel is an elegant aromatic, and is frequently employed in stomachic tinctures and infusions; and yields by expression or distillation with water an essential oil, which is much used in perfumery. Fresh Lemon-

juice is truly specific in the prevention and cure of scurvy; that is, its effects are certain, and cannot be explained, for the crystalized acid, and even the rob or inspissated syrup, do not produce the same salutary effects. It is given freely mixed with water and sugar, and in a short time the symptoms disappear. The juice is also a powerful and agreeable antiseptic. Its powers are much increased, according to Dr. Wright, by saturating it with muriate of soda. This mixture he recommends as possessing very great efficacy in dissentery, remittent fevers, the belly-ache, putrid sore-throat, and as being perfectly specific in diabetes and lienteria. Citric-acid is often used with great success for allaying vomiting; with this intention it is mixed with carbonate of potass, from which it expels the carbonic acid with effervescence. This mixture should be drank as soon as it is made, or the carbonic acid gas, on which its anti-emetic power chiefly depends, may be extricated in the stomach itself, by first swallowing the carbonate of potass dissolved in water, and drinking immediately afterwards the acid properly sweetened. The doses are about a scruple of the carbonate dissolved in 8 or 10 drachms of water, and an ounce of Lemon-juice, or an equivalent quantity of Citric-acid. Lemon-juice, as well as Lime-juice, is also an ingredient in many pleasant refrigerent drinks, which are of very great use in allaying febrile heat and thirst. Of these the most generally useful is Lemonade, or diluted Lemon, or Lime-juice sweetened. (Duncan, edinb. disp. p. 309.)

Median Apple or Citron. Fl. May, July. Clt. 1648. Tree 8 to 15 feet.

2 C. Limétta (Risso, ann. mus. 20. p. 195. t. 2. f. 1.) petioles subalate; leaves ovate-roundish, serrated; flowers with 30 stamens; fruit globose, with a blunt nipple-like protuberance at the apex, a firm rind, and sweet pulp. ♄. G. Native of Asia, but cultivated in Italy. C. Médica Limon, Gal. citr. no. 10, 25-38. Ferr. hesp. t. 230. 395. 233. 321. Corolla white on both sides. This is commonly called *Sweet Lime or Lemon*, *Bergamotte*, *Limeta*, *Peretta*, *Lima dolce*, *Lime douce*, *Limo dúlcis*, *Limétta Bergamótta*. A rather tall tree, with diverging branches. The corolla is of a fine white colour, and composed of 5 oblong petals, which are rounded at the apex, covered with small pores full of essential aromatic oil.

There are also 7 varieties of this enumerated by Risso, which are as follows:

1 *Small-fruited Sweet Lime* (Engl.). *Lemettier petit fruit. Petit Lime douce* (Fr.), *Lima dolce piccola* (Ital.), *Limeta picouna* (Nice), *Citrus Limétta fructu pumilo* (Risso). Fruit small, somewhat depressed, crowned, of a yellow-greenish colour, with a very smooth rind and sweet pulp. This variety is cultivated in the gardens. It differs from the species to which it is analogous, in the tree being lower in stature, and in the leaves being more toothletted on the edges.

2 *Lemon-formed Sweet Lime* (Engl.) *Limettier limoniforme* (Fr.), *Limoun douce* (Nice), *Lima dolce* (Ital.), *Citrus Limétta limoniforme* (Risso). Fruit roundish-oblong, copper-coloured, with a very sweet pulp. Ferr. l. 3. cx. p. 227. t. 230. Volc. p. 159 and 160. This fine and rare variety has been confounded with the common *Sweet Lime*. From which it differs not only in the flowers and leaves, but in the form of the fruit, as well as in its juice and seeds. It is a much larger tree than the preceding variety. The calyx is reddish, and the corolla is of a beautiful white, bearing from 30 to 45 unequal stamens. The fruit is oblong-roundish, terminated by 2 protuberances, with a long navel-like protuberance, and the rind is of a dark yellowish-saffron colour. The rind is insipid. The pulp has a taste as sweet as sugar, and is very agreeable. The seeds are oblong, pointed at one end, but blunt at the other. The tree is very rare in the gardens.

3 *Starry Sour Orange* (Engl.), *Limettier a fruit étoilé. Mella Rose* (Fr.), *Melarosa* (Ital.), *Melarosa* (Nice), *Citrus Limétta fructu, stellato* (Risso). Fruit subrotund, depressed, striated, crowned, containing acid pulp. Ferr. hesp. p. 393. t. 395. Volc. p. 190, 191. Gal. p. 141. no. 38. This tree is of ordinary size. The calyx is short. The corolla is small and white, with 30 unequal stamens, which sometimes change into lanceolate petals. The fruit is round, of a yellow colour, crowned by a small, blunt, nipple-like protuberance; the rind is thin, adhering closely to the pulp. The seeds are oval and striped.

4 *Bergamote Lime* (Engl.), *Lemettier Bergamote*, *Bergamote* (Fr.), *Bergamota* (Nice), *Bergamoto* (Ital.), *Citrus Limétta Bergàmium* (Risso). Leaves ovate, acute, toothed; fruit golden, quite smooth, with an acid and bitter pulp. Volc. p. 155 and 156. Desf. p. 138. Gal. p. 118. no. 25. The branches are spiny. The leaves are large, on long petioles. The flowers are white, and have a particular scent, composed of 4 or 5 petals, with about 26 stamens. The fruit is large and spherical, of the form of a pear, terminated by a small nipple-like protuberance; the rind is thin, of a golden-yellow colour, enclosing an acid and equally bitter pulp. The seeds are oblong.

5 *Pear Lemon* (Engl.), *Limettier Perette* (Fr.), *Peretta* (Ital.), *Pereta* (Nice), *Citrus Limétta Perétta* (Risso). Fruit ovate, ribbed lengthwise, very sweet-scented, with an acid pulp. Ferr. hesp. p. 231. t. 233. This variety is easily distinguished by the fruit being in the form of a pear. The branches are straight, and furnished with spines. The leaves are oval and rounded, and finely toothletted, on long stalks. The flowers are purplish on the outside, containing about 35 stamens. The fruit is of a fine yellow colour, and is traversed longitudinally with stripes, which are not very apparent, and terminated by a small, sharp, nipple-like protuberance, of an agreeable odour; the rind is thick, and the pulp is acid.

6 *Adam Apple* (Engl.), *Limettier pomme d'Adam*, *Pomme d'Adam* (Fr.), *Pomo d'Adamo* (Ital.), *Citrus Limétta pomum Adami* (Risso, l. c.) Leaves ovate-oblong, curled; petioles winged; fruit very large, round, of a greenish-colour, with a sweet pulp. Ferr. hesp. p. 317. t. 321. Volc. p. 181, 182. Desf. p. 138. Gal. p. 138. This variety will form a distinct species at some future day. The branches are furnished with very small spines, and are traversed longitudinally with white stripes. The leaves are oval-oblong, waved at the margins, of a dark-green colour, with broad winged petioles. The flowers are white, and contain about 40 stamens. Fruit with a thick rind and sweet but equally bitter and acid pulp. The varieties of this kind are called *Lumies*.

7 *Rose Sweet Lime* (Engl.), *Limettier Pomme rose* (Fr.), *Mello rosa* (Ital.), *Poum roso* (Nice), *Citrus Limétta pomum rosæ* (Risso). Fruit roundish-oblong, usually pear-shaped, rough, of a pale-copper colour, very sweet-scented, with an acid pulp. Ferr. hesp. 231. t. 233. The branches of this variety are brittle and spiny. The leaves are oval, toothletted, on long petioles, of a dark-green colour. The flowers are few in number, white, of 5 oblong petals, and about 30 stamens. The fruit is roundish-oblong, but often pear-shaped, of a saffron-yellow colour; the rind is thick, hard, and of a very agreeable smell; the pulp is divided into 10 cells, which contain acid juice. The seeds are less numerous than in the other varieties.

8 *Limeira embiguda* of Brazil. The fruit is large and globular, and terminated by a large protuberance. The rind is thin and the flesh very sweet. They cultivate at Bahia a second variety of this orange under the name of *Limeira de Persia*; it has a very large fruit, and is also terminated by a point; the inside of the rind is bitter, and outside smooth. The pulp is very sweet.

Sweet *Lime* and Lumy Fl. May, July. Clt. 1648. Tree 8 to 15 feet.

3 C. Java'nicum (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 667.) petioles winged; leaves oval, very blunt, unequally crenulated; flowers with 22 stamens; fruit oblong, with an obtuse point, with a thick rind and bitter pulp. ♄. S. Native of Java. Allied to *C. Limétta*.

Java Lemon. Tree 20 feet.

4 C. Limònum (Risso, ann. mus. 20. p. 201.) petioles somewhat winged; leaves oval-oblong, crenulated; flowers with 25-35 stamens, but usually without styles; fruit oblong, with a very thin rind, and very acid pulp. ♄. G. Native of Asia, but cultivated in the south of Europe, and most parts of the world within the tropics. Cìtrus Médica Limon, Gal. cit. 105. exclusive of the varieties under no. 2.—Ferr. hesp. t. 247, 211, 253, 223, 229, 293, 255, 265, 105, 225, 207, 243, 219, 301, 307, 215. C. Lìmon, Lin. Mill. Petals purplish on the outside. Branches violet. Racemes axillary. Fruit ovate, with a yellow rind, adhering to the pulp. It is commonly called *Citron* (Ital.), *Limone* (Fr.).

The most remarkable varieties in the English gardens are,

1 Common Lemon. 2 Pear-shaped Lemon. Fruit small, with very little juice. 3 Imperial Lemon. The fruit of this variety is sometimes imported from Italy, but not from Spain or Portugal. 4 Furrowed Lemon. 5 Childing Lemon. 6 Double-flowered Lemon. 7 Broad-leaved Lemon. 8 Chinese Lemon. 9 Rough-fruited Lemon. 10 Smooth-leaved Lemon. 11 Gold and Silver-striped Lemon. 12 Upright Lemon. 13 Warted-fruited Lemon. 14 St. Helena Lemon. Browne mentions this variety as having been introduced into Jamaica, and much cultivated there, on account of its large fruit, which frequently yields about a pint of juice. 15 Fingered Lemon. In China and other parts of the East, they have a remarkable variety of *Lemon* or *Citron*, which has a solid fruit, without any cells or pulp, and divided above the middle into 5 or more long round parts, a little crooked, and having the appearance of the human hand, with the fingers a little bent, whence the Chinese call it *Phat thu*, or Fingered Lemon.

Risso gives the following description of the species: The stem is straight, and much branched, hairy and spiny, covered with a clear grey bark; the branchlets are violet. The leaves are petioled, oblong, acuminated, and toothed, of a yellowish-green colour, beset with small transparent points. The petioles are long, with a leafy border, which is lengthened out even to the base. The calyx is permanent and quinquefid, of a violet colour, seated upon a long pedicel. The corolla is of 5 petals, which are of a reddish-purple on the outside, but white on the inside, with a heavy penetrating odour. The stamens are unconnected, long, and about 36 in number, with yellow anthers. The pistil is reddish. The fruit is small, egg-shaped, of a saffron-yellow colour, terminated by a nipple-like protuberance; the rind is thin, but compact, adhering closely to the pulp, which is divided into 10 cells, containing very acid juice. The seeds are oblong and yellowish.

* *Fruit egg-shaped, terminated by a small blunt nipple-like point.*

1 *Thin-rinded Lemon* (Engl.), *Limonier a écorce fine* (Fr.), *Limone lustrato* (Ital.), *Limoun scorso fino* (Nice), *Cìtrus Limònum cortice tenui* (Risso, l. c.) Fruit ovate, very smooth, with a thin rind and very acid pulp. Tour. inst. p. 321. Gal. p. 111. no. 9. The difference which separates this variety from the species is its being less branched, and these destitute of spines, and in the leaves being more oval, toothed, larger towards the summit, and diminishing gradually towards the base, as well as in the flowers being more numerous, and the petals being larger. Fruit roundish, egg-shaped, very smooth and shiny, of a beautiful greenish-yellow colour; the rind is very thin and sweet-scented; the pulp is very considerable, full of an agreeable acid juice. Seeds small, but often wanting.

2 *Naples* or *Common Lime* (Engl.), *Limonier de Calabre* (Fr.), *Limoncello di Napoli* (Ital.), *Limouncello* (Nice). Lìma, Macf. in Hook, bot. misc. pt. 3. p. 300. Flowers very white; fruit small, globose, with a thin sweet-scented rind and acid pulp. Ferr. hesp. p. 209. t. 211. Volc. p. 144. Gal. p. 120. no. 16. This is a beautiful variety, with spiny elongated branches, younger branches of a greenish-red. Leaves oval-roundish, on short petioles. Flowers of 5 or 6 oblong, pointed petals, with about 25 stamens. Fruit small, round, of a pale-yellow colour, with a thin but firm aromatic rind and acid pulp, usually without seeds.

3 *Streaked Lemon* (Engl.), *Limonier canellè* (Fr.), *Limone incanellato* (Ital.), *Limoun raiat* (Nice), *Cìtrus Limònum striàtum* (Risso). Fruit ovate, channelled, with a thick rind and acid pulp. Ferr. hesp. p. 245. t. 247. Volc. no. 9. In spite of the opinions of many authors that the varieties of *Limes* do not retain their characters for any length of time, this variety, according to Risso, has retained its character since the time of Ferrari without any change, in spite of the difference of climate and soil to which it has been transplanted. Tree branched; branches brittle, beset with small points. Leaves oval-roundish, toothletted, of a pale-green colour. Flowers solitary, composed of 4 petals. Fruit striped lengthwise, and terminated by a small nipple-like process, with the rind rather thick; the pulp is divided into 9 or 10 cells, full of an acid juice. Seeds not very numerous.

4 *Sbardonius's Lemon* or *Round Lime* (Engl.), *Limonier de Sbardonius* (Fr.), *Limone Sbardonio* (Ital.), *Limoun rount* (Nice), *Cìtrus Limònum Sbardònii* (Risso). Leaves oblong, acute, wrinkled; fruit ovate-roundish, wrinkled, with an acid pulp. Ferr. hesp. p. 251. t. 253. This variety is named in honour of the director of the botanic garden at Rome by the celebrated Ferrari. Principal branches grey. Leaves oblong, thin, toothed, pointed, of a dark-green colour, on rough petioles. Flowers of 4 large petals and 4 small ones, white inside, but reddish on the outside, with about 50 stamens. Fruit roundish-oval, rough, of a fine clear yellow colour, and furnished with tubercles towards the peduncle, and terminated by a nipple-like protuberance, which is crowned by the usually permanent style; the rind is rather thick; the pulp is divided into 10 or 12 cells, full of an acid juice. Seeds roundish-oval.

5 *Incomparable Lemon* (Engl.), *Limonier incomparable* (Fr.), *Limone incomparabile* (Ital.), *Limoun gros* (Nice), *Cìtrus Limònum incomparàbile* (Risso). Fruit large, roundish-ovate, with a thin, very smooth rind and acid pulp. Ferr. hesp. p. 221. t. 223. In spite of the distinctive characters which Ferrari had given to this variety, the name has fallen into oblivion. Branches reddish. Leaves oblong, pointed, large, on long petioles. Flowers usually 2 to 4 upon the same pedicel, with a rough calyx, small petals, and about 30 very long stamens. Fruit roundish-oval, very large, of a clear yellow colour, terminated by a small, blunt, nipple-like protuberance; the rind is rather thick; the pulp is very considerable, divided into 10 cells, full of an acid juice. Seeds oblong.

6 *Small-fruited Lime* (Engl.), *Limonier a petit fruit* (Fr.), *Limone picollo* (Ital.), *Limoun gallo* (Nice), *Cìtrus Limònum fructu pusillo* (Risso). Ferr. hesp. p. 209. t. 211. The name that has been given to this variety is sufficient to distinguish it from all others. Branches a little spiny. Leaves small, oblong, pointed, on long petioles. Flowers usually scattered, with small petals, which are purplish on the outside, but white on the inside. Fruit round, very small, of a greenish-yellow colour; the rind is rather thick; the pulp is divided into 9 cells, full of rather acid pulp.

7 *Caly Lime* (Engl.), *Limonier Caly* (Fr.), *Limone cerceli* (Ital.), *Limoun Cali* (Nice), *Cìtrus Limònum Caly* (Risso). This

variety resembles the preceding, and the *Calabrian Lime*, but is easily distinguished from both by its greater size, and the branches only being furnished with a few very short spines, by the leaves being oval, on twisted petioles, yellowish, by the flowers being of 5 petals, reddish on the outside, and by the fruit being larger, perfectly round, and very smooth, of a beautiful yellow colour, terminated by a small nipple-like protuberance, with a thin rind, and the pulp is divided into 9 cells, which are full of an acid juice. Seeds egg-shaped. This variety is also distinguished from the *Pusilla-pila* of Ferr. hesp. t. 201. by the spines being shorter, the leaves more pointed, the fruit larger, with a thinner rind, and from the *Barbadorus* of Ferr. hesp. t. 259. by the leaves being shorter, the branches more spiny, and the fruit smaller.

8 *Sweet Lemon* (Engl.), *Limonier a fruit doux* (Fr.), *Limone a frutto dolce* (Ital.), *Limoun san Bartolomea* (Nice), *Limueiro doce* (Braz.), *Cìtrus Limònum pulpa dulci* (Risso). Ferr. hesp. p. 227. t. 229. Fruit ovate-oblong, with an incurved point and sweet pulp. This variety is not to be confounded with the *Lemon-shaped Sweet Lime*, nor with the *Lemon-shaped Orange*. It presents a different appearance to both. Leaves oblong, pointed, rather deeply toothletted towards the summit, but entire towards the petiole, which is very long. Flowers of a beautiful white colour, slightly tinged with red on the outside, very odoriferous. Fruit oval-oblong, smooth, terminated by a long nipple-like point, which is sometimes curved; the rind is very thin, of a beautiful yellow colour; the pulp is divided into 8 cells, full of a sweet juice. Seeds oblong.

9 *Poncine Lemon* (Engl.), *Limone Ponzino* (Ital.), *Limonier Poncine* (Fr.), *Limoun Pounsino* (Nice), *Cìtrus Limònum Pouzìnum* (Risso). Fruit large, globose, with an incurved point and acid pulp, without seeds. The Poncine is cultivated in some gardens in the south of Europe, and makes a very fine vigorous tree, full of spurs. Leaves oval-oblong, pointed, on short petioles. Flowers usually collected together at the summit of the branches. Fruit very large, terminated by a small, curved, nipple-like protuberance, of a beautiful yellow colour, at maturity, traversed lengthwise by lines, which are a little elevated, which renders it somewhat rugged; the rind is very thick; the pulp is divided into 11 cells, full of an acid juice, without seeds. This variety is only cultivated for curiosity.

10 *Rosoli Lemon* (Engl.), *Limonier Rosolin* (Fr.), *Limone Rosolino* (Ital.), *Limoun san Gerorme* (Nice), *Cìtrus Limònum Rosolìnum* (Risso). Ferr. hesp. p. 251. t. 255. Leaves large, elongated, thick, slightly toothletted, on long winged petioles. Flowers collected together in bunches. Fruit very large, round, a little oblong, traversed lengthwise by warted stripes, of a deep-yellow colour, mixed with green, terminated by a nipple-like point, which is usually curved, with a very thick tender rind, of an insipid taste, adhering firmly to the pulp, which is very inconsiderable, considering the size of the fruit, full of feeble acid juice.

11 *Small Cedrate Lemon* (Engl.), *Limonier petit Cedrat* (Fr.), *Limone Cedrino* (Ital.), *Limoun Sedrin* (Nice), *Limueiro Francez* (Braz.), *Cìtrus Limònum Citràtum pumilum* (Risso). Fruit ovate, smooth, shining, with a pulp containing little acid. Tree small. Leaves small, green on one side, but yellowish on the other. Flowers ordinarily grow in pairs, violet on the outside, with a 4-cleft calyx, and the stamens are usually shorter than the pistil. Fruit egg-shaped, covered with sunk points, of a shining-yellow colour, terminated by a small, blunt, nipple-like protuberance, containing a faint tasted, rather acid pulp.

12 *Bignette Lime* (Engl.), *Limonier Bignette* (Fr.), *Limone Bignetta* (Ital.), *Bignetta comuna* (Nice), *Cìtrus Limònum Bignétta* (Risso). Fruit ovate, smooth, of a greenish-yellow colour, blunt at the apex, with an acid pulp. There is a variety of this sort, which is used in sauces, and to make lemonade, in Brazil under the name of *limueiro azedo*. The fruit is very small, and resembles a *citron* in form; the rind is smooth and green.

13 *Large-fruited Bignette Lemon* (Engl.), *Bignette a gros fruit* (Fr.), *Bignetta grossa* (Ital.), *Bignetta* (Nice), *Cìtrus Limònum Bignétta fructu maximo* (Risso). Fruit large, ovate, shining, pale-yellow, with acid pulp. This tree is also known under the name of *Bignette*, but it should not be confounded with the preceding variety; it is a much more majestic tree. The leaves are more developed, roundish-oval, toothletted, of a beautiful shining green, mixed or spotted with yellow, traversed by large nerves beneath; the flowers are larger, and slightly tinged with purple, with the stamens united at the base by twos or threes, for the most part sterile; the fruit is egg-shaped, smooth, and shining, without any nipple-like process, of a pale greenish-yellow colour, two or three times larger than the common *Bignette*, and less abundant in juice. The culture of this tree is almost abandoned, on account of the fruit which seldom comes to maturity.

14 *Cedrate Lemon* (Engl.), *Limonier Cedrin* (Fr.), *Limone Cedrino* (Ital.), *Limoun Sedrou* (Nice), *Cìtrus Limònum Citràtum* (Risso). Fruit round, smooth, with a long acute point. Ferr. hesp. p. 266. t. 263. The characters which separate this from all the other varieties are its long pale-green leaves, which are deeply toothletted, and traversed by small, hardly apparent nerves, and the large flowers composed of 3 or 4 petals, which are coloured with red on the outside, and are borne on long slender peduncles, as well as in the fruit being large, of a very shining greenish-yellow colour, terminated by a very long nipple-like point, with a thick rind and slightly acid pulp, without seeds.

* * *Fruit oblong, terminated by a large nipple-like point,*

15 *Wax Lemon* (Engl.). *Limonier Ceriesc* (Fr.). *Limone seriesco* (Ital.). *Limoun seriesc* (Nice). *Cìtrus Limònum ceriéscum* (Risso). Fruit ovate-oblong with a thick rind and grateful acid pulp. Tourn. inst. p. 621. Volc. p. 163. and 164. Desf. tab. de l'eco. de bot. p. 138. Gall. p. 110. no. 8. Of all the varieties this is the most generally cultivated, next to the common *Bignette*, on account of the abundance of fruit which it produces every year. It is a vigorous tree, with large oblong-pointed leaves; the flowers are situated on long peduncles; the calyx is coloured like the petals. The fruit is variable in form, but generally oval-oblong, terminated by a point, with a thicker rind than that of the common *Bignette*, containing abundance of acid juice.

16 *Gaeta Lemon* (Engl.). *Limònier de Gaete* (Fr.). *Limone di Gaeta* (Ital.). *Limoun Gaetan* (Nice). *Cìtrus Limònum Gaietànum* (Risso). Fruit oval, oblong, with a thick, eatable, wrinkled rind. Ferr. hesp. p. 233. t. 105. This tree, which bears beautiful fruit, differs essentially from all the other varieties. The leaves resemble those of the *Laurel of Apollo*, oblong, finely toothletted, acuminated. The branches are furnished with spines. The flowers are large and situated along the branches, composed of 9 linear, reflexed petals, sweet-scented, and of a purplish colour, with about 42 stamens, which are longer than the pistil. The fruit is long, oval-oblong, terminated by a large, blunt, nipple-like protuberance, with a thick sweet rind, and the pulp divided into 10 cells, full of an acid juice, and containing a very few small seeds.

17 *Imperial Lemon* (Engl.). *Limonier Imperial* (Fr.). *Limone Imperiàle* (Ital.). *Limoun gros* (Nice). *Cìtrus Limònum Imperiàle* (Risso.). Fruit roundish-oblong, wrinkled, with a thick rind and rather acid pulp. Ferr. hesp. p. 221. t. 225.

The branches of this tree are thick and are furnished with spines. The leaves are large, oval-oblong, pointed or blunt, on short petioles. The flowers are composed of from 6-9 reflexed petals, with about 40 unequal stamens, which are usually about the length of the pistil. The fruit is oblong-roundish, terminated by a long navel-like protuberance, with a very thick, wrinkled, clear yellow rind; the pulp is divided into 10 cells, full of an acid juice, containing a few seeds.

18 *Long-fruited Lime* (Engl.). *Limonier a fruit allongé* (Fr.). *Limone lungo* (Ital.). *Limoun nazellou* (Nice). *Cìtrus Limònum elongàtum* (Risso). Fruit elongated, yellow, with a curved point and acid pulp. This is a beautiful variety, and is easily distinguished from the others by its tall straight branches, and by its large elliptical leaves, which are of a gay green colour, placed on thin petioles, which are a little twisted at the base. The flowers are composed of 5 purplish petals, with about 30 stamens. The fru t is long, usually terminated by a short curved point, with a thick, spongy, beautiful yellow rind, of an insipid taste; the pulp is divided into 10 cells, full of acid juice, without any seeds.

19 *Amalfi Lemon* (Engl.). *Limonier d'Amalfi* (Fr.). *Limone d'Amalfi* (Ital.). *Limoun long* (Nice). *Cìtrus Limònum Amalphitànum* (Risso). Fruit oblong, warted, with an elongated point and acid pulp. Ferr. hesp. 203. t. 207. This variety bears the name of the country where it has apparently been cultivated for the first time. It differs from the other varieties, in the fruit being longer and warted. The leaves are round, of a green mixed with yellow. The flowers are composed of 5, usually unequal petals, which are slightly tinged with purple, with about 40 stamens, bearing very long anthers. The fruit is long, straight, and rugged, terminated by a long, nipple-like point, with a rather thick dark-yellow rind; the pulp is divided into 10 cells, full of a rather acid pulp, containing oblong seeds, which are pointed at one end.

20 *Balotin Lemon* (Engl.). *Limonier Balotin* (Fr.). *Limone Balotino* (Ital.). *Limoun Baloutin* (Nice). *Cìtrus Limònum Balotinum* (Risso). Fruit oblong, with a thick, even, or rugged rind, containing a rather acid pulp. Desf. tab. de l'ecol. de bot. p. 188. This variety cannot be confounded with any other in this series. The tree has a prickly appearance, with long branches. The leaves are oval-oblong, straight, serrated, and standing upon long yellow petioles. The flowers are 6-petalled, with the teeth of the calyx sharp. The fruit is roundish-oblong, lengthened towards the peduncle, and is terminated by a nipple-like point, with a rather thickish yellow rind which has an insipid taste; the pulp is divided into 13 unequal cells, full of a sourish juice, without any seeds.

21 *Clustered Lime* (Engl.). *Limonier a fruit en grappe* (Fr.). *Limone racemoso* (Ital.). *Limoun à bouquet* (Nice). *Citrus Limònum racemòsum* (Risso). Fruit rounded, oblong, with a curved point, with rather acid pulp. Ferr. hesp. p. 239. t. 243. The leaves are oval-oblong, pointed. The flowers are collected in corymbs, the corolla is long, and composed of 5 petals. The fruit in great number on each peduncle, oblong-rounded, terminated by a nipple-like point which is usually curved, with a thick, shining, clear yellow rind; the pulp is full of sourish juice, containing a few oblong seeds. The variety is cultivated to a great extent in the south of Europe, on account of its bearing abundance of fruit all the year round.

22 *Laura Lemon* (Engl.). *Limonier Laure* (Fr.). *Cìtrus Limònum Làuræ* (Risso). Fruit large, oblong, wrinkled, with a thick rind and acid juice. Ferr. hesp. 217. t. 219. The name given by Ferrari to this variety has been retained. The tree has a fine appearance; the branches are furnished with some spines. The leaves are very long, thin, of a fine green colour, upon very long petioles. The flowers are very large. The fruit is oblong, rounded, very large, smooth or furnished with a few protuberances, terminated by a small point, with an agreeable scent; the rind is very thick and compact, of a dark yellow colour, with a very agreeable taste, the pulp is whitish, divided into 11 cells, full of an acid juice, containing a few elongated seeds.

23 *Citron Lemon* (Engl.). *Limonier cedrat* (Fr.). *Limone cedrato* (Ital.). *Limoun sedrou* (Nice). *Cìtrus Limònum citràtum* (Risso). Ferr. hesp. p. 299. t. 301. Gal. p. 115. no. 12. The branches of this tree are covered with a smooth grey bark. The leaves are oval-oblong, pointed, on long petioles. The flowers are usually solitary. The fruit is very large, oblong, rounded, of a pale-yellow colour, traversed by warted nerves, which renders it very rugged, with a very thick firm rind and a very small quantity of pulp, which is divided into many cells, full of an acid juice, without seeds.

24 *Two-teated Lemon* (Engl.). *Limonier a fruit a deux mamelons* (Fr.). *Limone bicapezuollato* (Ital.). *Limoun pouncut* (Nice). *Cìtrus Limònum fructu bipapillato* (Risso). Fruit ovate-oblong, greenish-yellow, with two nipple-like points. Ferr. hesp. p. 233. t. 215. This variety is easily distinguished by the form of its fruit. The branches are furnished with some points. The leaves are oval-oblong, pointed, of a greenish-yellow colour. The rind of the fruit is very thin, and the pulp has a very agreeable acid taste.

The following names occur in the English nurseries:—1 The Common Lime. 2 Broad-leaved. 3 Chinese. 4 Weeping. 5 West India.

The quality of *limes* and *lemons* are only to be judged by the quantity and acidity of their juice; the juice of the *lime* is preferred in tropical countries to that of the *lemon*, as being more wholesome and agreeable; mixed with water and sugar it is called lemonade. Its medical qualities are the same as those of the *lemon*, see p. 588 and 589. Lime-trees usually grow from 10 to 12 feet high, branching much from the base, and generally furnished with spines, therefore they are usually planted for fences as well as for their fruit in warm climates.

Lemon and Lime. Fl. May, July. Clt. 1648. Tr. 8 to 20 ft.

5 C. Paradìsi (Macfadyen, in Hook. bot. misc. pt. 3. p. 304.) leaves oval, rounded, crenulate, smooth; petioles winged; stamens 25; fruit large, subacid. ♄. G. Native? *Lomonier pomme* (Fr.). *Limone cedrato* (Ital.). *Limoun senso aigre* (Nice). *Cìtrus Limònum Paradìsi* (Risso). Fruit ovate-oblong, with a very thick and very smooth rind, and hardly any pulp, but what there is, is rather acid. The flowers are large, composed of 4-7 unequal petals. The fruit pear-shaped, of a greenish-yellow colour, with a good-tasted very thick tender rind. In Jamaica there are two varieties of this species, the *Barbadoes grape-fruit* and the *Forbidden-fruit*; the first possesses most of the sweet principle.

Paradise Orange or Forbidden-fruit. Fl. May, July. Clt.? Tree 30 feet.

6 C. Aura'ntium (Risso, ann. mus. 20. p. 181. t. 1. f. 1, 2.) petioles almost naked; leaves ovate-oblong, acuminate, with blunt point flower with 20-22 stamens; fruit globose with a thin rind and sweet pulp. ♄. G. Native of Asia, but cultivated in the south of Europe as well as in all the warmer regions of the world. Cìtrus Aurántium Sinénse, Gall. citr. 149.—Ferr. hesp. t. 427. 399. 401. and 385. Trunk naked at the bottom, but the branches form a tuft at the top. Petals white. Fruit of a golden colour. Commonly called Sweet Orange. The specific name is derived from *aurus*, gold, colour of fruit. As a desert fruit the *orange* is well known. The varieties most esteemed are the China, Portugal, and Maltese. The fruit is also used in confectionary, both ripe and when green and not larger than a pea, it forms various liquors and conserves, either alone or with sugars, wines, or spirits. In cooking it is used to perfume

a number of dishes. It is used to form various perfumes and pomades, and the flowers distilled produce orange-water, used in cooking, medicine, and as a perfume, but the chief use of the sweet orange is for the dessert.

There are 19 varieties of the orange enumerated by Risso.

1 *Common Orange*. Stem erect, branched, spiny; leaves ovate, oblong, and acute, slightly crenulated on the margins, smooth, and of a dark-green colour, on long petioles. Peduncles axillary, solitary, smooth, each bearing from 2-6-flowers. calyx pale-green, 5-cleft. Petals 5, oval-oblong, terminated by a point, of a beautiful white colour, furnished with green glands. Stamens from 20-22, unequal, with the filaments united at their bases by fours. The fruit is round, smooth, of a beautiful golden colour, with a rather thick rind, and the pulp is divided into 9 or 11 cells, full of a sweet yellow juice. Seeds roundish. This tree bears exquisite fruit, which resists the cold, but it is at the same time but little cultivated in the south of Europe, on account of its not bearing well until it is about 25 or 30 years old, as well as because the fruit is apt in windy weather to come against the spines of the branches, which injures them, and therefore renders them unfit to resist a long voyage.

2 *Majorca Orange* (Engl.). *Oranger de Majorque* (Fr.). *Arancio di Majorca* (Ital.). *Pourtegalie Majourkin* (Nice). *Citrus Aurántium Baleáricum* (Risso). Fruit globose, shining, with a thick rind and sweet pulp. Gall. p. 153. no. 30. The branches are furnished with spines at their base. The leaves are less than in the preceding tree, thicker, and more shining. The peduncles are very long, from 3-6-flowered; they have a pleasant sweet smell. The fruit is globose, smooth, deeply coloured, and arrives very soon at maturity. It will keep a longer time than any of the other varieties; the pulp is very sweet, and usually without seeds. This tree is not much cultivated, on account of its not being very productive.

3 *China Orange* (Engl.). *Oranger de la Chine* (Fr.). *Arancio fino* (Ital). *Pourtegalie de Malta* (Nice). *Citrus Aurántium Sinénse* (Risso). Ferr. hesp. p. 425. t. 427. Comel. hesp. no. 8. Volc. p. 185 and 186. This is a very majestic tree. The leaves are oval-oblong, sometimes roundish, a little waved at the margins, of a pale-green colour, upon long petioles. The flowers are usually disposed in corymbs, these are situated upon the tops of the branches. The fruit is round, depressed, firm, weighty, of considerable diameter; the rind is very thin, adhering closely to the pulp, which is very sweet. The seeds are oblong, with a curved point. This tree is much cultivated at Nice. The fruit is not so sensible to cold as the other varieties.

4 *Nice Orange* (Engl.). *Oranger de Nice, Oranger a fruit doux* (Fr.). *Arancio dolce* (Ital.). *Pourtegalie noustral* (Nice). *Citrus Aurántium Nicæ'nse* (Risso, l. c. pl. 1. f. 1.). Volc. p. 187 and 188. Desf. tab. de l'ecol. de bot. p. 138. This orange, from the abundance of its fruit, forms a very lucrative production for the inhabitants of Nice. The leaves are oval-oblong, tapering gradually to a point, of a beautiful shining green, bearing in their axils a great quantity of bunches of sweet-scented flowers towards the months of March and April. The fruit is round, usually depressed at both extremities, firm, of a beautiful yellow colour, with a thin rind; the pulp is divided into 10 or 12 cells, full of sweet and pleasant juice, and oblong seeds. This tree is generally cultivated.

5 *Genoa Orange* (Engl.). *Oranger de Genes* (Fr.). *Arancio di Genova* (Ital.). *Pourtegalie de Genova* (Nice). *Citrus Aurántium Genuénse* (Risso). This tree is very large. The leaves are small, oval-oblong, pointed, of a fine dark green. The flowers are disposed in bunches, and are composed sometimes of only 3 petals. The fruit is round, but sometimes oblong, commonly marked with a little ridge, which extends even to the middle of the rind, which is rather thick, and of a beautiful yellow colour; the pulp is divided into 10 cells, full of a sweet juice. The seeds are yellowish.

6 *Thick-rinded Orange* (Engl.). *Oranger a fruit de la grosse ecorce, Oranger a ecorce du fruit epaisse* (Fr.). *Arancio a frutto di corteccia spessa* (Ital.). *Pourtegalie bouffat* (Nice). *Citrus Aurántium cortecrasso* (Risso). Fruit large, round, with a thick rind and sweetish pulp. The leaves of this variety are always of a beautiful green, usually collected in tufts at the tops of the branches. The flowers are very large. The fruit is very large, round, of a deep-yellow colour, with a very thick granulated spongy rind, adhering closely to the pulp, which is divided into 10 cells, some of these contain a few small seeds; the juice is sweet and more watery than in the preceding varieties, which is the cause of the fruit not being easily preserved any length of time. This tree bears fruit well as an espalier, but is very little cultivated about Nice.

7 *Teat-fruited Orange* (Engl.). *Oranger a fruit mameloné* (Fr.). *Arancio scabroso* (Ital.). *Pourtegalie gibous* (Nice). *Citrus Aurántium gibbòsum* (Risso). Fruit round, with a sweetish insipid pulp. The tree is large, and very branchy. The leaves are usually curled. The fruit is round, of a reddish-yellow colour, covered with large protuberances, and its juice is never so sweet as the other varieties.

8 *Small-fruited Orange* (Engl.). *Oranger a petit fruit* (Fr.). *Arancio picciol frutto* (Ital.). *Pourtegalie gallo* (Nice). *Citrus Aurántium microcárpon* (Risso). Many gardeners are of opinion that this variety was the first that was introduced to the south of Europe, but particularly about Nice. It differs from all the other varieties in the leaves being smaller, situated upon petioles, which are a little winged at the base. The flowers are collected into bundles at the tops of the branches, each containing about 26 stamens. The fruit is always very small, and of a pale-yellow colour, full of a sweetish juice.

9 *Double-flowered Orange* (Engl.). *Oranger a fleur double* (Fr.). *Arancio a fior doppio* (Ital.). *Pourtegalie a flou doublo* (Nice). *Citrus Aurántium dùplex* (Risso). Fruit somewhat globose, usually fetiferous, with a sweet pulp. Volc. p. 201 and 202. Calv. no. 9. Gal. p. 159. no. 35. The leaves are large. The flowers are composed of from 6-10 petals. The pistil is usually divided into two parts at the top, each bearing a yellow stigma. The fruit is very different from the other varieties, as the pulp is formed of a double unequal range of cells, all of which are full of sweet juice. This tree is very little cultivated.

10 *Malta Orange* (Engl.). *Oranger a fruit rouge* (Fr.) *Arancio sanguigno* (Ital.). *Pourtegalie rouge* (Nice). *Citrus Aurántium Hierochúnticum* (Risso). Fruit globose with a thin rind and blood-coloured pulp. Till. 21. t. 16. Calv. no. 7. Ferr. hesp. p. 429. Gal. p. 156. no. 32. The fruit is of a golden colour, but becoming as red as blood at maturity; the pulp is divided into 9 cells, full of very sweet juice and small seeds.

11 *Compressed-fruited Orange* (Engl.). *Oranger a fruit deprime* (Fr.). *Arancio a frutto compresso* (Ital.). *Pourtegalie galleto* (Nice). *Citrus Aurántium fructu depresso* (Risso). Fruit round, depressed, with a sweet pulp. The fruit of this variety is not much esteemed in commerce, on account of the depression at the extremities. The trees are very large. The leaves are long oval. The flowers are collected into corymbs. The fruit is large and round, of a lively colour, with a smooth thick rind; the pulp is divided into 10 or 12 cells, which contain but a small quantity of sweet juice but a great number of seeds. This tree is not much cultivated.

12 *Ribbed-fruited Orange* (Engl.). *Oranger a fruit a côte* (Fr.). *Arancio a frutto costato* (Ital.). *Pourtegalie regat* (Nice). *Citrus Aurántium, fructu costato* (Risso). Fruit ribbed, crowned by a point, with a sweetish pulp. The fruit is of a middle size,

with a thin rind of a dark-yellow colour; the pulp is divided into 11 cells, full of an agreeable juice and a few small seeds. The flowers are smaller than in the other varieties. This tree is rather rare.

13 *Smallest-fruited Orange* (Engl.). *Oranger a fruit nain* (Fr.). *Arancio nano* (Ital.). *Pourtegalie Chinet* (Nice). *Cìtrus Aurántium fructu minutíssimo* (Risso). Fruit very small; leaves lanceolate, acute, subalate; pulp of fruit sweet. Ferr. hesp. p. 429. Volc. t. 2. p. 206, 207. Gal. p. 157. no. 32. This beautiful variety differs from all the other kinds, in its leaves being lanceolate, of a beautiful green, upon long subalate petioles. The flowers are small. The fruit is very small, about the size of those of the *Bigaradier Chinois;* the rind is smooth, of a pale-yellow colour; the pulp is divided into 7 cells, full of an agreeable acid juice.

14 *Holly-leaved Orange* (Engl.). *Oranger a feuille d'yeuse* (Fr.). *Arancio a foglia crispàta* (Ital). *Pourtegalie crispat* (Nice). *Cìtrus Aurántium illicifòlium* (Risso). Petioles awl-shaped; leaves roundish, curled, toothed; fruit somewhat ovate, very smooth, with a very sweet pulp. The appearance of this variety is very singular. The leaves are round, waved, curled, of a fine shining-green colour, yellowish beneath, with large, strong nerves, like those of the *China Holly.* The flowers are collected into isolated corymbs. The fruit is round, a little oblong, terminated by a small, nipple-like point at the summit, hollow in the middle; the rind is thickish, of a pale-orange colour; the pulp is divided into 10 cells, full of a very sweet pulp, usually without seeds. This variety is very rare in the environs of Nice.

15 *Eared-fruited Orange* (Engl.). *Oranger a fruit doré et Oranger dore* (Fr.). *Arancio dorato* (Ital.). *Pourtegalie daurat* (Nice). *Cìtrus Aurántium fructu aurato* (Risso, l. c. pl. 1. f. 2.) fruit ovate, eared, with a sweet pulp. This rare and beautiful variety is furnished with some spines; the young shoots are reddish. The leaves are oval, long, of a fine shining-green above, but yellowish beneath. The calyx is tinged with purple. The corolla is whitish-yellow with about 30 stamens. The fruit is oval-round, of a golden-yellow colour, terminated by a small nipple-like point, with a very smooth rind; the pulp is divided into 12 cells, full of an agreeable juice. Seeds few or wanting.

16 *Ray-fruited Orange* (Engl.). *Oranger a fruit rayé et Oranger a fruit blanc* (Fr.). *Ariancio bianco* (Ital.). *Pourtegalie blanc* (Nice). *Cìtrus Aurántium fructu variegato* (Risso). leaves ovate-oblong, sinuated, variegated with yellow; fruit globose, striped with yellow and green, with a somewhat sweet pulp. Ferr. hesp. p. 397. t. 399. Volc. p. 195. t. 196. The leaves have very long petioles. The flowers are composed of 5 long, blunt petals, with about 24 or 28 stamens. The fruit is globose, sometimes a little depressed, of a golden-yellow colour, traversed lengthwise with bands of green, which disappear at maturity; the rind is rather thick; the pulp is of a pale-yellow, of an agreeable sweet taste. This tree does not bear much cold.

17 *Changeable-fruited Orange* (Engl.). *Oranger a fruit changeant et Culotte de chien* (Fr.). *Calzoni di cane* (Ital.). *Braio de can* (Nice). *Cìtrus Aurántium fructu variábili* (Risso). Leaves narrow, spotted; fruit oblong, green, striped, with a sweet and bitter pulp. Ferr. hesp. p. 397. t. 401. Tourn. R. H. p. 620. This is a very majestic tree. Petioles long. The flowers are collected in bunches with small petals, and about 24 short stamens. The fruit is oblong, pear-shaped, yellow, striped with bands of a reddish colour; the rind is thick and bitter; the pulp is sweetish. The seeds are striped.

18 *Lime-shaped Orange* (Engl.). *Oranger Limetiforme et Oranger a fruit Limette* (Fr.). *Arancio frutto Limeta* (Ital.). *Pourtegalie Limetta* (Nice). *Cìtrus Aurántium limetiforme* (Risso). Fruit oblong, sinuated, pointed, with a reddish sweet pulp. This is the tenderest of all the *oranges* we have mentioned. The tree is rather high. The leaves are of a yellowish-green. The fruit is globular, of a pale-yellow, longitudinally traversed by many sinuses from the base, and terminated by a small obtuse point. The rind is thin and the pulp is divided into 8 cells full of sweet juice. It is rare, and the fruit seldom comes to maturity.

19 *Lemon-formed Orange* (Engl.). *Oranger limoniforme* (Fr.). *Limone aranciato* (Ital.). *Limoun Pourtegalie* (Nice). *Cìtrus Aurántium limoniforme* (Risso). Fruit roundish-oblong, with a sweet pulp. Ferr. l. 3. p. 384. t. 385. Gal. p. 117. no. 14. The form of the fruit of this tree is that of a *lemon,* but the colour and taste of the fruit are those of an *orange.* The branches are hairy and spiny. The leaves are oval and finely denticulated, on short petioles. The flowers are usually in pairs; the calyx is red and the corolla is very long and pointed, with 26-30 free stamens. The fruit is roundish-oblong, terminated by a short obtuse point, of a yellowish-green colour. The pulp is sweet, without seeds.

In Brazil the following varieties of the *orange* are cultivated. Some of them are probably identical with some of those described above.

1 *Larangeira seleta.* This variety is obtained by grafting. Its rind is thin and smooth. The pulp is very delicious and sweet. This is probably the *Navel-orange* of Bahia, which is large and round, and terminated by a small protuberance, hence its name. It is considered one of the best oranges in that country.

2 *Larangeira da China.* This variety is very common all over Brazil. It is perhaps the common *China orange.*

3 *Larangeira Tangerina pequena.* The rind is very thin and smooth. The fruit is small. The pulp is reddish and of a very agreeable taste.

4 *Larangeira Tangerina grande.* In every respect the same as the preceding, but the fruit is much larger.

5 *Larangeira seca.* The fruit is sweet but it is not juicy.

6 *Larangeira embeguda.* The rind is incomplete and shining, it divides into 9 divisions at the top. The taste is very agreeable. It is common at Bahia, but it is also much spread over the rest of Brazil.

The following names of *oranges* occur in the London nurseries; many of them may be the same as those described above. 1 Common Orange. 2 Bloody-fruited. 3 Broad-leaved. 4 Large Bergamot. 5 Small Bergamot. 6 Cluster-fruited. 7 Curled-leaved. 8 Fine-leaved. 9 Laurel-leaved. 10 Lisbon. 11 Maltese. 12 Bloody Maltese. 13 Monstrous. 14 Narrow-leaved. 15 Spike-flowered. 16 Striped leaved, of various sorts. 17 Striped Willow-leaved. 18 Sweet-skinned. 19 Sweet China. 20 Tangiorana. 21 Thick-leaved. 22 Weeping. 23 Willow-leaved, &c.

Sweet *Orange.* Fl. May, July. Clt. 1595. Tree 10 to 30 ft.

7 C. vulgàris (Risso in ann. mus. 20. p. 190.) petioles winged; leaves elliptical, acuminate, crenulated; flowers with 20 stamens; fruit globose, with a thin, scabrous, or smooth rind, and a bitter acrid pulp. ♄. G. Native of Asia, but now cultivated in the south of Europe, America, and Africa. C. Aurántium I'ndicum. Gall. citr. 122. C. Bigaràdia, Duh. ed. nov. 7. p. 99. Ferr. hesp. t. 409. 589. 391. 430. 433. C. Sinénsis, Pers. ench. 2. p. 74. C. Aurántium, Ker. bot. reg. 346. C. Cálot, Lag. gen. et spec. 17. Petal white. Risso gives the following description of the species. Stem erect; branches spiny. The petioles have a wing in the form of a heart. The flowers are of 5 white petals on short pedicels. Stamens from 30 to 34, unequal, with flat filaments. Fruit round, rarely tubercled, of a dark-orange colour. The rind is sweet-scented. The pulp is divided into 12 or 14 cells, containing a bitter acid juice.

The seeds are oblong, of a yellow colour. *Seville* or *Bitter Orange* (Engl.). *Bigaradier sauvage* (Fr.). *Citrone, Sour sylvatico* (Ital.). *Citroun sauvage* (Nice). Ferr. 377. Volc. 186. Gal. 121.

The juice of the Seville *orange* is used in medicine in febrile and inflammatory disorders, but that of the other sorts possesses the same qualities in a lesser degree. It is chiefly used for making marmalade, and a variety of other agreeable confections. The acid of *oranges*, Dr. Cullen observes, unites with the bile, takes off its bitterness, and may be useful in obviating disorders arising from its acidity. The qualities of the Seville *orange* are exactly the same as that of the *lemon* and *lime*. Orange-water is obtained from the flowers by distillation.

1 *Common Seville Orange* (Engl.). *Oranger bigarade* (Fr.). *Arancio citrone* (Ital.). *Limoun San Vincent* (Nice). *Cìtrus vulgàris* (Risso). A tall tree with greyish bark, with the branchlets furnished with deciduous points at the base of the petioles. The leaves are oval-oblong, finely denticulated. The flowers are always disposed in terminal corymbs. The calyx is whitish and deeply 5-lobed. Petals 5, oblong. Stamens 30. The fruit is roundish-oblong, terminated by a large obtuse point, of a dark-yellow colour, with a few little protuberances. The rind is thick, adhering to the pulp, which is divided into 8 cells, full of an acid bitter juice, and does not contain any seeds. This tree bears flowers and fruit all the year round.

2 *Horned Seville Orange* (Engl.). *Bigaradier cornu* (Fr.). *Citrone cornuto* (Ital.). *Sitroun daude* (Nice). *Cìtrus vulgàris corniculàta* (Risso). Fruit roundish, with a thick, wrinkled rind, mucronate. Ferr. p. 407. t. 409. This is a tall tree. The leaves are large, elliptical, of a dark-green colour. The flowers are usually disposed in pairs. The fruit is large, of a reddish-yellow colour, full of small tubercles, the pulp is divided into 10 or 14 cells, full of an acid bitter pulp, containing angular seeds. This variety is very generally cultivated in the south of Europe for its flowers, which are used in the composition called *eau-de-Bigarade*, as well as for its fruit, which is used to season meat.

3 *Bouquette Bigarade* or *Bouquette Seville Orange* (Engl.). *Bigaradier bouquetier* (Fr.). *Citrone a foglia rizza* (Ital). *Bouquetie* (Nice). *Cìtrus vulgàris folio crispo* (Risso). Leaves curled; fruit small, roundish, scabrous, containing an acid, rather bitter pulp. Ferr. p. 387. t. 389. Volc. p. 178 and 179. Gal. p. 131. no. 20. This is a small tree. It is thickly covered with leaves, which are oval-roundish, curled, and denticulated, on round almost wingless petioles. The flowers are axillary, 5 or 7 together, usually of 6 petals. The fruit is of a reddish-yellow colour, with a tubercled or wrinkled thick rind, scented like the lily of the valley, containing a very bitter acid pulp.

4 *Many-flowered Seville Orange* or *Bigarade* (Engl.). *Bigaradier riche dépouille* (Fr.). *Citrone a molti fiori* (Ital.). *Grand bouquetie* (Nice). *Cìtrus vulgàris multiflòra* (Risso). Many-flowered; fruit globose, very smooth, containing an acid and bitter pulp. Desf. tab. de l'ecol. de bot. p. 138. This differs much from the preceding, not only in its larger size; but also in the disposition of the leaves, as well as in the great number of flowers which cover the plant all the year round. The tree emits short branches. The leaves are elliptic and denticulated, of a fine green colour; the wings of the petioles are broad and heart-shaped. The flowers are in tufts at the extremity of the branches; the corolla is white, usually of 5 petals, which are oval-oblong and recurved. The stamens are about 36 in number. The fruit is round, very large, of a dark reddish-yellow colour, with a very smooth rind; the pulp does not adhere to the rind, and is divided into 10 cells.

5 *Double-flowering Seville Orange* or *Bigarade* (Engl.). *Bigaradier a fleur double* (Fr.). *Citrone fiore doppio* (Ital.). *Bigarado flou doublo* (Nice). *Cìtrus vulgàris florifer* (Risso). Flowers double; fruit globose or oblong, usually fetiferous, containing bitter pulp. Ferr. p. 187. t. 391. Volc. 201 and 202. Gal. p. 129. no. 18. This tree resembles the horned Seville orange. The leaves are very smooth, and the wings of the petiole are rather narrow. The calyx is 8-cleft. The petals are 8-14, oblong. The fruit is middle-sized, varying in form, usually double, that is to say, containing one within the other. The flowers are used as a perfume.

6 *Spanish Seville Orange* or *Bigarade* (Engl.). *Bigaradier d'Espagne* (Fr.). *Citrone di Spagna* (Ital.). *Sitroun d'Espagna* (Nice). *Cìtrus vulgàris Hispánica* (Risso). Leaves ovate-oblong, revolute, sinuated; fruit large, round, wrinkled, with a sweet pulp. This tree is distinguished alone by its aspect. The branches and branchlets are very short. The leaves are oval, curled, and sinuated, of a clear green colour; the wings of the petioles are broad and heart-shaped. The flowers are large, and have a scent resembling that of jasmine, of 5 elliptic petals. The fruit is large, round, and wrinkled or tubercled, of a pale reddish-yellow colour, with a thick rind which does not adhere firmly to the pulp, which is divided into 10 cells, full of a sweet bitterish pulp, and oblong seeds.

7 *Wrinkled Seville Orange* (Engl.). *Bigaradier rugueux* (Fr.). *Citrone scabroso* (Ital.). *Serioulou dous* (Nice). *Cìtrus vulgàris rugòsa* (Risso). Fruit small, mucronate, wrinkled, containing a sweet and bitter pulp. The branches are straight and the leaves are elliptic and undulated, of a dark shining-green, on long, winged, heart-shaped petioles. The flowers are in twos or threes, white, usually of 5 oblong petals. The fruit is round, of a pale-orange colour, with a thick wrinkled rind, furnished with protuberances at the summit, containing a sweet pulp, but it is rather bitterish. The seeds are pale-yellow.

8 *Sweet-fruited Seville Orange* or *Bigarade* (Engl.). *Bigaradier a fruit doux* (Fr.). *Citrone frutto dolce* (Ital.). *Sitroun dous* (Nice). *Cìtrus vulgàris pulpâ dulci* (Risso). Fruit globose, smooth, with a thick rind, containing a sweet pulp. The leaves of this tree are pale-green, oval-oblong, standing upon long, winged petioles, and often furnished with spines at the base. The flowers are large, disposed in corymbs, of 5 petals and very sweet-scented. The seeds are round on this and the preceding variety.

9 *Smooth-fruited Bigarade* (Engl.). *Bigarade a fruit lisse* (Fr.). *Citrone liscio* (Ital.). *Serioutou unit* (Nice). *Cìtrus vulgàris glabérrimus* (Risso). Fruit round, smooth, with a thin rind and bitter sweet pulp. This tree is not so much branched as the other varieties; the leaves are oval-lanceolate, of a pale-green colour, standing on long, winged, heart-shaped petioles. The flowers are disposed singly, but sometimes in pairs on the summits of the branches. The calyx is 4-5-cleft, and the corolla is of 5 reflexed petals. The fruit is always solitary, of a pale-yellow colour, and the pulp is divided into 9 cells. The seeds are striated.

10 *Chinese Bitter Orange* or *Bigarade* (Engl.). *Bigaradier Chinois* (Fr.). *Chinotto* (Ital.). *Chinet* (Nice). *Cìtrus vulgàris Chinénsis* (Risso). Fruit small, spherical, containing a somewhat acrid, bitter pulp. Ferr. t. 430. 433. Tourn. p. 620. Desf. tab. de l'ecol. de bot. p. 138. Gal. p. 132. no. 21. The branches of this shrub are small and scabrous, covered with small lanceolate leaves, standing on short wingless petioles. The flowers are disposed in a kind of thyrse along the peduncles. The fruit is concave at the summit, of a reddish-yellow colour; the rind is rather thick, and the pulp adheres but slightly to the rind.

11 *Myrtle-leaved Orange* (Engl.). *Bigaradier Chinois a feuille de myrte* or *Chinois nain* (Fr.). *Nanino da China* (Ital.). *Chinet picoun* (Nice). *Cìtrus vulgàris myrtifòlia* (Risso). Fruit small, with an acid and bitter pulp. Ferr. p. 430. Gal. p. 134. no. 22. This variety never grows to a tree, but always remains a small shrub. The leaves are small, lanceolate, and

pointed, of a fine green colour, resembling those of the broad-leaved myrtle. The flowers are small and white, disposed in racemes along the branches, there are usually a great number on the same peduncle. The fruit is of the colour and form of the preceding, but rather smaller.

12 *Large-fruited Bigarade* or *Seville Orange* (Engl.). *Bigaradier a gros fruit* (Fr.). *Citrone frutto grosso* (Ital.). *Gros sitroun dous* (Nice). *Cìtrus vulgàris fructu maximo* (Risso). Fruit large, round, wrinkled, depressed, with a spongy rind, and rather sweet pulp. The leaves are very long, reclined, shining, undulated, of a dark-green, on long, winged petioles. The flowers are large and white, sweet-scented, disposed along the branches. The calyx is green, of 5 lobes. The corolla is composed of 4-6 petals. The stamens about 26 in number. The stigma is trigonal. The fruit is very large, of a reddish-yellow colour, with a very thick spongy rind, and the pulp is divided into 9 cells.

Common Seville or Bitter Orange. Fl. May, July. Clt. 1595. Tree 20 to 30 feet.

8 C. decuma'na (Lin. spec. 1100.) branches prickly; leaves oval, obtuse or emarginate, pubescent beneath: petioles with broad, cordate wings; fruit large, with a thick rind, and red or white pulp; stamens 30. ♄. S. Native of China and Japan, but now cultivated in South America. Pampel-moes, Rumph. amb. 2. t. 24. f. 2. The shaddock is called *Arancio Massino* by the Italians, and *Oranger Pampelmouse* by the French. The fruit is very large and round, about the size of a large cannon-ball, about 10 or 14 pounds weight; rind even, of a greenish-yellow colour; thick, fungous, and bitter; pulp white or red: juice sweet or acid. It was first brought from China to the West Indies by Captain Shaddock, from whom it has derived its name. The shaddock is certainly the least useful of the species, and is cultivated chiefly for show. Where several sorts of *oranges* are presented at the dessert it makes a striking addition to the variety. The fruit is of a subacid sweetness, excellent for quenching thirst, and from the thickness of its rind, will keep longer at sea than the fruit of any other species of *Cìtrus*. The Italians, according to Dr. Sickler, have one variety, the French, according to the *Nouveau Cours*, &c. have four kinds. In the English nurseries the names of four occur, viz. 1 The Common Shaddock. 2 The Rough-fruited. 3 The Largest-fruited. 4 The West Indian. In Jamaica there are 2 varieties, 1 malifórmis; fruit globose, with white pulp; 2 pyrifórmis, fruit pear-shaped, with red pulp.

Large-fruited Orange or Shaddock. Fl. May, July. Clt. 1722. Tree 18 feet.

† *Species not sufficiently known.*

9 C. hy'strix (D. C. cat. hort. monsp. p. 97.) petioles with broad wings; leaves ovate, hardly larger than the petioles; branches very spiny. ♄. S. Native of the East Indies. Lèmoferus, Rumph. amb. 2. t. 28? Flowers and fruit unknown.

Porcupine Orange. Clt.? Tree 10 feet.

10 C. spinosi'ssima (Meyer. esseq. 247.) petioles winged; leaves oval, crenated, bluntish at both extremities. ♄. S. Native of Guiana and Brazil in sandy woods. Flowers white, twin. Fruit yellow, about the size of a walnut. This appears to be the common wild lime of America, and perhaps only a variety of *Cìtrus Limétta*.

Very-spinose Lime. Fl. May, Jul. Clt.? Tree 15 feet.

11 C. Japo'nica (Thunb. fl. jap. 292.) petioles winged; leaves acute; stem angular; flowers axillary, solitary, or twin; fruit 9-celled. ♄. G. Native of Japan. Thunb. icon. jap. t. 15. Fruit the colour and form of an orange, but small, about the size of a cherry, containing a sweet eatable pulp.

Japan Orange. Fl. May, July. Clt.? Shrub 2 feet.

12 C. fu'sca (Lour. coch. 467.) petioles with heart-shaped wings; leaves ovate-lanceolate; branches spinose; fruit 9-celled, globose, rough. ♄. G. Native of China, Cochin-china, and the Moluccas.—Rumph. amb. 2. t. 33. Fruit of a greenish-brown colour, containing an acid ungrateful pulp.

Brown-fruited Citron. Fl. May, July. Clt.? Tree 15 feet.

13 C. nóbilis (Lour. coch. 466.) petioles rather linear, straight; branches ascending, unarmed; fruit depressed, 9-celled, with a thick rind. ♄. G. Native of Cochin-china and China. Ker, bot. reg. 211. Andr. bot. rep. 608. Fruit reddish, both without and within, containing sweet juice, and eatable sweet rind. This is distinguished from the common orange by its curious form, and by the pulp adhering so loosely to the rind, as to be separable from it by the slightest effort, and leaving in many places a considerable opening between them. It is the most delicate of its tribe, whence its name by the Chinese, *Mandarine* or *Noble Orange*.

Noble or Mandarine Orange. Fl. May, July. Clt. 1805. Tree 15 feet.

14 C. margari'ta (Lour. coch. 467.) petioles linear; leaves lanceolate; branches ascending, spiny; fruit oblong, 5-celled, covered with a thin smooth rind. ♄. G. Native of China about Canton. Fruit reddish-yellow, 8 lines long, containing a sweet pulp.

Pearl Lemon. Fl. May, July. Clt.? Tree 12 feet.

15 C. Madure'nsis (Lour. coch. 570.) petioles linear; leaves broad-lanceolate; branches diffuse, unarmed, angular; fruit globose, smooth, 8-celled. ♄. G. Native of China, Cochin-china, and Madura.—Rumph. amb. 2. t. 31. Fruit greenish-yellow, containing a bitter pulp, which is eaten when prepared with sugar, but never raw.

Madura Orange. Fl. May, July. Clt.? Shrub 8 feet.

16 C. angula'ta (Willd. spec. 3. p. 1426.) petioles naked; leaves ovate, acute; fruit angular. ♄. G. Native of Amboyna.—Rumph. amb. 2. t. 32.

Angular-fruited Citron. Fl. May, July. Clt.? Tree.

17 C. buxifòlia (Poir. dict. 5. p. 681.) petioles linear, very short; leaves ovate, retuse; flowers racemose. ♄. G. Native of China. Perhaps this plant is allied to *Cìtrus vulgáris var. myrtifòlia* of Risso, and therefore ought perhaps to be placed under that head.

Box-leaved Orange. Fl. May, July. Shrub 3 feet.

18 C. articula'ta (Willd. herb. ex Spreng. syst. 3. p. 334.) petioles leafy, obovate, large, articulated; leaves oblong; peduncles many-flowered. ♄. S. Native of Guinea.

Jointed-petioled Orange. Tree 20 feet.

19 C. Chile'nsis (Molin. chili. ex Spreng. syst. 3. p. 335.) leaves ovate-lanceolate, nearly sessile, shining; fruit nearly globose. ♄. G. Native of Chili.

Chili Orange. Tree 15 feet.

Cult. All the species of *Cìtrus* may be propagated by seeds, cuttings, layers, by grafting, and budding. The object of raising plants from seed is stock for grafting or budding, or for new varieties. To attempt raising new varieties from seed in Britain would be too tedious, as the plants raised from seed in Italy do not shew for fruit for 7 or 8 years. *Citrons* or *Seville Oranges* Miller considers the best to raise for stocks, as they are of more robust and quicker growth. These should be raised on a hot-bed, and in the course of 6 weeks they will be fit to plant separately into pots, and placed again into the hot-bed, shading them for some time, but afterwards allowing plenty of air in order to harden them. In August of next year they will be sufficiently strong for budding; after the operation has been performed, they should be placed under a hand-glass. In the course of a month it will be observable whether the buds have taken, then untie them, and let them remain in the green-house all winter. In spring cut off the heads of the stocks 3 inches above the buds, again place them in a moderate hot-bed, and by the end of July they

will have made shoots 2 feet long, then harden them before the cold sets in by exposing them to the air by degrees. In Italy the plants are budded at from 2 to 5 feet high on the stem, according to the intention of the trees; a bud is commonly inserted on each side of the stock. The Maltese make a sloping section and bud on one side only, which is a much better method than the Italian, as the sloping section becomes covered with bark, which the horizontal ones never do, but a dead stump or rotten hole may be observed during the whole period of their existence.

Grafting is occasionally resorted to in Italy, and is that most generally adopted in the nurseries at Paris. The stocks when of 2 years growth, and not much thicker than a scion, are cut off and grafted in the whip manner. This manner, as well as approach grafting, is frequently practised in England, as well as another manner of grafting, by taking a slice out of the stock without taking off the head, tying the scion as neatly and firmly as possible, without tongueing it, and claying it over. Mr. John Nairn places his stocks in a hot-bed for a fortnight, in order to rise the sap, that the bark may easily separate from the wood; the stocks are then cut off about 2 inches above the surface, and a longitudinal incision made with a sharp knife as in budding, separating the bark from the wood on each side. Let the scion, whether in fruit or flower, be cut thin, in a sloping direction, and thrust between the bark and the wood; it should then be carefully tied with woollen yarn and clayed, then place a glass of proper size over each, pressing it firmly into the mould to prevent the damp from dropping on the scion. These stocks should then be placed on a brisk hot-bed of dung, and in about 6 weeks the glasses may be taken off, and the clay and binding removed, but it will be necessary to tie a little damp moss on in lieu of the clay, and keep the glasses on in the heat of the day, removing them at night, when in about 3 weeks they will be fit to put into the greenhouse, where they will be a great ornament, being either in flower or fruit. He prefers the *Mandarine Orange* for this trial, as the fruit is more firmly fixed than in any other sort.

Mr. Henderson of Woodhall near Hamilton, a superior cultivator of the *Citrus* tribe, considers cuttings as the quickest mode of getting plants. The cuttings should be from 9 to 18 inches long, taking the lower leaves off to the extent of 5 inches, then cut them right across, make a small incision in an angular direction at the bottom of the cutting, then plant in a pot of sand 5 inches deep, sorting them according to their size, then give them a good watering overhead to settle the sand about them; he lets them stand a day or two in the shade, then plunges the pots to the brim in a hot-bed, and shades them well until they have struck root. After they are rooted they should be planted separately into pots in a proper compost, place them again in a hot-bed, and shade them for some weeks, then gradually expose them to the air. Cuttings with wood of 2 years old he finds strike as freely as young wood. They may be put in at any time of the year except when the plants are making young shoots. They generally strike in about 6 weeks with a hand-glass over them, in a gentle heat. The *Citron* strikes easiest, and makes much better stocks for grafting than any other kind.

By layers. This method is practised both on the continent and in England. In laying, the plants may either be laid down on their sides and laid as stools, or pots may be raised and supported under the branches to be propagated from. Shoots of 1 or 2 years growth may be then cut or ringed, and bent into the pot, or drawn through the hole at the bottom, and treated in the usual manner, taking care to supply water with the greatest regularity. Shoots layered in March will be fit to separate in September. In general the *Citron* tribe, like most other fruit trees, do not succeed so well from cuttings or layers as they do by grafting or budding on seedling stocks.

Compost. At Genoa and Florence they are grown in a strong yellow clay, richly manured; this is considered by Italian gardeners to be best suited to the *Orange* tribe. The French use equal parts of clayey loam, rotten vegetable matter, and half-rotten dung. In the succeeding year they add a portion of decomposed horse-dung, equal to the half of its bulk, turned over 2 or 3 times, and many other ingredients, as pigeons' dung and sheep's dung.

Mr. James Mean (Hort. trans. 2. p. 295.) makes his compound as follows: Well rotted cow-dung, 2 or 3 years old, one-fourth, well prepared rotten leaves, 2 or 3 years old, one-half, mellow loam one-fourth, with a small quantity of sand or road-grit added to the compost, which ought not to be sifted too fine.

Henderson (Cal. hort. mem. 3. p. 302.) takes one part of light brown mould from a piece of ground that has not been cropped or manured for many years, one part of peat earth, two parts of river sand or pit sand, and one part of rotted hot-bed dung, with one part of rotted leaves of trees; mixes them all well together, so as to form a compost of uniform quality.

R. Ayres (Hort. trans. 4. p. 310.) uses ten parts of strong turfy loam, seven of pigeons'-dung, seven of good rotten horse-dung, and 10 of old vegetable mould, mixed and prepared a twelvemonth before using.

Temperature. The standard temperature for the *Citrus* tribe is 48°, but in the growing season they require at least 10 degrees higher to force them to produce luxuriant shoots, but the air of the house should never be allowed to fall under 40°. Although the *Orange* will endure a severe degree of cold for a few hours without injury, yet, as Mean has observed, the leaves once injured, the trees will require 3 years to recover their appearance. Ayres never suffers his Orangery to be heated above 50° by fire, until the end of February, when the trees show blossom; it is increased to 55°, but never allowed to exceed 60° by sun heat, the excess of which he checks by the admission of air till the early part of June, when he begins to force the trees by keeping the heat in the house up as near as possible to 75°. For, he says, that neither *Citrons*, *Oranges*, *Lemons*, or *Limes*, can be grown fine and good without less heat (Hort. trans. 4. p. 311.). The *Orange*, Humboldt observes (De Distrib. Plant. 158.), which requires an average temperature of 64° degrees, will bear a very great degree of cold, if continued only for a short time. Dr. Sicklers says, "it is remarkable how much cold and snow the common *Lemons* and *Oranges* will bear at Rome, provided they are planted in a sheltered situation, not much exposed to the sun. He saw at Monte Pincio 3 standard trees in the open ground heavily covered with snow for more than a week. The green leaves, but still more the golden fruit, looked singular and beautiful amidst the snow. Neither fruit nor leaves had suffered, being in a sheltered place, while those that were exposed to the sun turned black and died, rendering the whole tree at once sickly. This proves that it is more the sudden transition of heat to cold or cold to heat, than the degree of either which destroys vegetation, as it appears that the snow had been thawed gradually from off these trees, and more by the temperature of the atmosphere than by the direct rays of the sun. *Oranges* will stand the climate of Devonshire and Cornwall, and perhaps the south of Ireland, in the open air in sheltered situations. All the species endure the open air at Nice, Genoa, and Naples; but at Florence and Milan, and often at Rome, they require protection during winter by placing the trees in conservatories, or under sheds. But the finest orange orchards are in the vicinity of Genoa.

Air. Orange trees require a large share of air when the weather is favourable; the prevention of damp is as essential to the perfection of the plants as the exclusion of cold. Where these trees are kept in old-fashioned opaque-roofed green-

houses, these cautions as to air and damp deserve particular attention. Ayres says, the more air orange trees have during the blossoming season, the more certain they will be of setting the fruit.

Light is very essential to the growth of orange trees. Whoever intends to grow the *orange* in perfection, should adopt houses, if not with glass on all sides, at least with glass fronts and roofs. When the plants are placed in the naked ground as standards, glass on all sides is highly desirable, for otherwise their leaves and shoots will all be turned to the south, but not so with those in tubs and boxes, as they can be turned at pleasure.

Water. Orange trees, like other evergreens which delight in a strong soil, are not naturally fond of water; but in this country those grown in boxes are often much injured for want of a due supply, for the earth becoming indurated, and the roots matted, the water wets only the surface, and escapes by the sides of the boxes, so that while the mass of the earth is dry the surface is moist.

Mean. When he thinks from the appearance of a plant that the water does not penetrate the earth, he uses a sharp iron rod to penetrate to the bottom of the earth, and to form a channel for the water, too little or too much of which is equally injurious to orange trees.

Knight (Hort. trans. 2. p. 129.) watered an orange tree with very strong liquid manure, and found it to grow with equal comparative vigour to the mulberry.

Ayres (Hort. trans. 5. p. 310.), after the fruit is set, waters with water, in which at the rate of 3 barrows of fresh cow-dung, 2 barrows of fresh sheep's-dung, and 2 pecks of quick-lime, have been added to every hogshead; when used, the water is about the consistence of cream.

The French (Nouveau cours. art. oranger,) water once after shifting with a very strong lessine; they also mulch with recent cow and horse-dung, renewing these once a month or oftener during summer, that there may be always abundance of soluble matter for the water to convey to the roots.

Growing the trees. All the kinds may be either grown as dwarfs in moderate sized pots or boxes; as standards, with stems from 3 to 8 feet high, in large boxes or tubs; as standards planted in the naked ground, and either dwarf or standard espaliers, planted or trained against a trellis, under glass.

The three first modes are best adapted for ornament; standards combine both elegance and utility; in a house properly constructed they will produce handsome heads and abundant crops. Espaliers is a much more certain way of having large crops, as every part of the plant above ground can thus be brought near the glass. Though orange trees thrive exceedingly well in large pots and boxes, yet to have them produce the finest crop of fruit, they should be planted in the ground like peach trees, and trained like them, or as standard cherry trees in a conservatory. The latter has by far the best effect, especially when the stems of the trees are 7 or 8 feet high, and the heads well formed; but the largest fruit is produced when the trees are planted against a trellis of a narrow house, and treated like peach trees. Henderson, of Woodhall, grows very large fruit in this way. All the *Citrus* tribe when first potted or put in boxes, require to be placed in heat, watered overhead occasionally, in order to make them throw out fresh shoots and roots.

Pots, boxes, and tubs, should be of a size proportionable to the plants, as too much or too little room for the roots will injure the plants. Large boxes or tubs should be so constructed as to be easily taken to pieces, so as to examine the roots, or to shift into larger boxes. The largest boxes in use in Holland and France are 4 feet square, which serve for trees with stems 6 or 8 feet high, with heads of 6 feet diameter, and above a century old.

Choice of plants. For moderate sized trees to be grown in green-houses, such as are in this country or the Parisian nurseries are preferable. But for large handsome trees, those from Genoa, Nice, or Malta are preferable, for those which are raised from seed in England will not grow so large in their stems under 18 or 20 years, as those are when brought over. But the best way to procure trees from Italy is to send an order through a British merchant, who has a correspondent at Genoa or Nice, for named sorts, according to the Nice or Genoa names, which will be found in their proper order in the enumeration of varieties which we have given, as the plants purchased in London at the Italian warehouses are without names, the greater number of which will be found to be the *Shaddock* and *Citron*, as the Italian gardeners find these sorts make stronger roots and more shewy trees, and therefore send the less number of the less luxuriant, but more useful varieties.

Pruning. The object of pruning is to keep the head proportionate to the capacity of the box containing the roots. At Versailles, M. Pethon, who has been head gardener for 40 years, every 6 or 8 years gives an elaborate pruning, shortening the shoots to within an inch of the old wood, and the tree, thus almost deprived of its leaves does not produce blossoms during the 2 next years, it furnishes, however, strong shoots, which are trained to the form of a bushy well furnished head. Pruning orange trees in England does not differ from that given to other green-house plants, and the consequence is handsome bushes or trees, with the blossoms and fruit on the surface of the foliage. But when orange trees are cultivated for the sake of their fruit, the branches ought to be kept thin, so as to admit of sun and air. The blossoms of most of the *Citrus* kind are produced in the form of terminating peduncles, on the wood of the current year, and hence the object of the pruner ought to be to encourage the production of young wood in every part of the tree.

Ayres cuts away the least promising branches in February, to make room for younger and more productive wood, and shortens very strong branches, to keep the tree in shape. After the fruit is set, it ought to be thinned, seldom leaving more than one on a peduncle.

In France they thin the flowers, which by that means they are enabled to use for distillation. The thinned fruit is used in confectionary. The thinning of the fruit, however, will depend upon the state of the trees; those at Bromley-hill in Kent never require any thinning, where the trees are very fine, and loaded with peculiarly large fruit.

Insects and diseases. The coccus and red-spider are the chief insects injurious to the *Citron* tribe; both to be removed by water applied with a brush or sponge. Mean (Hort. trans. 2. p. 296.) early in March, when he top-dresses his plants, applies a copious washing with the engine; then shuts up the house close for three or four hours, which produces a strong heat, as high as 70°, which effects the destruction of the red-spider, while the stems and leaves are wiped with a wet sponge, to remove other insects and dirt.

Gathering the fruit. At Rienes in France, where the fruit of the *Orange* is reared for sale, it is gathered every year, generally in May. If not gathered then it will hang on the tree for 2 or 3 years longer; but when the young fruit is green and swelling, the old ripe fruit becomes somewhat shrivelled, and almost void of juice. But as the new fruit begins to arrive at maturity, the juice begins to return to the old fruit, so that both old and new crops are in perfection the following May. In this way at Genoa the fruit is sometimes allowed to remain on 3 years, and being then gathered, has a peculiar sub-acid sweetness and flavour, and is sold at a higher price. The *Lemon* ripens irregularly, and drops off when ripe. It is therefore gathered all the year through. In conservatories the orange tree generally requires

15 months to ripen its fruit, and hence both green and ripe fruit are together on the tree. In gathering for the table in this country, the fruit should be carefully cut off with a few leaves attached, and thus garnished sent to the dessert. By allowing the fruit to remain, the trees will at all times have green and yellow fruit, which, with the shewy leaves and fragrant white blossoms, form in spring a charming ornament.

ORDER XL. HYPERICI'NEÆ. D. C. theor. elem. ed. 1. p. 214. fl. fr. 4. p. 860. Chois. prod. hyp. 32. D. C. prod. 1. p. 541.—Hypérica, Juss. gen. p. 254.

Calyx 4-5-parted or 4-5-sepalled, permanent, usually unequal, the 2 outer ones small, the 3 inner ones largest, usually dotted and glandularly-toothed. Petals 4-5 (f. 103. *c.*), hypogynous, alternating with the lobes of the calyx, twisted in the bud, commonly yellow and veined, sometimes full of black dots. Stamens numerous, usually indefinite, collected together at the base into small bundles (f. 102. *e.*), very rarely free, or monadelphous, with long filaments and yellow, minute, oscillatory anthers. Ovary 1, free. Styles numerous (f. 102. *a.* f. 103. *j.*), but sometimes joined into one. Stigmas simple, rarely capitate. Capsules many-valved (f. 103. *i.* f. 102. *a.*), many-celled; cells equalling the styles in number. Central placenta entire or many-parted, fixed to the inflexed margins of the valves. Seeds numerous, commonly terete, rarely flat. Integument double, both membranous. Embryo straight, with an inferior radicle, destitute of albumen. Herbs, shrubs, subshrubs and trees, beset with glands, and abounding in a yellow resinous juice, which is usually purgative or anthelmutic, and so very analogous to gamboge, that the juice of *Vismia Guianénsis* and several other species have received the name of American gamboge. Most of the *Hypericíneæ* are bitter and slightly astringent, whence they have been used as febrifuges. Leaves exstipulate, opposite, very rarely alternate, crenated, sessile, or on very short petioles, full of pellucid and black dots, seldom without, feather-nerved. Flowers terminal or axillary, stalked or sessile, leafy or nakedly-panicled, but usually bracteate. This order may be easily distinguished from the preceding orders in abounding in resinous juice. It differs from *Aurantiàceæ* in having opposite, simple leaves, and from *Guttífereæ* in the anthers being oscillatory, not adnate.

Synopsis of the genera.

Tribe I.

VISMIE'Æ. *Fruit baccate* (f. 102. *a.*). *Seeds terete. Flowers in leaflets, racemose or corymbose, distinct, terminal panicles. Shrubs with stalked leaves.*

1 VI'SMIA. Berry membranous. Styles 5 (f. 102. *a.*), crowned by 5 peltate stigmas. Stamens disposed in 5 bundles (f. 102. *e.*), each bundle alternating with a gland. Calyx 5-parted. Petals 5, usually villous within.

Tribe II.

HYPERI'CEÆ. *Fruit capsular. Seeds terete. Flowers terminal and axillary, corymbose. Shrubs and herbs usually with sessile leaves.*

2 ANDROSÆ'MUM. Capsule baccate, 1-celled. Calyx 5-parted. Petals 5. Styles 3. Stamens numerous, monadelphous at the base (D. C.) disposed in 3 sets (Smith).

3 HYPE'RICUM. Capsule membranous. Styles 3-5, variable in number. Stamens indefinite, rarely definite, disposed in 3-5 bundles at the base, rarely free. Petals 5. Sepals 5, unequal, more or less connected at the base.

4 ELO'DEA. Capsule partly 3-celled, many-seeded. Styles 3. Calyx 5-parted. Petals 5, with nectariferous claws. Stamens 9-15, growing in 3 parcels.

5 SARO'THRA. Capsule 3-valved, 1-celled, margins of the valves bearing the seeds. Stamens 5.6, free. Calyx 5-parted. Petals 5, narrow.

6 LANCRE'TIA. Calyx of 4-5 equal sepals. Petals 4-5. Stamens 10, free, 5 of which are opposite the petals and shorter. Styles 4-5.

7 A'SCYRUM. Calyx of 4 sepals, 2 outer ones small, 2 inner ones large. Petals 4. Stamens numerous, hardly connected at the base. Styles 1-3.

Tribe III.

EUCRYPHIE'A. *Fruit capsular* (f. 103. *i.*). *Seeds flat, winged. Styles* 3-12 (f. 103. *j.*). *Shrubs and trees with stalked leaves. Flowers axillary, solitary, or disposed in terminal cymes or panicles.*

8 CARPODÓNTOS. Sepals and petals 4. Styles 5-8. Capsule woody, with filiform placentas and boat-shaped cells. Ovary villous. Stamens numerous.

9 EUCRY'PHIA. Sepals and petals 5 (f. 103. *c.*). Styles 12 (f. 103. *j.*). Stamens numerous, rather connected at the base. Carpels boat-shaped, hanging by funicles (f. 103. *e.*).

10 ELIE'A. Sepals and petals 5. Stamens numerous, disposed in 3 bundles. Styles 3. Capsule 3-celled, 3-valved. Seeds 2 in each cell, fixed above the base of the central trigonal receptacle.

11 CRATO'XYLUM. Calyx 5-parted. Petals 5. Stamens numerous, collected into 3 bundles. Styles and stigmas 3. Capsule 3-celled, 3-valved, with a dissepiment in the middle of each valve.

12 HARO'NGA. Sepals and petals 5. Stamens 15, collected into 5 bundles. Fruit baccate, 5-celled; cells 2-3-seeded. Styles and stigmas 5.

Tribe I.

VISMIE'Æ (Chois. prod. hyp. 33.) Fruit a berry. Flowers in distinct, leafless, racemose or corymbose terminal panicles. Shrubs or trees with opposite, usually stalked leaves.

I. VI'SMIA (in honour of M. de Visme, a Lisbon merchant), Vand. in Rœm. script. hisp. p. 138. t. 7. f. 4. Chois. prod. hyp. 34. D. C. prod. 1. p. 542.

LIN. SYST. *Polyadélphia, Polyándria.* Calyx 5-parted. Petals 5, usually villous on the inside. Berry membranaceous. Styles 5 (f. 102. *a.*). Stigmas peltate. Stamens numerous, disposed into 5 bundles (f. 102. *e.*), opposite the petals, alternating with 5 glands or scales. Anthers small, roundish, 2-celled, bursting lengthwise. Seeds with a double covering.—Shrubs and trees, with quadrangular, opposite branches. Leaves entire, usually covered with rufescent down, and generally full of glandular and pellucid dots. Flowers disposed in terminal, branched panicles or cymes. Buds ovate or oblong. Flowers of all yellow or greenish. A resinous yellow juice flows from all parts of the plant when cut or broken, resembling gamboge.

1 V. GLA'BRA (Ruiz et Pav. syst. fl. per. p. 183.) branches

compressed; leaves elliptical-lanceolate, smooth; petioles short, compressed; buds globose; sepals obtuse, smooth; panicle loose. ♄. S. Native of Peru.

Smooth Wax-tree. Shrub 15 feet.

2 V. SESSILIFÒLIA (Pers. ench. 2. p. 86.) stem angular; leaves elliptical-lanceolate, acute, cordate at the base; petioles very short and thick; buds globose; calyx ovate-oblong; panicle multifid. ♄. S. Native of Guiana. Hypéricum sessilifòlium, Aubl. guian. 2. p. 787. t. 312. f. 2. The resinous juice which flows from all parts of the plant when broke or cut, is purgative in doses of 7 or 8 grains.

Sessile-leaved Wax-tree. Shrub 6 feet.

3 V. RETICULA'TA (Chois. prod. hyp. p. 34.) branches rufescent; leaves elliptical-oblong, very long, somewhat obtuse, rather cordate at the base, netted, rufescent; petioles very short; buds ovate-globose; calyx obtuse, villous on the outside. ♄. S. Native of Guiana. Hypéricum reticulàtum, Poir. dict. suppl. 3. p. 694.

Netted-leaved Wax-tree. Shrub 6 feet.

4 V. MACROPHY'LLA (H. B. et Kunth, nov. gen. amer. 4. p. 184.) branches smooth; leaves elliptical-oblong, acuminated, cordate, hairy beneath; petioles 8-lines long; calyxes clothed with rusty down. ♄. S. Native of South America on the banks of the river Cassiquiares.

Long-leaved Wax-tree. Tree 20 feet.

5 V. GUIANE'NSIS (Pers. ench. 2. p. 86.) stem quadrangular; leaves ovate-lanceolate or oblong, acuminate, dilated at the base, rufescent beneath, smooth; petioles short; calyxes ovate, obtuse, tomentose, with ciliated margins; flowers corymbose; stamens numerous; berry ovate. ♄. S. Native of Guiana, Cayenne, and Brazil. Hypéricum Guianénse, Aubl. guian. 2. p. 784. t. 311. The whole plant abounds in a thick, viscid, saffron-coloured juice. Leaf-bud rusty tomentose. Androphorus woolly.

Var. β, glabràta (D. C. prod. 1. p. 542.) the whole plant is less rufescent, but whiter; leaves more acuminated; buds more globose. Perhaps this may be a distinct species. Hypéricum baccíferum, Marcgr. bras. 96. f. 1. Moc. et Sesse, fl. mex. icon. ined. ♄. S. Native of Mexico and Surinam. This is also abundant in yellow viscid juice.

Guiana Wax-tree. Fl. July, Oct. Clt. 1824. Shrub 8 ft.

6 V. LONGIFÒLIA (St. Hil. fl. bras. 1. p. 326.) leaves usually oblong and acuminated, smoothish above, puberulous beneath, as well as furnished with black dots, with the nerves rusty beneath and pubescent; calyx tomentose; stamens 20-30; androphorus smooth; styles smooth. ♄. S. Native of Brazil in the province of Minas Geraes near Villa Rica. V. laccífera, Mart. Leaf-bud rusty-tomentose. Petals whitish-green.

Long-leaved Wax-tree. Fl. Jan. Shrub 5 feet.

7 V. RUFE'SCENS (Pers. ench. 2. p. 86.) branches quadrangular; leaves oblong-lanceolate, with a very long acumen, tapering to the base, rather hairy beneath, smooth above; petioles short, channelled; calyx acute, smooth. ♄. S. Native of Guiana. Chois. prod. hyp. p. 35. t. 1. (f. 102.)

FIG. 102.

Rufescent Wax-tree. Shrub 12 feet.

8 V. MICRA'NTHA (Mart. trav. St. Hil. fl. bras. 1. p. 327.) leaves usually lanceolate, acuminated, smooth above, rusty puberulous beneath, and with black dots; calyx smoothish; stamens about 15; styles pilose. ♄. S. Native of Brazil in the province of Minas Geraes. Leaf-buds rusty. Petals greenish.

Small-flowered Wax-tree. Fl. Jan. March. Shrub 6 to 8 feet.

9 V. DEALBA'TA (H. B. et Kunth, nov. gen. amer. 4. p. 184. t. 454.) branches quadrangular, clothed with a whitish down; leaves ovate, acuminated, rounded and cordate at the base, clothed beneath with white down; petiole 7 or 8 lines long, furrowed; calyx clothed with rusty down; ovary somewhat globose-ovate. ♄. S. Native of South America on the banks of the rivers Niger and Cassiquiares.

Whitened-leaved Wax-tree. Shrub 6 feet.

10 V. MAGNOLIÆFÒLIA (Nees ex Schlecht. Linnæa. 3. p. 118.) calyx opaque, vittate; petals somewhat 5-striped; bundles of stamens containing about 30; styles long; leaves ovate, rather cuneated at the base, full of pellucid dots, canescent. ♄. S. Native of Brazil. This species differs from *V. dealbàta* in the leaves being cuneated at the base, not rounded and cordate.

Magnolia-leaved Wax-tree. Shrub 6 feet.

11 V. FERRUGI'NEA (H. B. et Kunth, nov. gen. amer. 4. p. 183.) branches quadrangular, and are as well as calyxes clothed with rusty down; leaves elliptical-oblong, acuminated, rather shining above, clothed with very fine golden down beneath; petioles 6 or 8 lines long, channelled; ovary oblong. ♄. S. Native of South America on the banks of the river Orinoco.

Rusty Wax-tree. Shrub 12 feet.

12 V. LAURIFO'RMIS (Chois. prod. hyp. p. 35.) leaves ovate, acute, smooth, concave; corolla length of calyx; bundles of stamens like hair-pencils; styles filiform. ♃ ? S. Native of New Granada. Hypéricum lauriförme, Lam. dict. 4. p. 152.

Laurel-shaped-leaved Wax-tree. Pl. 2 feet.

13 V. BRASILIE'NSIS (Chois. prod. hyp. p. 35. t. 2.) stem terete; branches somewhat compressed at the apex; leaves ovate-lanceolate, acute, short-acuminated, rufescent beneath, smooth above; petioles channelled; flowers corymbose; berry globose. ♄. S. Native of Brazil.

Brazilian Wax-tree. Fl. July, Oct. Clt. 1824. Shrub 8 ft.

14 V. DECI'PIENS (Cham. et Schlecht. Linnæa. 3. p. 116.) calyx opaque, vittate; petals with 9 stripes; bundles of stamens containing about 30, a little longer than the calyx; styles long; leaves elliptic-lanceolate or ovate, full of pellucid dots, clothed with fine tomentum, at length canescent. ♄. S. Native of Brazil. This species differs from *V. Brasiliénsis* in the styles being long.

Var. α, laurifòlia (Cham. et Schlecht. l. c.) leaves elliptic-lanceolate, tapering to both ends, with a bluntish acumen, older leaves not canescent. ♄. S. Sýmplocos pentágyna, Spreng. syst. 3. p. 340.

Var. β, pyrifòlia (Cham. et Schlecht. l. c.) leaves ovate, or elliptical, rounded at the base, with a short, blunt, oblique acumen at the apex.

Deceiving Wax-tree. Shrub 4 feet.

15 V. PARVIFLÒRA (Cham. et Schlecht. Linnæa. 3. p. 119.) calyx 3-nerved, with a few pellucid dots; bundles of stamens triandrous, shorter than the calyx; styles long; leaves elliptical, full of black dots, and with a few hairs. ♄. S. Native of Brazil.

Small-flowered Wax-tree. Shrub 6 feet.

16 V. CAYENNE'NSIS (Pers. ench. 2. p. 86.) stem terete; leaves ovate-lanceolate, acuminated, with black dots above; petioles channelled; calyx obtuse; buds globose; panicles few-flowered. ♄. S. Native of Cayenne. Hypéricum Cayennénse, Lin. amœn. 8. p. 321. Petals white.

Cayenne Wax-tree. Shrub 10 feet.

17 V. ACUMINA'TA (Pers. ench. 2. p. 86.) leaves hispid beneath, hardly dotted, acuminated at the apex; buds small, ovate;

calyx somewhat hairy; berry globose; branches compressed. ♄ .S. Native of Guiana. Hypéricum acuminàtum, Lam. dict. 4. p. 150.

Var. β, caparòsa (D. C. prod. 1. p. 543.) branches tetragonal; leaves much more hispid on both surfaces. V. caparòsa, H. B. et Kunth, nov. gen. amer. 4. p. 182.

Acuminated-leaved Wax-tree. Tree 25 feet.

18 V. Guinee'nsis (Chois. prod. hyp. p. 36.) stem round; branches divaricating; leaves ovate-lanceolate, acute, soft, and dotted beneath; petioles thin; panicles spreading; calyx ovate-lanceolate; corolla smooth. ♄ . S. Native of Guinea in low lands, near Freetown, Sierra Leone. Hypéricum Guineénse, Lin. amœn. 8. p. 32. t. 8. f. 1.

Guinea Wax-tree. Fl. Feb. April. Shrub 4 feet.

19 V. latifòlia (Chois. prod. hyp. p. 36.) arborescent; leaves ovate-oblong, acuminated, somewhat cordate, full of black dots, and covered beneath with short rufescent down, green above; petioles short, thick; calyx irregularly vittate; bundles of stamens containing about 15; styles short, thick. ♄ . S. Native of Guiana. Hypéricum latifòlium, Aubl. guian. 2. p. 787. t. 312. f. 1. Petals dotted.

Broad-leaved Wax-tree. Shrub 6 feet.

† *Species little known, or doubtful whether they belong to this genus.*

20 V. tomentòsa (Ruiz et Pav. syst. fl. per. 183.) leaves ovate, acute, downy beneath; racemes terminal. ♄ . S. Native of Peru.

Tomentose-leaved Wax-tree. Shrub.

21 V.? petiola'ta (Chois. prod. hyp. p. 36.) flowers trigynous; leaves ovate, downy beneath; stem tetragonal, compressed. ♄ . S. Native of Brazil. Hypéricum petiolàtum, Lin. spec. 1102.

Stalked-leaved Wax-tree. Shrub 6 feet,

22 V.? arbore'scens (Chois. prod. hyp. p. 36.) flowers trigynous; leaves elliptical, a little acuminated; racemes branched; calyxes and corollas smooth; fruit capsular. ♄ . S. Native of the East Indies. Hypéricum arboréscens, Vahl. symb. 2. p. 86.

Arborescent Wax-tree. Shrub 10 feet.

Cult. The species of *Vismia* will thrive well in a mixture of loam and peat, and young cuttings will root in sand under a hand-glass, in heat.

Tribe II.

HYPERI'CEÆ (plants agreeing with *Hypéricum* in important characters). Chois. prod. hyp. 37. Fruit a capsule. Flowers terminal or axillary, usually corymbose.—Herbs or subshrubs, usually with sessile leaves.

II. ANDROSÆ'MUM (from *ανερ ανδρος, aner andros,* a man, and *αιμα, aima,* blood; the fresh capsules crushed between the fingers bring out a blood-coloured juice.) All. pedm. no. 1440. Chois. prod. hyp. 37. D. C. prod. 1. p. 543.

Lin. syst. *Polyadélphia, Polyándria.* Capsule baccate, usually 1-celled. Calyx 5-parted, with unequal lobes. Petals 5. Styles 3. Stamens numerous, disposed in 3 sets (Smith).—A suffruticose plant, with sessile leaves, and terminal, stalked flowers.

1 A. officina'le (All. pedm. no. 1440.) ♄ . H. Native of the north of Europe, Caucasus, and Greece, in humid places. In Britain in moist woods, Hampstead, Highgate, Norwood, near Berkhamstead, and in Ashridge woods, Norfolk, Worcestershire, Oxfordshire, and Cornwall. In Scotland, as in the woods of Inverary, and at Loch Ransa. Hypéricum Androsæ'mum, Lin. spec. Smith, engl. bot. 1225.—Blackw. t. 94. Stem 2-edged. Flowers yellow. Fruit an ovate capsule, assuming the appearance of a berry; at first yellowish-green, then red or brownish-purple, and lastly almost black when ripe. The juice expressed from the leaves is claret-coloured. The leaves were formerly applied to fresh wounds, and hence the French name it *la toute saìne,* and the English *tutsan.* It is also called *park-leaves,* from its frequently being found in parks. In Italian, Spanish, and Portuguese, it is *androsemo;* in German *konrad-skraut* or *standenartige johanniskraut;* in Dutch *groobladig hypéricum,* or *mansbloed.* The leaves when bruised have an aromatic scent.

Officinal or Common Tutsan. Fl. July. Sept. Britain. Shrub 3 feet.

Cult. This plant will grow well under shrubs or trees. It is easily increased by dividing the plants at the root early in spring, or by seeds.

III. HYPE'RICUM (according to Linnæus this name is said to be derived from *υπερ, uper,* under, and *εικων, eicon,* an image; that is to say, the superior part of the flower represents a figure). Lin. gen. no. 902. Juss. gen. p. 255. Chois. prod. hyp. p. 37. D. C. prod. 1. p. 545.

Lin. syst. *Polyadélphia, Polyándria.* Capsule membranaceous. Stamens numerous, free or joined at the base into 3 or 5 bundles. Petals 5. Sepals 5, more or less connected at the base, unequal, rarely equal. Styles 3-5, rarely connate in one, permanent. Capsule 1 or many-celled, many-seeded, 3-5-valved. Integument of seed double. Albumen none. Embryo with the radicle situated at the umbilicus, and with semi-cylindrical cotyledons.—Herbs or under-shrubs. Leaves opposite, sessile or sub-sessile, usually full of pellucid and black dots on their edges, lodging an essential oil. Flowers variously disposed, solitary, tern, cymose, corymbose panicled, rarely umbellate, usually yellow.

Sect. I. Ascyre'ia (from *α* priv. and *σκυρος,* hard; that is to say, plants soft to the touch). Chois. prod. hyp. p. 38. Sepals connected at the base and unequal. Stamens numerous. Styles 3-5. Flowers commonly terminal, large, few, sub-corymbose.

* *Styles commonly 3.*

1 H. ela'tum (Ait. hort. kew, ed. 2. vol. 3. p. 104.) younger stems reddish; leaves ovate-oblong, acute, dilated at the base, somewhat emarginate, with the margins somewhat revolute; flowers corymbose; peduncles bibracteate; sepals ovate-oblong. ♄ . S. Native of North America. Juss. ann. du. mus. 3. p. 162. t. 17. Wats. dend. brit. t. 85.

Tall St. John's-wort. Fl. July, Aug. Clt. 1762. Shrub 5 ft.

2 H. frondòsum (Mich. fl. bor. amer. 2. p. 81.) branches 2-edged; leaves ovate-elongated, blunt at the apex, narrowed at the base; flowers large, usually solitary; calyx equalling or exceeding the petals in length; styles united together. ♃. H. Native of North America on shady rocks in Kentucky and Tennessee.

Frondose St. John's-wort. Fl. July, Aug. Clt. 1806. Pl. 5 ft.

3 H. sessiliflòrum (Willd. herb. ex Spreng. syst. 3. p. 346.) branches round; leaves stem-clasping, cordate-oblong, without nerves, dotted; corymb terminal; flowers nearly sessile; sepals oblong, acute, leafy, much longer than the corolla; styles joined. ♃. H. Native of North America.

Sessile-flowered St. John's-wort. Pl. 3 feet.

4 H. amœ'num (Pursh. fl. amer. sept. 2. p. 375.) branches 2-edged; leaves oblong-elliptical, bluntish at the apex, but tapering to the base, with curled revolute margins; flowers terminal, usually solitary; sepals ovate, acuminated, never equal in length with the corolla; styles connected together. ♃. H. Native of South Carolina and Georgia. Flowers large, bright yellow, with red ovaries.

Pleasing St. John's-wort. Fl. July, Aug. Clt. 1812. Pl. 2 ft.

5 H. GRANDIFLÒRUM (Chois. prod. hyp. p. 38. t. 3.) stem round, reddish; leaves ovate-oblong, cordate, somewhat stem-clasping, acute at the apex, netted with pellucid veins; flowers corymbose; peduncles bibracteate; calyx acutish, reflexed upon the peduncle after flowering, much shorter than the corolla. ♄. G. Native of Teneriffe. H. Canariénse, Willd. not of Lin.

Great-flowered St. John's-wort. Fl. July, Aug. Shrub 3 ft.

6 H. HIRCI'NUM (Lin. spec. 1103.) branches winged; leaves somewhat emarginate at the base, dilated, sessile, acute at the apex, ovate-lanceolate, with glandular margins; peduncles bibracteate; stamens exceeding the corolla in length; seeds 2, appendiculated. ♄. H. Native of the regions of the Mediterranean. Schkuhr. handb. 3. t. 213. f. 3. Wats. dend. brit. t. 86. This plant when bruised has a very disagreeable smell.

Var. β, obtusifòlium (D. C. prod. 1. p. 544.) leaves blunter. ♄. H. Native of Corsica on humid rocks in the mountains.

Var. γ, mìnus (Wats. dend. brit. t. 87.) plant much smaller.

Goat-scented St. John's-wort. Fl. July, Sept. Clt. 1640. Shrub 2 to 4 feet.

7 H. INODÒRUM (Willd. spec. 3. p. 1449.) stem suffruticose, round; branches somewhat winged; leaves ovate, very blunt; calyx lanceolate, acute; peduncles sometimes bibracteate; stamens equal in length with the corolla. ♄. H. Native of Greece and the Levant. Herb scentless.

Scentless St. John's-wort. Shrub 3 feet.

8 H. FOLIÒSUM (Ait. hort. kew, ed. 1. vol. 3. p. 104.) branches winged; leaves sessile, oval-oblong, rather acute, finely perforated; calyx lanceolate, caducous. ♄. G. Native of the Azores.

Leafy St. John's-wort. Fl. Aug Clt. 1778. Shrub 2 feet.

9 H. FLORIBU'NDUM (Ait. hort. kew, ed. 1. vol. 3. p. 104.) stem round; leaves sessile, lanceolate, numerous, without dots; peduncles dilated and somewhat compressed towards the apex; calyx obtuse; corolla and stamens marcescent. ♄. G. Native of the Canary Islands. H. frutéscens, &c. Comm. hort. amst. p. 137. t. 68. Sepals ciliated.

Bundle-flowered St. John's-wort. Fl. Aug. Clt. 1779. Shrub 3 feet.

10 H. MILLE'PORUM (Willd. herb. ex Spreng. syst. 3. p. 343.) branches round; leaves on short petioles, lanceolate, tapering to both ends, nerved, full of pellucid dots, fringed with glandular teeth; sepals lanceolate, fringed with glandular teeth; flowers corymbose. ♄. G. Native of Teneriffe.

Thousand-pored-leaved St. John's-wort. Shrub 2 feet.

11 H. OLY'MPICUM (Lin. spec. 1102.) stem round; leaves elliptical-lanceolate, rather acute, full of pellucid dots; calyx ovate, acute; peduncles bibracteate; corolla and stamens marcescent. ♄. G. Native of mount Olympus and of China. Smith, exot. bot. 2. p. 71. t. 96. Sims, bot. mag. t. 1867. Leaves glaucous, sessile.

Olympian St. John's-wort. Fl. July, Sept. Clt. 1706. Shrub 1 to 2 feet.

12 H. CANARIE'NSE (Lin. syst. 575.) stem obsoletely quadrangular; branches compressed; leaves ovate-lanceolate, acute; calyx ovate, obtuse; styles 3-4, diverging. ♄. G. Native of the Canary Islands. Lodd. bot. cab. 953.

Var. β, triphýllum (D. C. prod. 1. p. 544.) leaves tern.

Var. γ, salicifòlium (D. C. prod. 1. p. 544.) leaves linear-lanceolate, longer.

Canary-Island St. John's-wort. Fl. July, Sept. Clt. 1699. Shrub 2 feet.

* * *Styles commonly 5.*

13 H. CHINE'NSE (Lin. amœn. 8. p. 323.) stem round; leaves elliptical, obtuse, with a few black dots; peduncles bibracteate; calyx oblong, obtuse, beset with black dots; styles connected together. ♄. G. Native of the East Indies, and of the Cape of Good Hope? H. monógynum, Mill. illust. 151. f. 2. H. aúreum, Lour.

Chinese St. John's-wort. Fl. March, Sept. Clt. 1753. Shrub 3 feet.

14 H. MONO'GYNUM (Lin. spec. 1102. Blum. bijdr. ex Schlecht. Linnæa. 1. p. 667.) stem terete, shrubby; leaves oblong-oval, recurved at the base, somewhat auricled, without dots; peduncles sub-corymbose, leafy, bibracteate; bracteas nearly opposite; sepals lanceolate, acutish; styles 5, coadunate, equal in length to the stamens and corolla. ♄. G. Native of Japan and China. Curt. bot. mag. 334. Flowers yellow.

One-styled St. John's-wort. Shrub 3 feet.

15 H. CORDIFÒLIUM (Chois. mss. D. C. prod. 1. p. 545.) stem round; leaves elliptical, acute, coriaceous, smooth, somewhat stem-clasping, without dots; flower-bearing branches crowded, leafy below; bracteas ovate-cordate, acute; sepals ovate, mucronate, without dots; petals oblong, unequal-sided, obliquely mucronulate; stamens short; styles unconnected, scarcely longer than the corolla. ♄. G. Native of Nipaul at Thankot, and at Narain-hetty. H. bracteàtum and Lungùsum, Hamilt. mss. in D. Don, prod. p. 217. It is called *Lungusu* and *Ricanava* in the Nawar language.

Heart-leaved St. John's-wort. Fl. April, Oct. Clt. 1825. Shrub 2 feet.

16 H.? ALTERNIFÒLIUM (Vahl. symb. 2. p. 85. t. 42.) branches round; leaves alternate, lanceolate; peduncles tribracteate; styles reflexed.—Native of the East Indies.

Alternate-leaved St. John's-wort. Shrub?

17 H. PYRAMIDA'TUM (Ait. hort. kew, ed. 1. vol. 3. p. 103.) stem winged; leaves stem-clasping, oblong-lanceolate, acute, with revolute margins; peduncles short, thick; sepals rather acute; styles 5-7, short, thick, connected together at the base. ♃. H. Native of North America in Canada? Vent. malm. t. 118. H. amplexicaûle, Lam. dict. 4. p. 14.

Pyramidal-flowered St. John's-wort. Fl. July, Aug. Clt. 1764. Pl. 4 feet.

18 H. ROSTRA'TUM (Rafin. fl. lud. p. 87.) stem frutescent, 2-edged; leaves sessile, ovate, acute at both ends, with revolute, dotted margins; corymbs axillary and terminal; calyx bibracteate; ovaries beaked; styles 5. ♃. H. Native of North America in Louisiana.

Beaked-ovaried St. John's-wort. Fl. July, Aug. Pl. 2 feet.

19 H. A'SCYRON (Lin. spec. 1102.) stem tetragonal, simple; leaves stem-clasping, lanceolate, acute, full of pellucid dots; flowers few; sepals blunt; styles connected together at the base. ♃. H. Native of Siberia.—Gmel. fl. sib. 4. p. 178. t. 69. Flowers very large.

Soft St. John's-wort. Fl. July, Sept. Clt. 1774. Pl. 3 feet.

20 H. ASCYROI'DES (Willd. spec. 3. p. 1443.) stem simple, winged at the base, and tetragonal towards the top; leaves oblong-lanceolate, acute; sepals oblong-lanceolate; styles free, length of the stamens. ♃. H. Native of North America in Canada and the western parts of New York. H. macrocárpum, Mich. fl. bor. amer. 2. p. 82. Flowers very large.

Ascyron-like St. John's-wort. Fl. July, Aug. Clt. 1812. Pl. 3 feet.

21 H. LANCEOLA'TUM (Lam. dict. 4. p. 145.) stem round; leaves lanceolate, with black dotted margins, acutish at the apex; flowers solitary; sepals blunt; styles connected together. ♄. G. Native of the Island of Bourbon and Caffre Land. Chois. prod. hyp. p. 41. exclusive of the synonyme of Jacq.

Lanceolate-leaved St. John's-wort. Shrub 3 feet.

22 H. ANGUSTIFÒLIUM (Lam. dict. 4. p. 145.) stem round; leaves linear-lanceolate, approximate, with revolute margins,

without dots; flowers large, solitary; sepals acutish; styles connected together. ♄. S. Native of the Island of Bourbon.

Narrow-leaved St. John's-wort. Shrub 3 feet.

23 H. PA'TULUM (Thunb. jap. p. 295. t. 17.) stem round, purplish; leaves ovate-lanceolate, acute, tapering to the base, with revolute margins, without dots; flowers corymbose; styles recurved at the apex, scarcely longer than the stamens; peduncles bibracteate; sepals suborbicular, very obtuse. ♄. H. Native of Japan and Nipaul.

Var. β, attenuàtum (D. C. prod. 1. p. 545.) all parts of the shrub are shorter, slenderer, and more crowded.

Spreading St. John's-wort. Fl. June, Aug. Clt. 1823. Shrub 6 feet.

24 H. JAVA'NICUM (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 667.) stem terete, shrubby; leaves membranous, ovate-lanceolate, bluntish, tapering a little to the base, with reflexed margins, glaucous beneath, full of fine pellucid dots; flowers corymbose; pedicels bibracteate; bracteas linear-awl-shaped; sepals lanceolate, acuminated; styles exceeding the stamens, but shorter than the corolla. ♄. S. Native of Java. Allied to *H. pàtulum*. Flowers yellow.

Java St. John's-wort. Shrub.

25 H. CORIA'CEUM (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 667.) stem terete, shrubby; branches fastigiate; leaves coriaceous, crowded, ovate-lanceolate, obtuse, glaucous beneath, full of pellucid dots; peduncles tern, 1-3-flowered, bracteate in the middle; bracteas lanceolate; sepals oval, obtuse or acute; styles 5, exceeding the stamens, but equal with the corolla. ♄. S. Native of Java. Allied to *H. Javánicum*.

Coriaceous-leaved St. John's-wort. Shrub 6 feet.

26 H. CE'RNUUM (Roxb. hort. beng. p. 59. D. Don, prod. fl. nep. p. 218.) branches round; leaves elliptical-oblong, mucronulate, glaucous; peduncles solitary or in threes; sepals elliptical, acute; petals unequal-sided, oblong, obtuse; styles and stamens very long. ♄. G. Native of Sirinagur, where it is called *Peoalee*. Branches purplish, suffused, with glaucous pollen. Flowers very large.

Drooping St. John's-wort. Shrub 3 feet.

27 H. KALMIA'NUM (Lam. dict. 4. p. 148.) branches tetragonal; leaves linear-lanceolate; flowers 3-7, in a terminal corymb; sepals lanceolate, bluntish. ♄. H. Native of North America in Pennsylvania and Virginia.

Kalm's St. John's-wort. Fl. June, July. Clt. 1759. Shrub 2 to 4 feet.

28 H. VENÒSUM (Lam. dict. 4. p. 146.) stem tetragonal, reddish, simple; leaves ovate-oblong, stem-clasping, bluntish; flowers large, terminal; peduncles bracteate; sepals ovate-roundish; styles exceeding the stamens in length. ♄. G. Native? Perhaps this plant is sufficiently distinct from *H. calycìnum*.

Veiny St. John's-wort. Shrub 1 foot?

29 H. TRIFLÒRUM (Blum. bijdr. ex Schlecht. Linnæa. 1. p. 667.) stem terete, shrubby; leaves membranous, ovate-oblong, bluntish, full of pellucid dots, younger ones somewhat stem-clasping at the base; peduncles usually tern, 1-flowered, terminal, with 2 lanceolate bracteas in the middle; sepals oval-oblong, acute; styles 5, exceeding the stamens, but shorter than the corolla. ♄. S. Native of Java. Allied to *H. Leschenaúltii*.

Var. β, angustàtum (Blum. l. c.) leaves and sepals oblong-lanceolate.

Three-flowered St. John's-wort. Shrub.

30 H. LESCHENAU'LTII (Chois. mss. D. C. prod. 1. p. 545.) stem round, suffruticose: leaves oblong-elliptical, obtuse, full of pellucid dots; sepals ovate-lanceolate, acute; stamens very short; styles exceeding the stamens in length, but shorter than the corolla. ♄. S. Native of Java. Very like *H. oblongifòlium*.

Leschenault's St. John's-wort. Shrub 2 feet.

31 H. URA'LUM (Hamilt. mss. in D. Don, prod. nep. p. 218.) branches compressed, 2-edged; leaves elliptical, mucronulate, smooth, shining; flowers terminal, somewhat corymbose; sepals oval, very blunt; petals orbicular; styles shorter than the stamens. ♄. H. Native of Nipaul at Narainhetty. Called *Urala Swa* in the Nawar language. Sims, bot. mag. t. 2375.

Urala St. John's-wort. Fl. July, Sept. Clt. 1823. Shrub 2 ft.

32 H. OBLONGIFÒLIUM (Chois. prod. hyp. p. 42. t. 4.) stem round; branches compressed; leaves elliptical-lanceolate, crowded, with the margins a little revolute, full of fine pellucid dots; sepals oblong, bluntish; styles exceeding the stamens in length. ♄. G. Native of the East Indies and Nipaul.

Oblong-leaved St. John's-wort. Fl. July, Sept. Clt. 1823. Shrub 2 feet.

33 H. CALYCI'NUM (Lin. mant. 106.) stem tetragonal, dwarf; leaves ovate, coriaceous, broad, full of pellucid dots; flowers large, terminal, solitary; sepals large, obovate, spreading; capsule nodding. ♄. H. Native of the Levant and on Mount Olympus, &c. In Ireland 3 miles from Cork, on the way to Bandon. Wood above Largs, on the western coast of Scotland. Curt. bot. mag. t. 146. Smith, engl. bot. t. 2017. Jacq. fragn. 10. t. 6. f. 4. Root creeping. This plant is a great ornament to shrubberies and parks, and excellent as a shelter for game.

Var. β, acutifòlium (D. C. prod. 1. p. 546.) the leaves at the base of the branches are more acute.

Large-calyxed St. John's-wort or Tutsan. Fl. June, Sept. Ireland. Shrub 1 foot.

34 H. BALEA'RICUM (Lin. spec. 1101.) stem quadrangular, warted; leaves ovate, obtuse, rather stem-clasping. ♄. F. Native of the island of Majorca. Curt. bot. mag. t. 137. Leaves small, glaucous.

Majorca St. John's-wort. Fl. March, Sept. Clt. 1714. Shrub 1 to 2 feet.

SECT. II. TRIDE'SMOS (from *τρεις, treis*, three, and *δεσμε, desme*, a bundle; in allusion to the stamens being disposed into 3 bundles). Chois. mss. D. C. prod. 1. p. 546. Calyx of 5 equal, entire sepals. Stamens connected together in 3 bundles, each bundle having the appearance of a hair-pencil. Styles 3. —An undershrub, with axillary, long stalked flowers. Perhaps a species of *Elòdea* or *Elièa*.

35 H. BIFLÒRUM (Lam. dict. 4. p. 170.) stem smooth, roundish, grey; leaves ovate-elliptical, smooth, acutish, stalked, veiny; sepals ovate, blunt; styles equal in length with the stamens. ♄. G. Native of China near the Straits of Bouton. H. Chinénse, Retz, obs. bot. 5. p. 27.

Two-flowered St. John's-wort. Shrub 2 feet.

SECT. III. PERFORA'RIA (from *perforatus*, perforated; because the leaves are full of pellucid dots, which gives them the appearance of being perforated). Chois. prod. hyp. p. 44. D. C. prod. 1. p. 546. Calyx of 5 equal sepals, toothed in some, but entire in others, or with glandular teeth, connected at the base. Stamens numerous, free or disposed in 5 sets. Styles commonly 3. —Herbs or undershrubs. Flowers axillary, or in terminal panicled corymbs. Leaves rarely linear.

* *Sepals entire.*

36 H. MICRA'NTHUM (Chois. prod. hyp. p. 44. t. 5.) stem round, dotted, purplish; branches straight; leaves oblong, obtuse, full of black dots; flowers crowded, terminal; calyx small, obtuse; corolla full of black dots, as well as the anthers. ♃. H. Native of Carolina.

Small-flowered St. John's-wort. Pl. 1 foot.

37 H. ANGULÒSUM (Mich. fl. bor. amer. 2. p. 78.) stem

quadrangular, erect; leaves distant, elongated, ovate, stem-clasping, acute, without dots, margins sinuated; flowers axillary, solitary; sepals lanceolate, acute; styles connected together. ♃. B. H. Native of North America in bogs and cedar swamps in New Jersey and Carolina. Flowers beautiful copper-coloured in terminal dichotomous panicles.

Angular-stemmed St. John's-wort. Fl. June, July. Clt. 1812. Pl. 1 foot.

38 H. uliginòsum (H. B. et Kunth, nov. gen. amer. 5. p. 194.) stem herbaceous, straight, tetragonal; leaves oblong, acutish, upper ones lanceolate, dotted; sepals linear-lanceolate, acuminate; styles 3-4; stigmas capitate. ♃. B. S. Native of South America near La Vente Grande of Caraccas.

Var. β, multiflòrum (D. C. prod. 1. p. 547.) flowers smaller and more copious. ♃. B. S. Native of South America on mount Saraguru near Loxa.

Bog St. John's-wort. Fl. July. Pl. 1 foot.

39 H. puncta'tum (Lam. dict. 4. p. 164.) stem round, full of black dots; leaves ovate-lanceolate, acutish, stem-clasping, also full of black dots; flowers corymbose; sepals lanceolate, and are as well as the corolla full of black dots. ♃. H. Native of North America in shady woods from New England to Carolina, particularly in the range of the Alleghany mountains. H. maculàtum, Walt. fl. carol. 189. H. corymbòsum, Willd. spec. 3. p. 1457. Flowers pale-yellow, smaller than those of *H. perforàtum*. Styles 3.

Dotted St. John's-wort. Fl. June, Aug. Clt. 1823. Pl. 1½ ft.

40 H. philonòtis (Cham. et Schlecht. Linnæa. 4. p. 218.) smooth, full of black dots; stem 4-winged or 4-angled, terete at the base; floriferous branches compressed, 2-edged; leaves oblong, 3-nerved, quite entire; floral leaves minute, hardly equal with the pedicels; flowers minute, pentandrous, and trigynous; sepals acute, entire; styles apiculate, pustulate. ♃. F. Native of Mexico near Jalapa. Styles purplish-brown. Petals yellow.

Water-loving St. John's-wort. Pl. ½ to 1 foot.

41 H. formòsum (H. B. et Kunth, nov. gen. amer. 5. p. 196. t. 460.) stem round, smooth, without dots; leaves ovate-oblong, blunt, somewhat stem-clasping, dotted beneath; flowers corymbose; sepals ovate-lanceolate, and petals obovate-cuneated, both covered with glandular dots. ♃. F. Native of South America near Pazcuaro. Scarcely distinct from *H. punctàtum*.

Beautiful St. John's-wort. Pl. 1 foot.

42 H. dolabrifórme (Vent. hort. cels. p. 45.) stem erect, purple; leaves linear-lanceolate, reflexed, full of pellucid dots; flowers corymbose; peduncles dichotomous; sepals unequal, acute, reflexed, dotted, with revolute edges. ♃. H. Native of North America on the dry hills of Kentucky. Flowers golden-yellow. Petals hatchet-shaped. Styles 3.

Hatchet-shaped-petalled St. John's-wort. Fl. June, July. Clt. 1821. Pl. 1½ foot.

43 H. prate'nse (Cham. ex Schlecht. Linnæa. 4. p. 218.) plant branched, smooth, but with black dots; stem tetragonal, rather winged; leaves erect, narrow, linear or oblong, tapering to the apex, with reflexed or revolute margins, floral ones or bracteas awl-shaped; stamens 20-30, icosandrous; flowers trigynous. ♃. F. Native of Mexico at Jalapa.

Meadow St. John's-wort. Pl. 2 feet.

44 H. colli'num (Cham. et Schlecht. in Linnæa. 4. p. 219.) smooth; stem purplish, terete, branched, or simple; branches forming a cymose panicle; leaves loose, obovate, rounded at the apex, cuneate at the base, full of pellucid dots; flowers pedicellate, icosandrous and trigynous; sepals oblong, obtuse, full of pellucid dots, and with a few black glands; capsule egg-shaped, acute, twice the length of the calyx. ♃. F. Native of Mexico.

Hill St. John's-wort. Pl. 1½ foot.

45 H. cistifòlium (Lam. dict. 4. p. 158.) stem angular; leaves ovate-oblong, acutish, stem-clasping, full of black dots beneath, with revolute edges; flowers disposed in dichotomous corymbs; sepals ovate; styles connected together. ♃. H. Native of South America.

Cistus-leaved St. John's-wort. Fl. June, July. Pl. 1 foot.

46 H. songa'ricum (Ledeb. ex Spreng. syst. append. p. 297.) stem compressed; leaves elliptical, cordate, obtuse, glaucous, with pellucid dots; sepals acuminated. ♃. H. Native of the Kirghisian Steppe in Siberia.

Soongarian St. John's-wort. Pl. 1 foot.

47 H. densiflòrum (Pursh, fl. sept. amer. 2. p. 376.) plant very branchy; branches roundish; leaves linear-lanceolate, bluntish, tapering to the base; panicle terminal, compound, dichotomous, dense-flowered; flowers solitary, pedicelled; sepals very short, ovate, deciduous; styles connected together. ♄. H. Native of North America on the dry ridges and savannahs of the Virginian mountains.

Dense-flowered St. John's-wort. Fl. June, Jul. Shrub 2 feet.

48 H. procu'mbens (Mich. fl. bor. amer. 2. p. 81.) stem procumbent, somewhat tetragonal; leaves linear-lanceolate, rather blunt, with revolute edges, full of pellucid dots; panicle terminal, dichotomous: sepals oblong-lanceolate, acute; styles connected together. ♃. H. Native of North America on the sunny hills of Kentucky. Calyx as large as corolla.

Procumbent St. John's-wort. Fl. July, Aug. Clt. 1822. Pl. procumbent.

49 H. rosmarinifòlium (Lam. dict. 4. p. 159.) stem round, erect; leaves blunt, stem-clasping, ovate, with revolute edges; sepals linear, obtuse, dotted; styles connected together. ♄. H. Native of Carolina.

Rosemary-leaved St. John's-wort. Fl. July, Aug. Clt. 1812. Shrub 2 feet.

50 H. virga'tum (Lam. dict. 4. p. 158.) stem straight, quadrangular; leaves ovate-lanceolate, stem-clasping, full of black dots; panicle few-flowered, dichotomous; sepals lanceolate; styles 2-3; stigmas capitate. ♃. H. Native of North America. Leaves with revolute margins.

Twiggy St. John's-wort. Fl. Ju. Aug. Clt. 1820. Pl. 1½ ft.

51 H. hedyotifòlium (Poir. suppl. dict. 3. p. 700.) stem straight, quadrangular; leaves sessile, decussate, lanceolate, acutish, pressed to the stem, covered with black dots beneath; sepals linear-lanceolate, full of black dots; styles 3-4, stigmas capitate. ♃. H. Native of North America.

Hedyotis-leaved St. John's-wort. Fl. Ju. Aug. Pl. 1½ foot.

52 H. myrtifòlium (Lam. dict. 4. p. 180.) stem round; leaves ovate-cordate, stem-clasping, or lanceolate-cuneated, with revolute edges; flowers in dichotomous cymes; sepals unequal, ovate, exceeding the corolla in length; styles connected together. ♃. H. Native of North America.

Myrtle-leaved St. John's-wort. Fl. June, Aug. Clt. 1818. Pl. 1½ foot.

53 H. Brasilie'nse (Chois. mss. D. C. prod. 1. p. 547.) smooth; branches tetragonal, ascending; leaves linear, acutish, or bluntish, spreading, 3-nerved, full of pellucid dots; flowers terminal, usually tern; sepals linear-oblong, acuminated, acute; corolla small; styles 5, unconnected, straight. ♃. S. Native of Brazil about Rio Janeiro and the province of Minas Geraes.

Var. β; leaves broader, oblong-lanceolate; flowers more numerous, subcymose; stamens all fertile. In the province of Minas Geraes, near the town called Mantiqueira.

Brazilian St. John's-wort. Fl. Oct. Shrub 2 feet.

54 H. denuda'tum (St. Hil. fl. bras. 1. p. 336.) smooth; stem much branched, lower part naked, upper tetragonal; leaves small, crowded, linear-sublanceolate, acute, full of pellucid dots; flowers at the tops of the branches, axillary and terminal, collected into corymbs, 4-5-gynous; segments of calyx linear-

awl-shaped. ♄. S. Native of Brazil in that part of the province of St. Paul called Campos Geraes. Stamens numerous, polyadelphous at the base. Stigmas subcapitate.

Naked-stemmed St. John's-wort. Fl. Feb. Shrub 1 to 2 feet.

55 H. TE'RNUM (St. Hil. fl. bras. 1. p. 330.) smooth; stem suffruticose, erect, nearly simple; leaves oblong-lanceolate, obtuse at the base, acutish at the apex, full of black dots, approximate, pressed to the stem, lower and rameal ones opposite, upper ones tern; flowers panicled, 3-4-gynous; segments of calyx equal, oblong-lanceolate. ♄. S. Native of Brazil in the southern part of the province of St. Paul. Stamens polyadelphous at the base. Stigmas subcapitate.

Tern-leaved St. John's-wort. Fl. Mar. Shrub 1 foot.

56 H. TAMARISCI'NUM (Cham. et Schlecht. Linnæa. 3. p. 124.) stem shrubby, branched, delequescent; leaves half-stem-clasping, lanceolate, acute, keeled, with involute margins, sometimes imbricate, full of pellucid dots; cymes terminal, with many small flowers, glandless; calycine segments oval, acute, one-half shorter than the corolla, but equal with the calyx; stamens 18, nearly free, length of petals; styles 3, distinct. ♄. S. Native of Brazil.

Tamarix-like St. John's-wort. Shrub 3 to 4 feet.

57 H. PELLETIERIA'NUM (St. Hil. fl. bras. 1. p. 334. t. 70.) smooth; stem suffruticose, much branched, tetragonal above; leaves crowded, small, linear-sublanceolate, acutish, full of pellucid dots, covered with resinous powder; flowers small, numerous, paniculately-corymbose, trigynous; segments of calyx ovate, bluntish, striated, quite entire; stamens 10-20, free. ♄. S. Native of Brazil in the province of Cisplatine in the eastern part, on a mountain called Pao de Assucar. Stigmas subcapitate.

Pelletier's St. John's-wort. Fl. Oct. Shrub 2 to 3 feet.

58 H. PARVIFÒLIUM (St. Hil. fl. bras. 1. p. 333.) smooth; stem suffruticose, branched, tetragonal above; leaves small, linear, obtuse, full of pellucid dots; flowers small, very numerous; paniculately corymbose, trigynous; segments of calyx ovate, obtuse, quite entire; stamens free. ♄. S. Native of Brazil in the province of the Missions on the banks of Ibicuy.

Small-leaved St. John's-wort. Fl. Feb. Shrub 2 feet.

59 H. EUPHORBIOÌDES (St. Hil. fl. bras. 1. p. 332. t. 69.) smooth; stem herbaceous, slender; leaves ovate, or elliptical, obtuse, full of pellucid dots, glaucous beneath; flowers small, trigynous; stamens 10-15, free. ♃. H. Native of Brazil on the banks of the river Parahyba near Rio Janeiro, as well as in the province of St. Paul. Stigmas capitate.

Var. β, *mìnus* (St. Hil. l. c.) stems shorter; leaves smaller; flowers more loose, in forked, paniculate spikes. Rio Janeiro.

Var. γ, *floribúndum* (St. Hil. l. c.) stems numerous; leaves smaller; flowers more or less dense. In Minas Geraes.

Euphorbia-like St. John's-wort. Fl. Sept. Pl. ½ to 1 foot.

60 H. CORDIFO'RME (St. Hil. fl. bras. 1. p. 330.) smooth; stem suffruticose, upper part tetragonal; leaves heart-shaped, coriaceous, approximate, pressed to the stem; flowers cymose, crowded, trigynous; segments of calyx ovate, acute. ♄. S. Native of Brazil in the southern part of the province of Minas Geraes. Stamens free. Stigmas subcapitate.

Heart-formed-leaved St. John's-wort. Fl. Mar. Sh. ½ to 1½ ft.

61 H. TERETIU'SCULUM (St. Hil. fl. bras. 1. p. 331.) smooth; stem erect, rather round; branches tetragonal; leaves ovate or ovate-oblong, bluntish, full of black dots beneath; flowers panicled, pentagynous; segments of calyx oblong-lanceolate, acute. ♄. S. Native of Brazil in the southern part of the province of St. Paul, where it is called *Arudo do Campo*. Stamens numerous, free. Stigmas subcapitate.

Roundish-stemmed St. John's-wort. Fl. Jan. Pl. 1 to 2 ft.

62 H. PUNCTULA'TUM (St. Hil. fl. bras. 1. p. 334.) smooth; stem erect, tetragonal, a little branched; leaves sublinear, obtuse, full of pellucid dots; cyme trifid; flowers pentagynous; segments of calyx oblong, acuminated, acute. ♃. S. Native of Brazil in the province of Minas Geraes, not far from the town of Mantiqueira. Stamens 10-20, free. Stigmas subcapitate.

Small-dotted St. John's-wort. Fl. Dec. Pl. 1 foot.

63 H. RI'GIDUM (St. Hil. fl. bras. 1. p. 336.) smooth; stem suffruticose, terete; leaves linear or sublinear or oblong-linear, acute, full of pellucid dots, rigid, coriaceous; flowers terminal, few, pentagynous; segments of calyx linear-lanceolate, acute. ♄. S. Native of Brazil in the southern part of the province of St. Paul, near the town called Curityba. Stamens numerous, free. Stigmas subcapitate.

Var. β, *brevifòlium* (Hil. l. c.) leaves shorter and more numerous; flowers cymose or paniculately cymose.

Stiff St. John's-wort. Fl. Mar. Sh. 2 to 3 feet.

64 H. LINOÌDES (St. Hil. fl. bras. 1. p. 333.) smooth; stem subherbaceous, erect, very straight, tetragonal above; leaves obtuse, hardly dotted, lower ones sublanceolate-linear; panicle terminal, elongated; segments of the calyx equal, linear, or ovate-lanceolate, acute; stamens free; styles 5. ♃. S. Native of Brazil in the western part of the province of Rio Grande de St. Pedro do Sul, on the banks of a rivulet called Garapuita. Stigmas capitate.

Flax-like St. John's-wort. Fl. Feb. Pl. 1 foot.

65 H. LAXIU'SCULUM (St. Hil. pl. us. bras. no. 62.) smooth; stem herbaceous, upper part tetragonal; leaves rather distant, obtuse, full of pellucid dots, lower ones narrow, lanceolate, upper and rameal ones linear-lanceolate; flowers corymbose, pentagynous; segments of the calyx equal, nearly linear, acute. ♃. S. Native of Brazil in the provinces of St. Paul and Minas Geraes, where the inhabitants employ a decoction of the leaves against the bites of serpents.

Loose-flowered St. John's-wort. Fl. Feb. Pl. 1 foot.

66 H. CAMPE'STRE (Cham. ex Schlecht. Linnæa. 3. p. 122.) stem shrubby, branched; leaves oblong, tapering to the base, full of pellucid dots; cymes terminal, leafless, glandless; calycine segments narrow, lanceolate, ending in long acute acumens, shorter than the corolla, but longer than the capsule; stamens numerous, short, nearly free; styles 5, free, diverging. ♄. S. Native of Brazil at Rio Negro. Petals yellow, orange at the tip.

Field St. John's-wort. Shrub 2 to 3 feet.

67 H. MYRIA'NTHUM (Cham. et Schlecht. Linnæa. 3. p. 123.) stem shrubby, straight, corymbosely branched; leaves linear, obtuse, glaucous, full of pellucid dots; cymes terminal, small, and many-flowered, glandless; calycine segments lanceolate, acute, one-half shorter than the corolla, but equal in length with the capsule; stamens 12, nearly free, length of petals; styles 3, distinct. ♄. S. Native of Monte Video.

Many-flowered St. John's-wort. Shrub 2 to 3 feet.

68 H. PROLI'FICUM (Lin. mant. 106.) stem round; branches angular; leaves linear-lanceolate, with revolute edges, full of pellucid dots; corymbs few-flowered; sepals ovate-lanceolate, stamens very numerous; styles usually connected together. ♄. H. Native of North America in Virginia or Canada. Wats. dend. brit. t. 88. H. foliòsum, Jacq. hort. Schœnbr. 3. p. 27. t. 299. H. Kalmiànum, Du Roi. harbk. 1. p. 310. A very common shrub in the gardens.

Prolific St. John's-wort. Fl. June, Aug. Clt. 1758. Shrub 1 to 2 feet.

69 H. TENUIFÒLIUM (St. Hil. fl. bras. 1. p. 337.) smooth; stem short, tetragonal above; leaves narrow-linear, acute, full of pellucid dots, revolute beneath; flowers very few, axillary, and terminal, trigynous; segments of calyx unequal, oblong, with long, acute acumens. ♄. S. Native of Brazil in dry

fields near the town of St. Paul. Stamens polyadelphous to the middle.

Fine-leaved St. John's-wort. Fl. Mar. Shrub $\frac{1}{4}$ to $\frac{1}{2}$ foot.

70 H. GLAU'CUM (Mich. fl. bor. amer. 2. p. 78.) stem round; leaves cordate, stem-clasping, obtuse, with revolute margins, glaucous, full of pellucid dots; flowers in very leafy panicles; sepals ovate, obtuse; stamens very numerous. ♃. F. Native of Florida. Flowers large.

Glaucous-leaved St. John's-wort. Fl. July, Aug. Clt. 1812. Pl. 1 to 2 feet.

71 H NUDIFLÒRUM (Mich. fl. bor. amer. 2. p. 78.) stem tetragonal and winged; leaves ovate-oblong, obtuse, full of sharp dots; panicle of flowers naked; sepals linear-lanceolate, acute; styles connected together. ♃. H. Native of North America, particularly in Carolina. Flowers pale-yellow.

Var. β, ovàtum (D. C. prod. 1. p. 548.) sepals ovate; leaves stem-clasping. H. lævigàtum, Ait. hort. kew. ed. 2. vol. 4. p. 425.

Var. γ, ramòsum (D. C. prod. 1. p. 548.) stem more branched and leafy.

Naked-flowered St. John's-wort. Fl. Aug. Oct. Clt. 1811. Pl. $1\frac{1}{2}$ foot.

72 H. SPHÆROCA'RPON (Mich. bor. amer. 2. p. 78.) stem angular, erect; leaves oblong, obtuse, sessile, without dots; panicle naked, dichotomous; sepals linear-lanceolate, acute; styles connected together; capsules globose. ♃. H. Native of North America in Kentucky and near Philadelphia.

Nuttall gives the following character: stem 2-edged at the top; leaves oblong, full of pellucid dots, obtuse; cymes naked, compact; calyx foliaceous, at first shorter than the petals; styles 3, united or distinct; stamens shorter than the petals; not very numerous; capsule globose.

Round-capsuled St. John's-wort. Pl. $1\frac{1}{2}$ foot.

73 H. GRAMI'NEUM (Forst. prod. 53.) stem tetragonal, dichotomous; leaves ovate-lanceolate, stem-clasping, sessile, without pellucid dots; peduncles terminal, solitary, 1-flowered; sepals linear-lanceolate; styles short, free; stigmas capitate. ♃. H. Native of New Caledonia.

Grassy St. John's-wort. Pl. 1 foot.

74 H. FASTIGIA'TUM (H. B. et Kunth, nov. gen. amer. 5. p. 195.) stem straight, branched at the top; leaves oblong-lanceolate, with revolute edges; sepals linear-lanceolate; stigmas somewhat funnel-shaped; branchlets fastigiate. ♃. H. Native of Mexico near Pazcuaro.

Fastigiate-branched St. John's-wort. Pl. 2 feet.

75 H. QUADRA'NGULUM (Lin. spec. 1104.) stem quadrangular, straight, branched; leaves ovate, obtuse, full of pellucid dots, and with black dots on the edges; panicle many-flowered; sepals lanceolate; anthers each tipped with dark purple glands. ♃. H. Native throughout Europe in moist meadows and thickets. Plentiful in Britain. Smith, engl. bot. t. 370. Curt. lond. fasc. 4. t. 52. Fl. dan. t. 640. Petals sometimes dotted, and streaked with dark purple. Root somewhat creeping.

Var. β, undulàtum (Willd. enum. p. 811.) leaves with wavy edges. ♃. H. Native of the South of Europe and north of Africa.

Quadrangular-stemmed St. John's-wort or St. Peter's-wort. Fl. July, Aug. Brit. Pl. 1 to 2 feet.

76 H. DU'BIUM (Leers. 162. Willd. spec. 3. p. 1460.) stem obscurely quadrangular, erect, branched; leaves obtuse, almost destitute of pellucid dots, but commonly with a broken row of coloured ones close to the margin; sepals elliptical; panicles many-flowered. ♃. H. Native of Europe in rather mountainous groves and thickets. In England, about Sapey, near Clifton, Worcestershire; Luton, Bedfordshire; North Mimms, Herts; at Dowton Castle, near Ludlow, and Hafod, Cardiganshire, very abundantly. Smith, engl. bot. t. 296. H. Delphinénse, Vill. dauph. 3. p. 497. t. 44. H. quadrángulum, *β* dùbium, D. C. prod. 1. p. 548. The petals and calyx are blotched and dotted with dark-purple.

Var. β, maculàtum (Crantz. austr. fasc. 2. p. 64.) stems more branched; flowers more numerous; petals with black dots. ♃. H. Native of Europe in groves and thickets, particularly in Austria and France. H. maculàtum, Vill. dauph. no. 1433. t. 83. f. 1.

Doubtful or Imperforated St. John's-wort. Fl. July, Aug. Britain. Pl. 1 to 2 feet.

77 H. CONFE'RTUM; stem almost simple, quadrangular, winged, destitute of black dots; leaves short, obtuse, nearly destitute of pellucid dots, but with an irregular row of black ones near the margin; sepals acute, with pellucid dots. ♃. H. Native of Europe. H. quadrángulum, var. *δ*, confértum, D. C. prod. 1, p. 448. Panicles crowded. Petals without dots.

Crowded-flowered St. John's-wort. Fl. July, Aug. Pl. 1 to 2 feet.

78 H. TETRA'PTERUM (Fl. nov. suec. vol. 2. Schlecht. Linnæa. 4. p. 413.) stem 4-winged; leaves ovate, obtuse, somewhat mucronulate, full of minute pellucid dots, very much reticulated; segments of the calyx lanceolate, mucronate. ♃. H. Native of Europe, Sweden, &c. Flowers small. H. quadrángulum, Schlecht. fl. berl. 1. p. 397.

Four-winged-stemmed St. John's-wort. Pl. 2 feet.

79 H. TETRA'PTERA-QUADRA'NGULUM (Schlecht. l. c. p. 414.) stem obsoletely quadrangular; leaves elliptic, full of pellucid dots, reticulately veined; calycine segments broad-lanceolate, acute. ♃. H. Native with the last. There is a variety with less membranous angles, less reticulated leaves, and oblong, blunt, calycine segments, and larger flowers.

Four-winged-four-angled-stemmed St. John's-wort. Fl. June, July. Pl. $1\frac{1}{2}$ foot.

80 H. PERFORA'TO-QUADRA'NGULUM (Schlecht. l. c. p. 415.) stem obsoletely quadrangular; leaves elliptic, full of pellucid dots, reticulately veined; calycine segments lanceolate or oblong-elliptic, acutish. ♃. H. Native of Sweden? Flowers large. There is a variety with dotless leaves.

Perforated-quadrangular St. John's-wort. Fl. June, July. Pl. $1\frac{1}{2}$ foot.

81 H. ATTENUA'TUM (Chois. prod. hyp. p. 47. t. 6.) stem round, erect, full of black dots; leaves ovate-oblong, obtuse, somewhat stem-clasping, full of black dots; sepals lanceolate, with black dots; petals with black dots at the apex. ♃. H. Native of Siberia.

Tapering St. John's-wort. Fl. July, Aug. Clt. 1822. Pl. 1 to $1\frac{1}{2}$ foot.

82 H. RE'PENS (Lin. spec. 1103.) stem suffruticose, round, purplish, ascending and prostrate; leaves ovate-linear, obtuse, approximate, scarcely perforated; corymbs few-flowered; sepals ovate-lanceolate, acute, with black dots. ♃. H. Native of the Levant and of Europe in the region of the Mediterranean.

Creeping St. John's-wort. Fl. Pl. prostrate.

83 H. CONNA'TUM (Lam. dict. 4. p. 168.) smooth; stem nearly simple; leaves connately-perfoliate, the free part ovate, acutish or obtuse, girded by an elevated margin, glaucous and dotted with black beneath, coriaceous; flowers cymose, pentagynous; bracteas linear-awl-shaped; segments of calyx ovate, acuminated. ♄. S. Native of Brazil. St. Hil. pl. us. bras. no. 61. This plant is astringent, and a decoction of it is used in Brazil as a gargle for a sore throat.

Connate-leaved St. John's-wort. Shrub $1\frac{1}{2}$ foot.

84 H. CHLORÆFÒLIUM (St. Hil. fl. bras. 1. p. 329.) smooth; stem simple; leaves connately perfoliate, the free part semicircular, mucronulate, girded by an elevated margin, glaucous

beneath and full of black dots, coriaceous, distant; flowers cymose, pentagynous; segments of calyx ovate, acuminated. ♄. S. Native of Brazil in that part of the province of St. Paul called Campos Geraes. Stamens very numerous, nearly free. Stigmas subcapitate.

Chlora-leaved St. John's-wort. Fl. Feb. Shrub 1½ foot.

85 H. ERE'CTUM (Thunb. fl. jap. p. 296.) stem round, purple, straight; leaves lanceolate, acute, stem-clasping, with revolute edges; sepals lanceolate. ♃. F. Native of Japan in the mountains of Nagasaki.

Erect St. John's-wort. Pl. 1 to 2 feet.

86 H. JAPO'NICUM (Thunb. fl. jap. p. 295. t. 31.) stem weak, tetragonal, smooth, decumbent; leaves broad-ovate or oval, mucronate, somewhat cordate, obtuse, with revolute edges, full of pellucid dots; flowers solitary, loosely panicled; sepals almost equal in length with corolla and stamens; styles 3, short, diverging. ♃. H. Native of Japan and of Nipaul in bogs near the town of Katmandu. H. dichótomum, Hamil. mss. Peduncles solitary or tern, 1-flowered. Stems decumbent. Branches erect. Flowers small.

Var. β, *ramòsum* (D. C. prod. 1. p. 549.) stem branched; leaves and flowers more crowded.

Japan St. John's-wort. Fl. May. Clt. 1823. Pl. 1 foot.

87 H. DICHO'TOMUM (Lam. dict. 4. p. 167.) stem suffruticose at the base, round, dichotomously branched; leaves small, linear-elongated, obtuse, tapering to the base, full of obscure pellucid dots; sepals ovate-lanceolate, acute; stamens 9, free. ♄. S. Native of St. Domingo. Perhaps this species belongs to *Elòdea*.

Dichotomous-leaved St. John's-wort. Shrub 2 feet.

88 H. CRI'SPUM (Lin. mant. 106.) stem round, much branched; leaves sessile, lanceolate, sinuately waved at the base, full of pellucid dots; sepals small, blunt. ♃. H. Native of the regions of the Mediterranean.—Bocc. mus. 2. p. 34. t. 12.

Curled-leaved St. John's-wort. Fl. July, Aug. Clt. 1688. Pl. 1 foot.

89 H. PILÒSUM (Walt. fl. carol. 190.) stem twiggy, simple; leaves dilated, ovate, sometimes tapering to the base; panicles terminal, few-flowered. ♄. F. Native of North America in Virginia and Carolina. H. Virginiànum, &c. Pluk. alm. t. 245. f. 6. A'scyrum villòsum, Willd. spec. 2. p. 1474.

Pilose St. John's-wort. Shrub 1 foot.

90 H. SI'MPLEX (Mich. fl. bor. amer. 2. p. 80.) pilose; stem simple, round, woolly; leaves oblong, pressed to the stem, channelled, pubescent; flowers few, almost sessile; sepals ovate, ciliated; styles 3, free; stigmas capitate. ⊙. H. Native of Lower Carolina and Georgia.

Simple-stemmed St. John's-wort. Fl. July, Aug. Clt. 1825. Pl. ½ foot.

91 H. NUTTA'LLII; leaves oblong-ovate, partly connate at the base, and always pressed close to the stem. ♃. H. Native of North America. H. new, Nutt. gen. 2. p. 17. Differs from H. simplex, Michx. Stem simple. The whole plant is covered with matted, somewhat scabrous pubescence.

Nuttall's St. John's-wort. Pl. 1 foot.

92 H. HETEROPHY'LLUM (Vent. hort. cels. t. 68.) stem suffruticose, round; leaves linear-lanceolate, full of pellucid dots, axillary ones crowded, imbricate, very short, blunt; sepals acute, somewhat unequal. ♄. F. Native of Persia.

Various-leaved St. John's-wort. Clt. 1712. Fl. July, Aug. Shrub 1 to 2 feet.

93 H. ÆGYPTI'ACUM (Lin. spec. 1103.) stem round; leaves small, ovate, crowded, without dots; flowers few, almost sessile; sepals lanceolate, acute; styles small, diverging. ♄. F. Native of Egypt. Lin. amœn. 8. p. 323. t. 8. f. 3. Ker. bot. reg. 196. Leaves glaucous. Flowers small.

Egyptian St. John's-wort. Fl. June, July. Clt. 1787. Shrub ½ to 1½ foot.

94 H. NA'NUM (Poir. dict. suppl. 3. p. 699.) stem suffruticose; leaves ovate-roundish, very blunt, mucronulate, full of pellucid dots; sepals very thin, acute, lanceolate. ♄. F. Native of Syria.

Dwarf St. John's-wort. Shrub ½ foot.

95 H. AUSTRA'LE (Tenore, fl. neap. app. 5th. ex Linnæa. 3. p. 103.) petals and calyx entire, full of black dots; leaves opaque, dotless, veiny, oblong-elliptic, obtuse, full of black dots on the margins; stem herbaceous, obsoletely quadrangular at the base; flowers cymose; petals 3 times larger than the calyx; filaments and anthers dotless. ♃. H. Native of Lucania. H. humifùsum, Tenore, prod. H. dùbium, Mauri. rom. pl. cent. 13. p. 27. exclusive of the synonymes.

Southern St. John's-wort. Pl. trailing.

96 H. CUNEA'TUM (Poir. suppl. dict. 3. p. 699.) branches roundish, smooth; leaves obovate, cuneated at the base, obtuse, on short petioles, with a few black glandular dots; flowers few; sepals linear-lanceolate, longer than the corolla; stamens 15-20. ♃. F. Native of the Levant.

Cuneated-leaved St. John's-wort. Pl. prostrate.

97 H. HUMIFU'SUM (Lin. spec. 1103.) stem compressed, prostrate; leaves elliptical, blunt, full of fine pellucid and black dots on the margins; flowers cymose, terminal; sepals ovate, longer than the corolla; stamens 15-20. ♃. H. Native of most parts of Europe and Caucasus in sandy, gravelly, heathy, and rather boggy places; frequent in Britain. Smith, engl. bot. t. 1226. Curt. fl. lond. fasc. 3. t. 50. Oed. fl. dan. t. 141. This species has a lemon-like scent, as well as *H. dùbium* and *H. perforàtum*.

Trailing St. John's-wort. Fl. July. Britain. Pl. trailing.

98 H. CÆSPITÒSUM (Cham. et Schlecht. Linnæa. 3. p. 126.) stems herbaceous, prostrate, rising from a woody root, and ascending, tufted; leaves linear, obtuse, full of pellucid dots; cymes terminal, leafy, few-flowered, glandless; calycine segments lanceolate, shorter than the corolla, but longer than the capsule; stamens about 25, nearly free; styles 3, short, free. ♃. S. Native of Chili on dry hills about Talcaguano.

Tufted St. John's-wort. Pl. trailing.

99 H. ANAGALLOI'DES (Cham. et Schlecht. Linnæa. 3. p. 127.) herbaceous, trailing, and creeping; leaves 5-7-nerved, ovate, obtuse, full of pellucid dots; cyme terminal, leafy, few-flowered, glandless; calycine segments obovate, shorter than the corolla; stamens 15-20, nearly free; styles 3, free. ♃. H. Native of California. Like *H. humifùsum*.

Pimpernel-like St. John's-wort. Pl. trailing.

100 H. LIOTTA'RDI (Vill. dauph. t. 44.) stem erectish; leaves oblong, blunt, full of fine pellucid and black dots on their margins; flowers cymose, sometimes 4-parted, terminal; sepals linear-lanceolate, longer than the corolla. ♂. H. Native of Dauphiny.

Liottard's St. John's-wort. Fl. July. Clt. 1819. Pl. ½ foot.

101 H. PUSI'LLUM (Chois. prod. hyp. p. 20.) stem weak, prostrate, tetragonal; leaves ovate, obtuse, full of pellucid dots; sepals lanceolate; petals upright; stigmas capitate. ♃. F. Native of New Holland. A'scyrum humifùsum, Lab. ill. nov. holl. 2. p. 33. t. 175.

Small St. John's-wort. Fl. Ju. Aug. Clt. 1818. Pl. trailing.

102 H. INVOLU'TUM (Chois. prod. hyp. p. 50.) stem ascending, 4-winged, slender; leaves ovate-oblong, obtuse, full of pellucid dots; panicle loose, dichotomous; sepals lanceolate, acute; corolla involute; stigmas capitate. ♃. F. Native of New Holland. A'scyrum involùtum, Lab. ill. nov. holl. 2. p. 32. t. 174.

Involute-flowered St. John's-wort. Fl. July, Aug. Clt. 1822. Pl. ½ foot.

103 H. A'FRUM (Lam. dict. 4. p. 166.) stem suffruticose, round, winged; leaves oblong, obtuse; full of fine pellucid dots,

and with black ones beneath and at the margins; sepals acute, rather unequal, sometimes serrated. ♄. F. Native of Barbary, Spain, and Syria.

African St. John's-wort. Shrub 6 feet.

104 H. perfora'tum (Lin spec. 1105.) stem 2-edged; leaves ovate or elliptical, with copious, pellucid dots; flowers panicled; sepals lanceolate, full of pellucid dots; anthers with black dots; styles short, erect. ♃. H. Native every where throughout Europe, north of Africa, Siberia, in groves, hedges, and thickets. Abundant in Britain. Smith, engl. bot. t. 295. Curt. lond. fasc. 1. t. 57. Oed. fl. dan. 1043. Turp. in dict. sc. nat. with a figure. Root tufted. Flowers bright-yellow, dotted, and streaked with purple. This plant has a powerful lemon-like scent when rubbed, staining the fingers with dark purple, from the great abundance of coloured essential oil lodged in the herbage, and even in the petals. As this plant was found to bleed at the slightest touch, it was supposed to have a vulnerary quality, and became the "balm of the warrior's wound," giving a blood-red colour to every composition, whether of a spiritous or oily nature into which it entered. The essential oil, the seat of this colour, is aromatic, and possibly tonic or stimulating, without much acrimony.

Although in the present practice this plant is not much regarded as a medicine, yet its sensible qualities, and the repeated testimonies of its virtues, entitle it to further trials. To the taste it is astringent and bitter, and it seems to be chiefly diuretic. It has been given in ulcerations of the kidneys, and has even been supposed to possess virtues as a febrifuge. The leaves given in substance are said to destroy worms. The dried plant, boiled with alum, dyes wool yellow.

The common people in France and Germany gather this species of *St. John's-wort* with great ceremony on St. John's day, and hang it in their windows, as a charm against storms, thunder, and evil spirits; mistaking the meaning of some medical writers, who have fancifully given this plant the name of *Fuga Dæmonum*, from a supposition that it was good in maniacal and hypochondriacal disorders. Formerly it was also carried about by the people of Scotland as a charm against witchcraft and enchantment; and they fancy it cures ropy milk, which they suppose to be under some malignant influence, by milking afresh upon the herb. Kine and goats eat it, but horses and sheep refuse it.

Var. β, latiglandulòsum (D.C. prod. 1. p. 550.) glands broader and fewer; leaves more crowded at the top; panicles more straight and fewer flowered.

Var. γ, elàtum (D. C. l. c.) stem taller, with more distant internodes; leaves smaller, with revolute margins; branches straighter; panicles loose, few-flowered.

Var. δ, punctàtum (D. C. prod. 1. p. 550.) stem dwarfer; sepals blunter, sometimes with glandular margins; corolla with black dots.

Var. ε, microphýllum (D.C. l. c.) all parts of the plant are more crowded and smaller; panicles straight, many-flowered.

Var. ζ, albiflòrum (D. C. l. c.) flowers white.

Perforated or Common St. John's-wort. Fl. June, Sept. Brit. Pl. 1 to 2 feet.

105 H. quinquene'rvium (Walt. fl. carol. 190.) stem tetragonal; leaves somewhat stem-clasping, ovate, obtuse, obscurely 5-nerved, full of pellucid dots, which are acute on the under surface; corymbs dichotomous; sepals linear-lanceolate. ♃. H. Native from Canada to Carolina in overflowed places and on Mount Quindiu in South America. H. stellarioìdes, H. B. et Kunth, nov. gen. amer. 5. p. 196. H. parviflòrum, Willd. spec. 3. p. 1456. H. mùtilum, Willd. spec. 3. p. 1471. Corolla shorter than the calyx.

Five-nerved-leaved St. John's-wort. Fl. June, Sept. Clt. 1759. Pl. 1 foot.

106 H. thymifòlium (H. B. et Kunth, nov. gen. amer. 5. p. 186. t. 455.) stem shrubby; branches dichotomous; leaves oblong, small, bluntish, full of pellucid dots; sepals oblong; styles free; stigmas peltate. ♄. G. Native of South America near Santa Fe de Bogota?

Thyme-leaved St. John's-wort. Shrub.

107 H. brevi'stylum (Chois. prod. hyp. p. 51. t. 7.) stem prostrate, slender; leaves oblong-lanceolate, rather blunt, full of pellucid dots; panicles few-flowered; sepals lanceolate; styles connected, very short; stigmas capitate. ♃. F. Native of South America.

Short-styled St. John's-wort. Pl. prostrate.

108 H. elonga'tum (Ledeb. ex Spreng. syst. 3. p. 347.) branches round; leaves sessile, linear, glaucous, without dots, with revolute margins; peduncles opposite; sepals blunt, striated, entire; petals large, with glandular margins. ♃. H. Native of Siberia in the Kirghisean Steppe at Lake Saisan.

Elongated St. John's-wort. Pl. 1 to 2 feet.

109 H. denticula'tum (H. B. et Kunth, nov. gen. amer. 5. p. 191. t. 458.) stem ascending; leaves linear-lanceolate, with retrograde teeth at the margins; flowers decandrous; sepals oblong-lanceolate; petals obovate-cuneated; styles free, very short; stigmas subcapitate. ♃. F. Native of Mexico near Guanaxuato.

Toothletted-leaved St. John's-wort. Pl. 1 foot.

110 H. Cervante'sii (Willd. herb. ex Spreng. syst. 3. p. 347.) stem erect, 2-edged at the apex, dichotomous; leaves stem-clasping, linear, acuminate, with revolute margins; flowers cymose, leaning to one side; sepals lanceolate, entire. ♃. F. Native of Mexico.

Cervantes's St. John's-wort. Pl. 1 foot.

111 H. Lala'ndii (Chois. mss. D. C. prod. 1. p. 50.) stem tetragonal, with black dots; leaves lanceolate, acute, with revolute margins, rather stem-clasping, and pressed against the stem; panicle few-flowered, dichotomous; sepals linear-lanceolate, longer than the corolla; styles 3, free. ♃. G. Native of the Cape of Good Hope.

Laland's St. John's-wort. Pl.?

112 H. silenoi'des (Juss. ann. mus. 3. p. 162. t. 16. f. 3.) leaves lanceolate, with revolute edges; flowers leaning to one side; sepals narrow, acute, glandular. ♃. G. Native of Peru on the Andes. Panicle dichotomous.

Silene-like St. John's-wort. Pl. 1 foot.

113 H. inde'corum (H. B. et Kunth, nov. gen. amer. 5. p. 193.) stem branched at the base; branches elongated, tetragonal; flowers usually pentandrous; leaves oblong-lanceolate, acute, dotted; stigmas somewhat capitate. ♃. F. Native of South America near Loxa.

Var. β, paniculàtum (D. C. prod. 1. p. 550.) stem straight, many-flowered; flowers small, pentandrous or heptandrous; petals linear. ♃. F. Native of South America near Ario. H. paniculàtum, H. B. et Kunth. nov. gen. 5. p. 195. t. 459.

Indecorous St. John's-wort. Pl. 1 foot.

114 H. Canade'nse (Lin. spec. 1104.) stem herbaceous, straight, 4-winged; leaves linear, bluntish, full of very fine pellucid dots, but with black ones beneath; panicles elongated, dichotomous; sepals lanceolate; styles very short; capsules conical, red. ♃. H. Native of North America from Canada to Carolina, and of Mexico, in low gravelly places. Flowers very small.

Var. β, mínimum (D. C. prod. 1. p. 550.) much smaller in stature; flowers fewer. H. thesiifòlium, pauciflòrum and Moranénse of H. B. et Kunth, nov. gen. 5. p. 192 and 193. appear to be only varieties of this plant. ♃. F. Native of Mexico.

Canadian St. John's-wort. Fl. June, Aug. Clt. 1770. Pl. ½ foot.

115 H. TARQUE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 193.) stem straight, branched, dichotomous, corymbosely-many-flowered; leaves lanceolate-oblong, dotted, with revolute margins; sepals lanceolate, acuminate; styles 3-5; stigmas somewhat capitate. ♃. G. Native of South America in mountainous places of Quito.

Tarquo St. John's-wort. Pl. 1 foot.

116 H. GALIOÌDES (Lam. dict. 4. p. 161.) stem suffruticose, round, straight; leaves linear-lanceolate, tapering to the base, broadest at the apex, acute, with revolute dotted margins; sepals linear, acute, reflexed after flowering; styles at first connected, but at length free; capsules conical, very acute. ♄. H. Native of North America from New Jersey to Carolina in sandy moist places near rivulets. Petals equal in length to the stamens, scarcely longer than the calyx.

Galium-like St. John's-wort. Fl. July, Sept. Shrub 2 feet.

117 H. AXILLA'RE (Lam. dict. 4. p. 160.) stem shrubby, round, diffuse; leaves lanceolate-linear, narrowed at the base, with revolute margins; sepals rather unequal; styles at first joined, but afterwards free. ♄. H. Native of North America in the pine-woods of Georgia and Florida. H. fasciculàtum, Willd. spec. 3. p. 1452. exclusive of the synonyme of Mich. Pursh, fl. amer. sept. 2. p. 376. H. Còris, Walt. fl. carol. 190. Peduncles on the top of the branches, axillary, 3-flowered, with the middle flower sessile. Flowers about the size of those of *H. perforàtum*.

Axillary-flowered St. John's-wort. Fl. Jul. Sh. 1 to 2 feet.

118 H. ORIGANIFÒLIUM (Willd. spec. 3. p. 1467.) stem ascending, downy; leaves ovate, blunt, pubescent, full of pellucid dots; flowers large, few; sepals linear, acute, smooth, with a few black dots at the apex; corolla full of black dots; stamens very numerous. ♃. F. Native of the East about Constantinople, Armenia, and Thrace. H. Lusitánicum, Poir.

Marjoram-leaved St. John's-wort. Pl. 1 foot.

* * *Sepals toothed, usually with the teeth glandular.*

119 H. ELÒDES (Lin. spec. 1106.) stem villous, round, procumbent; leaves roundish-ovate, blunt, shaggy, tomentose, full of pellucid dots; panicle loose, few-flowered; calyx hardly divided half-way down into 5 ovate, obtuse segments, fringed with glands; stamens few; stigmas capitate. ♃. H. Native throughout the north of Europe in marshes. In Britain in spongy, especially mountainous, bogs. Schkuhr. handb. 3. 213. 5. Smith, engl. bot. t. 109. H. tomentòsum, Lob. icon. 400. f. 1. Petals expanding in the sun only, pale-yellow, with green ribs.

Marsh St. John's-wort. Fl. July, Aug. Brit. Pl. prostrate.

120 H. TOMENTÒSUM (Lin. spec. 1106.) stem round, ascending, tomentose; leaves ovate, blunt, rather stem-clasping, with black-dotted margins; panicles loose, dichotomous; sepals acuminated; stigmas simple. ♃. H. Native of the south of Europe, particularly in the regions of the Mediterranean, in moist meadows.—Clus. hist. 2. p. 181. f. 1.—Mor. hist. 2. p. 470. sect. 5. t. 6. no. 5.

Tomentose St. John's-wort. Fl. July, Aug. Clt. 1648. Pl. ½ to ¾ foot.

121 H. LANUGINÒSUM (Lam. dict. 4. p. 171.) woolly; stem suffruticose, round, straight; leaves stem-clasping, ovate, obtuse, with black-dotted margins; corymb of flowers large, dichotomous, many-flowered; calyx obtuse; anthers with black dots. ♃. F. Native of the Levant and Greece.

Woolly St. John's-wort. Pl. 1 to 2 feet.

122 H. HIRSU'TUM (Lin. spec. 1105.) stem round, hairy, erect; leaves ovate-oblong, downy, ribbed, full of pellucid dots, intermixed with a few dark ones; panicle long, racemose; calyx lanceolate, somewhat acute; fringed like the bracteas with numerous black, viscid glands, on shortish stalks, such as also terminate the petals; styles diverging. ♃. H. Native of most parts of Europe and Caucasus in shady places. In Britain in thickets and hedges, chiefly on a dry chalky soil. Smith, engl. bot. t. 1156. Curt. fl. lond. fasc. 3. t. 49. Œd. fl. dan. t. 802. Flowers of a bright-yellow colour; according to Linnæus they close at night.

Hairy St. John's-wort. Fl. June, Aug. Brit. Pl. 2 to 3 ft.

123 H. NUMMULA'RIUM (Lin. spec. 1106.) stem round, ascending; leaves orbicular, stalked; calyx ovate, obtuse. ♃. H. Native of the south of France, Piedmont, &c. on rocky mountains. Lam. ill. t. 643.—Pluk. phyt. t. 93. f. 4.

Money-wort-leaved St. John's-wort. Fl. June, July. Clt. 1823. Pl. ¼ to ½ foot, rather prostrate.

124 H. E'LEGANS (Steph. in Willd. spec. 3. p. 1469.) stem erect, winged, full of black dots; leaves ovate-lanceolate, rather stem-clasping, bluntish, full of pellucid dots; calyx ovate-lanceolate, acute, with pellucid dots; anthers with black dots. ♃. H. Native of Siberia, and near Hale in Saxony, also of Bohemia and Moravia. H. Kohliànum, Spreng. fl. hal. no. 864. t. 9. H. anagalidifòlium, Presl. This is an elegant plant.

Elegant St. John's-wort. Fl. June, Aug. Clt. 1817. Pl. 1 ft.

125 H. GLANDULÒSUM (Ait. hort. kew. ed. 1. vol. 3. p. 107.) stem shrubby, round, erect, branched; leaves elliptical-lanceolate, acute, with glandular margins, and pellucid dots; calyx lanceolate, acute. ♄. G. Native of Madeira and Teneriffe. Corolla pale-yellow, full of brown dots.

Glandular St. John's-wort. Fl. May, Aug. Clt. 1777. Shrub 1 to 2 feet.

126 H. PU'LCHRUM (Lin. spec. 1106.) stem herbaceous, erect, round; leaves stem-clasping, cordate, smooth, blunt, full of pellucid dots, with revolute margins; calyx ovate, obtuse, with glandular serratures, like those of the petals. ♃. H. Native of most parts of Europe in shady places. In Britain in woods and bushy heathy places, on a clay soil, frequent. Smith, engl. bot. t. 1227. Curt. lond. fasc. 1. t. 56. Œd. fl. dan. t. 75. no. 73. Flowers golden, tipped externally with scarlet, which, combined with the red anthers, has a very gay appearance.

Fair St. John's-wort. Fl. July. Brit. Pl. 1 to 1½ foot.

127 H. ANNULA'TUM (Mor. sard. elench. p. 9.) plant cinereously-pubescent below but smooth above; leaves oval-oblong, stem-clasping, full of pellucid dots, and with black dots on the margin; bracteas glandular, crowded, pedicellate, and annular at the base, and are lanceolate as well as the sepals, which are ciliated with glands. ♃. H. Native of Sardinia in the fissures of rocks. Styles 3. Anthers full of black dots.

Annular-bracted St. John's-wort. Pl.

128 H. ELODIOÌDES (Chois. mss. D. C. prod. 1. p. 551.) stem round, smooth, simple, without dots; leaves oval, obtuse, many-nerved, smooth, stem-clasping, glandular at the base, glaucous beneath; panicle crowded; sepals lanceolate, acute, fringed with glands; petals oval, with glandular margins. ♃. H. Native of Nipaul at Narainhetty. H. nervòsum, D. Don, prod. fl. nep. p. 219. Leaves and calyxes full of pellucid dots. Petals sulphur-coloured, tipped with black dots.

Elodes-like St. John's-wort. Fl. June, Aug. Clt. 1820. Pl. ½ to 1 foot.

129 H. BARBA'TUM (Lin. amœn. 8. p. 323.) stem round or somewhat angular, erect, smooth; leaves stem-clasping, ovate, smooth, full of black dots; calyx and petals fringed with pale hairs, and beset with black dots as well as the anthers. ♃. H. Native of Austria and many parts of the south of Europe, particularly in the region of the Mediterranean. In Scotland by the side of a hedge near the wood of Aberdalgy in Strathearn, Perthshire. Jacq. austr. 3. p. 33. t. 259. Smith, engl. bot. t. 1986.

Var. β, Calábricum (D. C. prod. 1. p. 551.) leaves more erect, pressed to the stem. H. Calábricum, Spreng. neue. entd. 3. p. 300.

Bearded St. John's-wort. Fl. Sept. Oct. Scotl. Pl. 1 foot.

130 H. PERFOLIA'TUM (Lin. syst. 707.) stem 2-edged; leaves ovate, stem-clasping, dotted, and glandular; sepals and petals fringed, and dotted; cymes with sessile flowers. ♃. H. Native of Italy.

Perfoliate-leaved St. John's-wort. Fl. May, Jul. Clt. 1785. Pl. 1 foot.

131 H. DENTA'TUM (Lois. fl. gall. p. 499. t. 17.) stem suffruticose, round, ascending; leaves stem-clasping, oblong, bluntish, full of pellucid dots, upper ones sometimes toothed; calyx lanceolate, acute, and is as well as the corolla and anthers furnished with black dots. ♃. H. Native of the Stœchades Islands.

Toothed-leaved St. John's-wort. Fl. July, Oct. Clt. 1820. Pl. 1 foot.

132 H. MONTA'NUM (Lin. spec. 1105.) stem round, erect, smooth; leaves stem-clasping, ovate, acutish, besprinkled with pellucid dots, and marked on the margins with black dots; calyx lanceolate, with dense, prominent, glandular serratures; anthers dotted with black. ♃. H. Native of the mountainous parts of Europe. In Britain on wild bushy hills on a chalky or gravelly soil. Smith, engl. bot. t. 371. Œd. fl. dan. t. 173. Leaves 1½ to 2 inches long. Bracteas fringed like the calyx, resembling the glands of a moss-rose. Petals pale-lemon coloured, without spots or glands.

Mountain St. John's-wort. Fl. July. Brit. Pl. 2 feet.

133 H. MÆ'SICUM (Spreng. syst. 2. p. 348.) stem round, erect, full of black dots; leaves lanceolate, stem-clasping, obtuse, full of black dots; panicle corymbose; sepals lanceolate, fringed, with glandular teeth. ♃. H. Native of Galacz in Moldavia. Flowers lemon-coloured.

Mæsian St. John's-wort. Fl. July, Aug. Pl. 1 foot.

134 H. FIMBRIA'TUM (Lam. dict. 4. p. 148.) stem round, purplish, simple; leaves stem-clasping, ovate, with black dots, margins without any pellucid dots; calyx ovate, acute, fringed; styles 3-4-5. ♃. H. Native of the Alps and the Pyrenees. H. Richèri, Vill. dauph. 3. p. 501. t. 44.

Var. β, androsæmifòlium (Vill. dauph. 3. p. 502. t. 44.) stem more creeping; leaves more ovate. H. alpìnum, Waldst. et Kit. pl. hung. 3. p. 294. t. 265.

Var. γ, Bursèri (D. C. fl. fr. suppl. p. 630.) stem taller; leaves blunter; bracteas longer; calyx shorter, less fringed.

Var. δ, pentágynum (D. C. prod. 1. p. 552.) stems thicker; leaves blunter; calyx longer; flowers all pentagynous.

Fringed-calyxed St. John's-wort. Fl. July, Aug. Clt. 1821. Pl. 1 to 2 feet.

135 H. ÆTHIO'PICUM (Thunb. prod. 1. p. 138.) stem round, smooth, reddish; leaves ovate, somewhat stem-clasping, full of pellucid dots, with revolute margins; panicle terminal, dichotomous; calyx very acute; corolla and anthers full of black dots. ♃. G. Native of the Cape of Good Hope.

Ethiopian St. John's-wort. Fl. Jul. Aug. Clt. 1817. Pl. 1 ft.

136 H. CILIA'TUM (Lam. dict. 4. p. 170.) stem round, rather 2-edged; leaves stem-clasping, somewhat cordate, ovate-oblong, obtuse, full of pellucid dots, and with black ones on the margins; calyx rather acute, fringed; anthers with black dots. ♃. H. Native of the south of Europe, particularly in the regions of the Mediterranean.—Bocc. mus. 2. t. 127.—Column. ecphr. p. 77. t. 78. f. 1.

Var. β, acutifòlium (D. C. prod. 1. p. 552.) leaves smaller, more acute; flowers on longer pedicels.—Bocc. mus. 2. p. 117. t. 91, 92.

Ciliated-calyxed St. John's-wort. Fl. July, Aug. Clt. 1739. Pl. 1 to 1½ foot.

137 H. SERPYLLIFÒLIUM (Lam. dict. 4. p. 176.) stem suffruticose, round; leaves ovate, obtuse, on very short petioles, with revolute margins; calyx ovate, obtuse, fringed. ♄. F. Native of Persia.—Mor. hist. 2. p. 469. sect. 5. t. 6. f. 2.

Wild-thyme-leaved St. John's-wort. Fl. July, Aug. Clt. 1688. Shrub 1½ foot.

138 H. CONFE'RTUM (Chois. prod. hyp. p. 55. t. 8.) stem round, villous at the base; leaves lanceolate, acute, villous, full of pellucid dots, and with revolute margins; calyx lanceolate. ♃. F. Native of the Levant.

Crowded-flowered St. John's-wort. Pl. 1 foot.

139 H. TRIPLINE'RVE (Vent. hort. cels. t. 58.) stem with 2 angles, decumbent at the base; leaves linear, spreading, obtuse, with revolute margins; calyx ovate, acute, fringed with glandular serratures; petals unequal. ♃. H. Native of North America on the banks of the Ohio. Flowers about the size of those of *H. perforàtum*, pale-yellow.

Triple-nerved-leaved St. John's-wort. Fl. July, Aug. Clt. 1821. Pl. 1 foot.

140 H. HYSSOPIFÒLIUM (Vill. dauph. 3. p. 505. t. 44.) stem suffruticose, round, ascending; leaves oblong-lanceolate, bluntish, tapering to both ends, full of pellucid dots, in fascicles in the axils; calyx bluntish; styles 3-4. ♃. H. Native of the south of France, particularly in Dauphiny, also of Tauria.

Var. β, pauciglandulòsum (D. C. prod. 1. p. 552.) leaves broader; stem smaller; calyx more acute, with fewer glands.

Hyssop-leaved St. John's-wort. Fl. July, Aug. Clt. 1823. Pl. 1 foot.

141 H. LINEARIFÒLIUM (Vahl. symb. 1. p. 65.) stem straight, round; leaves linear, obtuse, with black-dotted margins, without pellucid dots; calyx lanceolate, full of black dots. ♃. H. Native of the west and south of France.

Linear-leaved St. John's-wort. Fl. July, Aug. Pl. 1 foot.

142 H. ORIENTA'LE (Lin. spec. 1103.) stem shrubby, slender, suffruticose, with 2 angles, erect and jointed; leaves stem-clasping, linear, obtuse, erect, fringed with glandular hairs; calyx ovate-oblong. ♃. F. Native of the Levant.—Tourn. voy. lev. 2. t. 220.

Eastern St. John's-wort. Pl. ½ to 1 foot.

143 H. PA'LLENS (D. Don, prod. fl. nep. p. 219.) stem round, slender, simple; leaves elliptical-oblong, blunt, membranaceous, sessile, usually fringed with glandular hairs, full of pellucid dots; flowers panicled; calyx lanceolate, acuminate; petals oval, mucronulate. ♃. H. Native of Nipaul. H. Nipaulénsis, Chois. mss. in D. C. prod. 1. p. 552. Flowers sulphur-coloured.

Pale-flowered St. John's-wort. Pl. ½ foot.

144 H. SCA'BRUM (Lin. amœn. 4. p. 287.) stem round, glandular, scabrous; leaves linear, smooth, acutish; flowers umbelled, terminal; calyx small, ovate, obtuse, without glands; styles 3, free. ♃. F. Native of Arabia and Barbary.

Scabrous-stemmed St. John's-wort. Pl. 1 foot.

145 H. CAPITA'TUM (Chois. prod. 1. p. 57. t. 9.) stem round, erect; leaves linear, obtuse, full of pellucid dots, with plaited margins, disposed in fascicles in the axils; calyx small, obtuse; petals with black glands. ♃. F. Native near Bagdad.

Capitate-flowered St. John's-wort. Pl. 1 foot.

146 H. EMPETRIFÒLIUM (Willd. spec. 3. p. 1452.) stem suffruticose, round, with subalate branchlets; leaves linear, tern, with revolute margins; calyx small, obtuse; petals without glands. ♄. F. Native of the south of Europe, particularly in the regions of the Mediterranean.

Empetrum-leaved St. John's-wort. Fl. May, Aug. Clt. 1820. Shrub ½ to 1 foot.

147 H. CÒRIS (Lin. spec. 1107.) stem shrubby, erect, round; leaves in whorles, linear, with revolute margins; calyx

linear, bluntish. ♄. F. Native of the Levant, and in dry places in the south of Europe. A pretty little shrub.

Coris-leaved St. John's-wort. Fl. May, Sept. Clt. 1640. Shrub ½ to 2 foot.

148 H. LUSITA'NICUM (Poir. suppl. dict. 3. p. 702.) stem villous, round, slender; leaves small, elliptical, obtuse, hispid; sepals linear-lanceolate, mucronate; anthers with black dots; styles 3, filiform. ♄. F. Native of Portugal.

Portugal St. John's-wort. Shrub ½ to 1 foot.

149 H. ERICOÌDES (Lin. spec. 1104.) stem suffruticose, round, twisted, small; leaves linear, acute, much crowded, dotted, glaucous, small; sepals acute, hardly glandular. ♄. F. Native of Spain, Portugal, and the Levant. Cav. icon. 2. p. 20. t. 122. —Pluk. phyt. t. 93. f. 5.

Heath-like St. John's-wort. Fl. June, Sept. Clt. 1821. Sh. ½ to 1 foot.

SECT. V. BRA'THYS (the Greek name of the savin-tree, which is from *βραζω, brazo,* to overheat; in allusion to the habit of the shrubs, which resemble savin-tree or juniper). Chois. prod. p. 58. D. C. prod. 1. p. 553. Calyx of 5 entire equal sepals, usually very like the leaves. Stamens numerous, disposed in bundles. Styles 3-4. Subshrubs, with axillary, solitary flowers, and imbricate, whorled, or crowded leaves, which are usually linear-awl-shaped.

*** *Styles 3, with simple stigmas.*

150 H. STRUTHIOLÆFÒLIUM (Juss. ann. mus. 3. p. 160. t. 16. f. 2.) stem slender, chinky; branches adpressed; leaves opposite, with revolute margins, without dots, those at the top of the branches imbricate; sepals lanceolate, without dots; petals lanceolate. ♄. S. Native of Peru.

Var. β, minimum (D. C. prod. 1. p. 553.) stature smaller.

Var. γ, strictum (D. C. prod. 1. p. 553.) branches longer, straight. H. strictum, H. B. et Kunth, nov. gen. amer. 5. p. 190.

Struthiola-leaved St. John's-wort. Shrub 1 foot.

151 H. ACERO'SUM (H. B. et Kunth, nov. gen. amer. 5. p. 187. t. 457.) branches scabrous, tetragonal; leaves all imbricate, feathery, thickish; sepals lanceolate-oblong; petals unequal-sided, obovate. ♄. S. Native of South America on the Andes about Quito.

Feathery-leaved St. John's-wort. Shrub 1 foot.

152 H. ACICULA'RE (H. B. et Kunth, nov. gen. amer. 5. p. 190.) branches scabrous, straight; leaves needle-shaped, spreading; flowers monogynous, middle-sized; sepals lanceolate; petals pointed. ♄. S. Native of South America near Loxa.

Needle-leaved St. John's-wort. Shrub 1 foot.

153 H. LARICIFO'LIUM (Juss. ann. mus. 3. p. 160. t. 16. f. 1.) stem round, scabrous, with spreading branches; leaves lanceolate, tapering to both ends, crowded; sepals lanceolate, without dots; petals lanceolate; styles very long; stigmas thick. ♄. S. Native of Peru.

Larch-leaved St. John's-wort. Shrub 1 foot.

154 H. THUYOÌDES (H. B. et Kunth, nov. gen. amer. 5. p. 187. t. 456.) branchlets scabrous, tetragonal, spreading; leaves decussately-opposite, ovate, acutish; flowers solitary; sepals elliptical-oblong; petals obovate; stigmas obtuse. ♄. S. Native of South America on the Andes about Quindiu.

Thuja-like St. John's-wort. Shrub 1 foot.

155 H. CARACCASA'NUM (Willd. spec. 3. p. 1458.) branches tetragonal, winged; leaves ovate-oblong, acute, approximate, somewhat imbricate; flowers terminal and lateral; stigmas thick, truncate. ♄. S. Native of South America, near Caraccas.

Caraccas St. John's-wort. Shrub 1 foot.

156 MEXICA'NUM (Lin. amœn. 8. p. 322. t. 8. f. 2.) branches somewhat tetragonal, ringed; leaves imbricate, ovate-oblong, obtuse, fan-nerved, smooth, viscid, dotted beneath; flowers solitary, terminal; stigmas depressed, capitate. ♄. S. Native of South America at Santa Fe de Bogota. H. Mutisiànum, H. B. et Kunth, nov. gen. amer. 5. p. 188.

Mexican St. John's-wort. Shrub 3 feet.

157 H. REVOLU'TUM (Vahl. symb. 1. p. 66.) branches wrinkled, somewhat tetragonal at the base, but 2-edged at the apex; leaves linear-lanceolate, approximate, revolute at the base; styles joined together. ♄. F. Native of Arabia Felix on the mountains. H. scàbrum? Lin. amœn. 4. p. 287. H. Kalmiànum, Forsk.

Revolute-leaved St. John's-wort. Shrub 1 foot.

158 H. NI'TIDUM (Lam. dict. 4. p. 160.) stem round; branches rather angular; leaves very narrow, without dots; sepals rather unequal; styles joined. ♄. S. Native of?

Shining-leaved St. John's-wort. Shrub 1 foot.

159 H. FASCICULA'TUM (Lam. dict. 4. p. 160. but not of Lapeyr.) stem round, compressed at the top; branches erect; leaves dense, without dots, channelled, with somewhat revolute margins; sepals equal, erect; styles joined. ♄. F. Native of Carolina. H. aspalathoìdes, Pursh, fl. sept. amer. 2. p. 376. Branches somewhat dichotomous. Leaves in fascicles, linear, acute. Flowers solitary, axillary, almost sessile. Stamens shorter than the petals.

Fascicled-leaved St. John's-wort. Fl. July, Aug. Clt. 1811. Shrub 1 foot.

160 H. TENUIFO'LIUM (Pursh, fl. sept. amer. 2. p. 377.) branches angular; leaves crowded, as if they were in whorled fascicles, filiform, linear, convex, obtuse, sessile; peduncles axillary at the top of the branches, 1-3-flowered; styles connected together; sepals leaf-formed. ♄. F. Native of Georgia. H. fasciculàtum, Mich. fl. bor. amer. 1. p. 80. H. Michaúxii, Poir. dict. suppl. 3. p. 696. H. fasciculàtum, var. β, laxifòlium. D. C. prod. 1. p. 554. Resembles the foregoing species, but differs in the branches being angular, and in the leaves being less fascicled.

Fine-leaved St. John's-wort. Shrub 1 foot.

**** *Styles 5, with capitate stigmas.*

161 H. BRA'THYS (Lam. dict. 4. p. 152.) stem round, with adpressed branches; leaves dense, channelled at the apex, without pellucid dots; margins of the sepals somewhat membranaceous; styles usually 5, rarely 4. ♄. S. Native of New Granada near Santa Fe de Bogota. Smith, icon. ined. t. 41. Bráthys junipérina, Lin. fil.

Var. β, junipérinum (D. C. prod. 1. p. 554.) leaves more robust; flowers larger. H. junipérinum, H. B. et Kunth, nov. gen. amer. 3. p. 189. Flowers trigynous.

Savin-like St. John's-wort. Shrub 1 foot.

† *Doubtful species.*

162 H. COCHINCHINE'NSIS (Lour. fl. coch. 472.) flowers trigynous; leaves on short petioles, very dense; stem arboreous; peduncles usually 5-flowered, axillary. ♄. G. Native of Cochin-china in woods. Flowers red or scarlet. Sepals entire, very acute. Stamens disposed in 3 bundles. Capsules 3-celled.

Cochin-china St. John's-wort. Clt. 1821. Shrub 16 feet.

163 H. EMARGINA'TUM (Lam. dict. 4. p. 154.) stem shrubby; flowers trigynous; leaves ovate-oblong, obtuse, stem-clasping, emarginate; sepals lanceolate, somewhat striated. ♄. G. Native of? This species is probably referable to *Elòdea*.

Emarginate-leaved St. John's-wort. Shrub 1 foot.

164 H. VERTICILLA'TUM (Thunb. prod. 137.) stem herbaceous; leaves 4 in a whorl. ♄. G. Native of the Cape of Good Hope.

Whorled-leaved St. John's-wort. Shrub?

165 H. fu'lgidum (Rafin. fl. lud. p. 88.) stem shrubby, tetragonal; branches slender; leaves sessile, linear, spreading; flowers almost sessile, axillary and terminal. ♄. F. Native of Louisiana.

Fulgid St. John's-wort. Shrub 4 feet.

†† *Species only known by name.*

166 H. Cre'ticum supinum, folio subrotundo, flore magno. Tourn. cor. 18.

167 H. orienta'le; foliis subrotundis auritis cauli adhærentibus. Tourn. cor. 18.

168 H. Androsæ'mo hirsuto simile sed glàbrum. Tourn. cor. 18.

169 H. linearifòlio. Tourn. cor. 18.

170 H. latifòlium subhirsutum, caule purpureo villoso. Tourn. cor. 18.

171 H. undula'tum (Schousb. Willd. Zucc.).

172 H. ni'gricans (Zucc. hort. flor.).

Cult. The greater part of the species are very shewy, although they have a common appearance. The hardy herbaceous kinds will grow in any common garden-soil, and are easily increased by dividing the plants at the root or by seeds; the stove, frame, and green-house herbaceous species should be increased in the same manner. The annual sorts only require to be sown in the open border about the beginning of April. The hardy shrubby kinds, being dwarf and shewy, are well fitted for the front of shrubberies; they will thrive in any common garden-soil, and are easily increased, by dividing the plants at the root, by seeds, or by cuttings planted under a hand-glass. The green-house and frame shrubby kinds will thrive well in a mixture of loam and peat, and young cuttings of them will root freely in sand under a bell-glass. The stove shrubby species will thrive in the same kind of soil as that recommended for the green-house species, and young cuttings of them will root in sand under a bell-glass, in heat.

IV. ELO'DEA (from *ελος, elos*, a marsh; habitation of plants). Adanson, Pursh. fl. amer. sept. 2. p. 379.

Lin. syst. *Polyadélphia, Polyándria.* Calyx 5-parted, equal. Petals 5, with nectariferous claws. Stamens 9-15, growing in 3 bundles. Glands between the parcels. Styles 3, diverging. Capsule partly 3-celled, many-seeded. Vegetation similar to *Hypéricum*, but the flowers are usually red. Stems terete.

1 E. petiola'ta (Pursh. fl. amer. sept. 2. p. 379.) leaves oblong, obtuse, tapering down the petiole, full of pellucid dots; flowers on short, axillary peduncles; sepals obtuse; stamens 9-10. ♃. H. Native of North America on the banks of lakes in Virginia and Carolina. Hypéricum petiolàtum, Walt. fl. car. 191. H. axillàre, Michx. fl. bor. amer. 2. p. 81. H. paludòsum, Chois. prod. hyp. p. 43. Flowers yellowish-red.

Stalked-leaved Elodea. Fl. July, Aug. Clt. 1821. Pl. 1 ft.

2 E. campanula'ta (Pursh. l. c.) stem suffruticose; leaves oblong, obtuse, somewhat stem-clasping, full of pellucid dots; flowers stalked, axillary; sepals lanceolate; stamens 9-12. ♃. H. Native of North America from Canada to Carolina, in bogs and wet places. Hypéricum Virgínicum, Lin. spec. 1104. Elòdea Virgínica, Nutt. gen. amer. 2. p. 17.—Andr. bot. rep. 552. Flowers yellowish-red, very handsome.

Var. β, emarginàta (Pursh. l. c.) H. emarginàtum, Lam. dict. 4. p. 154.

Campanulate Elodea. Fl. July, Sept. Clt. 1800. Pl. 1½ ft.

3 E. tubulòsa (Pursh. l. c.) leaves sessile; corolla tubular; stamens connected beyond the middle. ♃. H. Native of Carolina. Pursh discovered it in a dismal swamp in North Carolina. Hypéricum tubulòsum, Walt. fl. car. 191. The flowers are axillary, and almost sessile, solitary, twin or tern; the petals are long and acute, of a pale-red colour.

Tubular-flowered Elodea. Fl. July, Sept. Pl. 1 foot?

Cult. The species of this genus do best in pots, in a peat or vegetable soil, and the pots require to be sunk in water to their middle, either in a pond or a pan of water. All require protection during winter.

V. SARO'THRA (from *σαρωθρον, sarothron*, a besom; appearance of plant). Willd. spec. 1. p. 1515.

Lin. syst. *Pentándria, Trigýnia.* Calyx 5-parted. Petals 5, linear-oblong. Capsule oblong, acute, coloured, 1-celled, 3-valved, with the margins of the valves bearing the seeds.—A small plant, with the inflorescence of *Hypéricum*, much branched; branches erect and trichotomous. Leaves scarcely visible, linear. Flowers solitary, axillary, and terminal, sessile.

1 S. hypericoi'des (Nutt. gen. 1. p. 204.) ♃. H. Native of North America. Hypéricum Saròthra, Michx et Pursh, fl. amer. sept. 2. p. 378. Saròthra gentianoìdes, Willd. spec. 1. p. 1515.

St. John's-wort-like Sarothra. Fl. July. Clt. Pl. ½ foot.

Cult. This plant will grow in any kind of soil, and is easily increased by cuttings or seeds.

VI. LANCRE'TIA (probably from the name of some botanist). Del. fl. æg. p. 69. t. 25. D. C. prod. 1. p. 555.

Lin. syst. *Decándria, Monogýnia.* Calyx of 4 or 5 equal sepals. Petals 4-5. Stamens 10, unconnected, the 5 shortest of these are opposite the petals. Styles 4-5.—A shrub, with oblong, sessile, toothed or crenate leaves, and terminal flowers.

1 L. suffruticòsa (Del. l. c.) ♄. F. Native of Upper Egypt and Nubia. Ascyroìdes Africàna chamædryos fòlio, Lipp. mss. in Bibl. Juss. ex Delile. Leaves small, in fascicles, hoary-hispid. Flowers aggregate, white.

Suffruticose Lancretia. Shrub prostrate.

Cult. This pretty little shrub will require to be protected during winter by a frame. A mixture of loam and peat will suit it well, and young cuttings planted in sand, with a hand-glass placed over them, will strike root freely.

VII. A'SCYRUM (from *a* priv. and *σκυρος, skyros*, hard; that is to say, a plant which is soft to the touch). Lin. gen. 903. Juss. gen. p. 254. Chois. prod. hyp. 60. D. C. prod. 1. p. 555.—Hypericoìdes, Adans. fam. 2. p. 443.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 4 sepals, the 2 outer ones smallest. Petals 4. Stamens numerous, with the filaments disposed in 4 bundles. Styles 1-3.—Sub-shrubs, with sessile, entire leaves, destitute of pellucid dots, but usually furnished with black dots beneath. Flowers few, terminal and axillary, yellow. Plants resembling *Hypéricum*.

1 A. pu'milum (Michx. fl. bor. amer. 2. p. 77.) stem small, simple, quadrangular; leaves oval, obtuse, in fascicles; pedicels 6 lines long, reflexed; flowers with 1 or 2 styles. ♃. F. Native of North America, particularly in the pine barrens of Georgia. Flowers small.

Dwarf Ascyrum. Fl. June, Aug. Clt. 1806. Pl. ¼ foot.

2 A. pauciflòrum (Nutt. gen. amer. 2. p. 15.) plant decumbent, diffuse, with numerous slender stems; leaves approximate, linear-oblong, obtuse; flowers few; pedicels reflexed, each furnished with 2 bracteas at their base; style 1. ♃? F. Native of North America in the woods of Georgia.

Few-flowered Ascyrum. Fl. June, Aug. Pl. decumbent.

3 A. Cru'x-A'ndreæ (Lin. spec. 1107.) stem suffruticose, round; branches erect; leaves ovate-linear, obtuse, usually in bundles in the axils; corymbs terminal; flowers nearly sessile; each pedicel furnished with 2 bracteas; two inner sepals rather orbicular; styles 1-2. ♄. F. Native of North America in sandy fields and woods, from New Jersey to Carolina; and of Jamaica. Hypéricum frutéscens humifùsa, Plum. ed. Burm.

amer. p. 146. t. 152. Chois. prod. hyp. p. 61. Petals narrow, pale-yellow. Flowers in terminal corymbs.

St. Andrew's-cross Ascyrum. Fl. July. Clt. 1759. Shrub 1 foot.

4 A. multicau'le (Michx. fl. bor. amer. 2. p. 77.) stem suffruticose; leaves crowded, oblong-linear, obtuse; peduncles bibracteate, lateral, and terminal. ♄. F. Native of Virginia and Carolina in sandy fields and woods. A. hypericoïdes, Ait. hort. kew. A. Crúx-A'ndreæ var. β, angustifòlium, D. C. prod. 1. p. 555. Styles 1-2, conniving.

Many-stemmed Ascyrum. Fl. July. Shrub 1 foot.

5 A. hypericoi'des (Lin. spec. 1108.) stem suffruticose, round; branches 2-edged; leaves oblong-linear, obtuse, each furnished with 2 glands at the base; two inner sepals somewhat orbicular; styles 3. ♄. F. Native of North America in overflowed open places, from New Jersey to Carolina; and of Jamaica. Flowers terminal, solitary, on short pedicels, larger than those of *A. Crúx-A'ndreæ*.

St. John's-wort-like Ascyrum. Shrub 2 feet.

6 A. sta'ns (Michx. fl. bor. amer. 2. p. 77.) stem shrubby, erect, winged; branches straight; leaves ovate-elliptical, obtuse, glaucous; peduncles axillary, usually 3-flowered; two inner sepals cordate-orbicular; stamens connected at the base; styles 2. ♄. F. Native of Carolina. Vent. malm. p. 90. Hypéricum floridànum, Pluk. t. 412. f. 5.? Hypéricum tetrapétalum, Lam. dict. 4. p. 153. ex Chois. in D. C. prod. 1. p. 555.

Standing Ascyrum. Fl. July, Sept. Clt. 1806. Shrub 2 ft.

7 A. amplexicau'le (Michx. fl. bor. amer. 2. p. 77.) stem dichotomously panicled; leaves stem-clasping, ovate, cordate, sinuately-curled; corymbs naked; styles 3. ♄. F. Native of North America in low grounds and woods, from Virginia to Florida. Hypéricum stàns var. β, Chois. prod. p. 61. The flowers and leaves are longer in this than in any other of the species.

Stem-clasping-leaved Ascyrum. Fl. Jul. Aug. Clt. 1806. Sh. 2 ft.

Cult. A genus of elegant little herbs and shrubs. They require to be protected during winter by a frame; for this purpose they should be grown in pots, as they never exist long in the open border. A mixture of one-half peat, and the other sand, will suit them well; and young cuttings of the shrubby kinds will root in sand under a hand or bell-glass. The herbaceous kinds may be increased by parting the roots in spring. All may be raised from seeds.

Tribe III.

EUCRYPHIE'A (Cambess. in ann. scien. par. vol. 20. p. 402. Aug. 1830). Styles 3-12 (f. 103. *j*.). Seeds flat (f. 103. *f*.), winged.

VIII. CARPODO'NTOS (from καρπος, *carpos*, a fruit, and οδους οδοντος, *odous odontos*, a tooth; cells or carpels bidentate at the apex). Lab. nov. holl. 2. p. 122. Chois. prod. p. 61. D. C. prod. 1. p. 556.

Lin. syst. *Polyándria, Polygýnia.* Styles 5-8. Sepals and petals 4. Stamens numerous, free. Carpels 5-8, woody, 1-celled, opening on the inside, with filiform placentas. Ovary villous.—A tree with stalked, opposite leaves. Flowers white, axillary, solitary. Peduncles each with two scales at their base.

1 C. lu'cida (Lab. voy. rech. Lapeyr. 2. p. 16. t. 18.) ♄. G. Native of Van Diemen's Land. Flowers white.

Shining-leaved Carpodontos. Clt. 1820. Tree 20 feet.

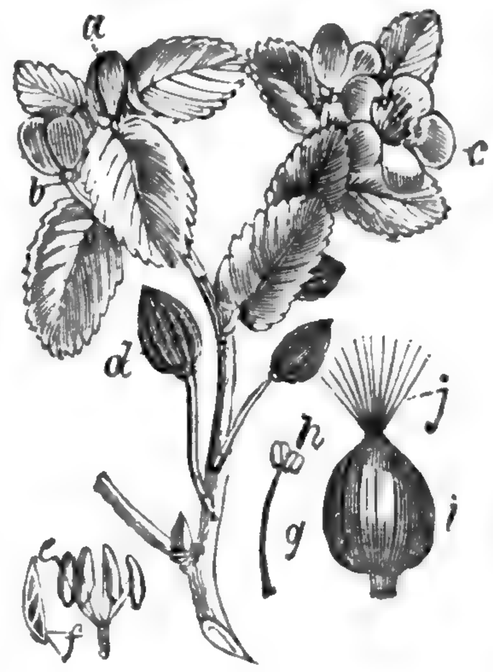
Cult. This tree will thrive well in a mixture of loam, peat, and sand; and young cuttings will root if planted in a pot of sand, with a hand-glass placed over them.

IX. EUCRY'PHIA (from ευ, *eu*, well, and κρυφια, *cryphia*, a cover; in allusion to the flower being covered by a calyptra before expansion) (f. 103. *a*.). Cav. icon. 4. p. 49. t. 372. Chois. prod. hyp. p. 62. D. C. prod. 1. p. 556.

Lin. syst. *Polyándria, Polygýnia.* Calyx of 5 sepals, connected at the base (f. 103. *a*.). Styles usually 12 (f. 103. *j*.). Petals 5 (f. 103. *c*.). Stamens numerous, somewhat connected at the base. Anthers didymous (f. 103. *h*.). Capsules ovate (f. 103. *i*.), with boat-shaped cells, hanging from funicles (f. 103. *e*.).—A tree with opposite leaves, and axillary, solitary flowers. Carpels many, many-seeded (f. 103. *f*.), fixed to the central axils (f. 103. *e*.).

1 E. cordifòlia (Cav. l. c.) ♄. S. Native of South America near San Carlos de Chiloe. A beautiful tree, with cordate-oblong, crenated, downy leaves, and white, stalked flowers. Mellìnia, Molin. (f. 103).

FIG. 103.



Cordate-leaved Eucryphia. Tree 40 feet.

Cult. This fine tree will grow well in a mixture of loam, peat, and sand; and young cuttings will root if planted in a pot of sand with a hand-glass placed over them, in a moderate heat.

X. ELIE'A (in honour of M. Elie de Beaumont, whose works have thrown so much light on the geological revolutions of our globe). Cambess. in Ann. scien. nat. par. Aug. 1830. vol. 20. p. 400. t. 13. Cussònia, Comm. mss. but not of D. C. Lanigerostèma, Chapel. mss. Hypéricum, Spec. Lam. and Chois.

Lin. syst. *Polyadélphia, Polyándria.* Calyx permanent, 5-parted. Petals 5. Stamens numerous, disposed in 3 bundles. Anthers fixed by their middle, 2-celled, bursting lengthwise. Styles 3, crowned by capitate stigmas. Capsule surrounded by the permanent calyx, petals, and stamens, 3-celled; cells divided by incomplete dorsal dissepiments, 3-valved; valves bent in so much at the margins as to constitute perfect dissepiments. Seeds 2 in each cell, each separated by the incomplete intervalvular dissepiment, flat, winged, fixed above the base of the central, filiform, trigonal receptacle. Embryo flat, near the hylum of the seed.—A shrub, with cruciately-opposite, jointed branches and leaves. Flowers cymose, yellow.

1 E. articula'ta (Cambess. l. c. p. 401. t. 13.) ♄. S. Native of Madagascar. Hypéricum articulàtum, Lam. dict. 4. p. 569. Chois in D. C. prod. 1. p. 546. Leaves oblong-obovate, with entire, revolute margins, coriaceous, full of pellucid and black dots, feather-nerved. Cymes of flowers axillary and terminal; pedicels tetragonal. Segments of calyx ovate, obtuse, marked with black lines. Petals imbricate in the bud, 3 times longer than the calyx. Filaments woolly, unequal.

Jointed-stemmed Eliea. Shrub 4 to 10 feet?

Cult. This shrub will grow freely in a mixture of loam and peat, and cuttings will root freely in sand under a hand-glass, in a moist heat.

XI. CRATO'XYLUM (from κρατος, *cratos*, strength, and ξυλον, *xylon*, wood; wood strong and hard). Blum. bijdr. ex Schlecht. Linnæa. 1. p. 667.

Lin. syst. *Polyadélphia, Polyándria.* Calyx profoundly 5-

parted, permanent. Petals 5. Stamens numerous, collected into 3 bundles at the base. Styles and stigmas 3. Capsule rather membranous. 3-celled, 3-valved, with a dissepiment in the middle of each valve. Seeds numerous, compressed, ending above in a leafy wing. Embryo straight, exalbuminous, with an inferior radicle.

1 C. Hornschu'chii (Blum. l. c.) ♄. S. Native of Java. A tall tree, with opposite, oblong-lanceolate leaves, which stand on short petioles, and terminal panicles of yellow? flowers.

Hornschuch's Cratoxylum. Tree 40 feet.

Cult. Loam and peat will be a good mixture for this tree, and young cuttings will readily root if planted in sand under a hand-glass, in heat.

XII. HARO'NGA (Ronga is the name of *H. Madagascariénsis* in Madagascar). Pet. Th. gen. nov. madag. no. 49. Chois. prod. hyp. 33. D. C. prod. 1. p. 541. Harongàna, Lam. ill. t. 645.—Arongàna, Pers. ench. 2. p. 91. Hæmocárpus, Noronh. Spreng.

Lin. syst. *Polyadélphia, Polyándria.* Berry drupaceous, 2-3-5-celled. Styles and stigmas 5. Stamens 15, connected in 5 equal bundles at the base; these bundles alternate with the scales on the ovary. Sepals and petals 5.—Shrubs with branching stems, and the flowers are disposed in branching, many or few-flowered panicles, which are yellow.

§ 1. *Leaves entire.*

1 H. Madagascarie'nsis (Chois. prod. hyp. p. 34.) stem round; leaves elliptic-lanceolate, large, on long stalks; corymbs terminal, very large, and very branchy. ♄. S. Native of Madagascar and Bourbon. Arongària paniculàta, Pers. ench. 2. p. 91. Hæmocárpus paniculàta, Spreng.

Var. β, pubéscens (D. C. prod. 1. p. 542.) leaves smaller and more pubescent. ♄. S. H. pubéscens, Poir. encycl. 4. p. 721.

Madagascar Haronga. Clt. 1822. Shrub 10 feet.

2 H. lanceola'ta (Chois. mss.) stem angular; leaves ovate-lanceolate, 1-2 inches long, very smooth, on short petioles; corymb terminal, few-flowered. ♄. S. Native of Madagascar. Hæmocárpus corymbòsa, Spreng.

Lanceolate-leaved Haronga. Shrub 8 feet.

3 H. revolu'ta (Chois. mss. D. C. prod. 1. p. 542.) leaves ovate-oblong, obtuse, with revolute margins, very large, with brownish nerves; corymbs straight, few-flowered. ♄. S. Native of Madagascar. Hæmocárpus, Spreng.

Revolute-leaved Haronga. Shrub 4 feet.

§ 2. *Leaves crenate.*

4 H. mollu'sca (Pers. ench. 2. p. 91.) leaves lanceolate, acuminated, obsoletely crenated; peduncles axillary, 3-4-flowered. ♄. S. Native of Madagascar.—Pluk. alm. t. 241. f. 5.

Molluscous Haronga. Shrub 4 feet.

5 H. crena'ta (Pers. ench. 2. p. 91.) leaves ovate, blunt, large, broadly crenated; peduncles axillary, many-flowered. ♄. S. Native of Madagascar.—Pluk. alm. t. 242. f. 1.

Crenated-leaved Haronga. Shrub 12 feet.

6 H. axilla'ris; leaves oblong, tapering to both ends, smooth, and opaque above, discoloured beneath; peduncles axillary, aggregate, shorter than the leaves. ♄. S. Native of Madagascar. Harónga, no. 49. Willd. herb.

Axillary-flowered Haronga. Shrub.

Cult. These shrubs will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

Order XLI. GUTTI'FERÆ (from *gutta*, a drop, and *fero*, to bear; the trees when broke yield a quantity of yellow gluten). Juss. gen. p. 243. D. C. prod. 1. p. 557.

Calyx of 2-4-sepals, rarely many-sepalled or 5 (f. 104. *a.*) -6-parted. Sepals imbricate, usually cruciately disposed, outer ones shortest. Petals hypogynous, 4 (f. 104. *b.*) -6, rarely 8-10, usually yellow, free, alternate with or opposite the calycine leaflets. Stamens indefinite (f. 104. *c.*), rarely definite, hypogynous; filaments sometimes free, sometimes connected at the base, or in bundles (f. 104. *c.*). Anthers adnate, 2-celled, rarely 1-celled (as in *Havètia*), bursting by longitudinal chinks, rarely by pores at the apex. Receptacle fleshy, rarely drawn out into a 5-lobed disk, as in *Chrysòpia.* Style simple or nearly wanting, rarely with the stigmas distinct, subsessile (f. 104. *e.*). Ovary 2-8-celled, rarely 1-celled, as in *Calophýllum;* cells containing 1 or many ovulæ. Ovulæ fixed to the inner angle or base of the cells. Fruit sometimes capsular and dehiscent, sometimes fleshy (f. 104. *f.*) and indehiscent or drupaceous, 2 or many-celled, rarely 1-celled. Seeds wingless, usually arillate. Seed covering thin and papery. Albumen wanting. Embryo straight, with a small radicle, and large, coadunate, thick, entire cotyledons.

The *Guttíferæ* contains trees natives of the hottest parts of the world, and well known by their thick, entire, opposite leaves, and resinous juice. In the countries where they grow they are of great importance. The *Magostàna* bears a fruit, the equal of which is supposed not to exist. The gamboge is the inspissated juice of *Garcínia Cambògia* and *G. Morélla;* the juice of others is found an efficacious vermifuge, and also a remedy for the chiggers, one of the worst pests of equinoxial America. The flowers of all being shewy, and the properties interesting, every species deserves cultivation. The seeds do not retain their vegetative power for any length of time, therefore the surest way to obtain plants from the places of their natural growth, is to sow the seeds in tubs or boxes of earth, and when the plants have obtained strength, they may be brought to Europe, but there should be care taken in their passage to screen them from the spray of the sea, also not to give them too much water.

Guttíferæ is so nearly allied to the *Ternstrœmiàceæ* that it is difficult to distinguish the one from the other; in the *Ternstrœmiàceæ* the leaves are alternate, but this character offers a few exceptions, but in the *Guttíferæ* they are always opposite. In *Ternstrœmiàceæ* the calyx and corolla are always separate, but in *Guttíferæ* they are usually connected; in the first the petals are usually connected at the base, and twisted in æstivation; in the second the petals are always free and convolute in æstivation. The seeds in *Ternstrœmiàceæ* are either furnished with albumen or terminated by a prolonged membrane; in *Guttíferæ* these characters are always wanting. *Guttíferæ* differs from *Hypericíneæ* by the branches, leaves, and peduncles being articulated, by the seeds being large and usually solitary in the cells, by the anthers being adnate, not articulated at the summit. *Ternstrœmiàceæ* is distinguished from *Hypericíneæ* in the leaves being usually alternate, and in the seeds being furnished with albumen.

Synopsis of the Genera.

TRIBE I.

CLUSIE'Æ. *Ovary many-celled; cells* 1 *or many, ovulate. Fruit capsular, dehiscent, many-celled.*

1 VERTICILLA'RIA. Sepals 2. Petals 4. Stamens numerous. Style wanting. Stigma concave, 3-lobed. Capsule oblong, rather trigonal, 3-celled, 3-valved. Seeds solitary, oblong.

2 CLU'SIA. Flowers dioecious. Sepals 4, bibracteate at the base. Petals 4-8. Stamens numerous; the male flowers free. Anthers bursting outwards. Stigmas 5-12, thick, sessile in the female flowers. Capsule 5-9-celled, 5-9-valved. Seeds egg-shaped.

3 TOVOMI'TA. Sepals 2-4, bractless. Petals 4, rarely 6-10. Stamens 20-30, free. Anthers obliquely adnate. Styles 4-5, very short, each terminated by a stigma. Capsule 4-5-valved.

4 ARRU'DEA. Calyx many-leaved, imbricate. Petals 9-10, imbricate. Stamens numerous, closely connected. Anthers opening by 2 pores at the apex. Style short, crowned by an 8-lobed stigma. Ovary 8-celled; cells 1-2-seeded?

5 HAVE'TIA. Flowers dioecious. Sepals 4, petals 4, both orbicular. Anthers 4, alternating with the petals, immersed in the receptacle, 1-celled, 3-valved at the apex? Female flowers unknown.

TRIBE II.

CHRYSOPIE'Æ. *Ovary many-celled; cells containing many ovulæ. Fruit fleshy, indehiscent, many-celled.*

6 MORONO'BEA. Calyx 5-parted, bractless. Petals 5. Stamens 15-20, joined into a tube, which is deeply 5-cleft. Anthers adnate to the tube, bursting outwards. Stigmas 5, nearly sessile. Ovary 5-celled; cells containing 5 ovulæ.

7 CHRYSO'PIA. Sepals 5, bractless. Petals 5, inserted on the outside of the disk. Stamens joined into a thick urceolus at the base, profoundly 5-6-cleft at the apex. Style 5-cleft at the apex. Fruit fleshy, 5-celled.

TRIBE III.

GARCINIE'Æ. *Ovary many-celled; cells containing* 1 *ovulæ. Fruit fleshy* (f. 104. *f.*), *indehiscent, many-celled.*

8 MAMME'A. Sepals 2, deciduous, bractless. Petals 4-6, deciduous. Stamens free, or a little connected at the very base. Anthers bursting at the sides. Style short, crowned by a 4-lobed stigma; lobes emarginate. Fruit fleshy, 2-3-4-celled, with a large thick seed in each cell.

9 PENTADE'SMA. Sepals 3-4, permanent. Petals deciduous. Stamens numerous, collected into 5 bundles. Fruit fleshy, 3-5-celled; cells containing each a large, angular, thick seed.

10 RHEE'DEA. Calyx wanting? Petals 4. Stamens numerous. Style 1, crowned by a funnel-shaped stigma. Fruit fleshy, 3-seeded.

11 GARCI'NIA. Sepals 4, bractless, permanent. Petals 4, deciduous. Stamens 12-20, free. Anthers bursting outwards. Style short, crowned by a 4-8-lobed stigma. Fruit fleshy, 4-8-celled; cells each containing one large, thick seed.

12 STALA'GMITIS. Flowers dioecious (f. 104. *e.*) or hermaphrodite (f. 104. *c.*). Sepals 4-5 (f. 104. *a.*), permanent, bractless. Petals 4-5 (f. 104. *b.*), deciduous. Male flowers with a fleshy, 4-5-lobed receptacle, usually bearing many imperfect anthers (f. 104. *c.*). Stamens monadelphous, or disposed in 4-8 bundles (f. 104. *c.*). Anthers didymous, bursting at the sides. Hermaphrodite flowers, with stamens disposed into 4-8 bundles (f. 104. *c.*). Style short, crowned by a 3-5 (f. 104. *e.*) -8-lobed stigma. Fruit fleshy, 3-5-8-celled; cells containing one arillate seed each.

TRIBE IV.

CALOPHYLLIE'Æ. *Ovary* 1-2-*celled; cells containing* 1-2-*ovulæ. Fruit drupaceous, indehiscent.*

13 MESU'A. Sepals 4, bractless, permanent. Petals 4. Stamens filiform, numerous, connected at the very base. Anthers fixed by their base, bursting at the sides. Ovary 2-celled; cells containing 2 ovulæ. Fruit 1-celled from abortion, 1-4-seeded. Seeds egg-shaped.

14 CALOPHY'LLUM. Sepals 2-4, bractless. Petals 4, rarely 2. Stamens definite or indefinite, short, free or connected at the very base. Anthers fixed by their base, bursting inwards. Style twisted, crowned by a capitate, usually lobed stigma. Fruit 1-celled, containing one globose or egg-shaped seed.

† *Genera allied to Guttiferæ, but are not sufficiently known.*

15 MACA'NEA. Fruit baccate, large, pear-shaped, 1-celled, pulpy inside, 4-6-seeded. Seeds fixed laterally to the receptacle, ovate, coriaceous, imbedded in the pulp.

16 SINGA'NA. Calyx 3-5-parted. Petals 3-5, unguiculate, with a serrulated limb. Stamens numerous. Anthers roundish. Style incurved, crowned by a concave, capitate stigma. Capsule long, cylindrical, 1-celled, many-seeded, Seeds large, enwrapped in pulp, fixed to the receptacle.

17 MACO'UBEA. Fruit the shape of an orange, rather compressed, 1-celled, many-seeded. Seeds oblong, arillate, fixed to the parietes of the fruit.

Tribe I.

CLUSIE'Æ. Ovary many-celled; cells 1 or many, ovulate. Fruit capsular, dehiscent, many-celled.

I. VERTICILLA'RIA (from *verticillum*, a whorl; the branches are disposed in a regular whorl at the top of the tree). Ruiz et Pav. syst. fl. per. p. 140. Chlorómyrum, Pers. ench. 1. p. 73.

LIN. SYST. *Polyándria, Monogýnia.* Calyx of 2 coloured sepals. Petals 4. Stamens numerous; filaments filiform; anthers ovate. Style none. Stigma concave, 3-lobed. Ovary oblong, somewhat 3-lobed. Capsule oblong, rather trigonal, 3-celled, 3-valved; valves corky. Seeds solitary, oblong.—A tree with oblong, acuminated, entire leaves and slender branches.

1 V. PERUVIA'NUM. ♄. S. Native of Peru. Chlorómyrum verticillàtum, Pers. ench. 1. p. 73. Ruiz et Pav. fl. per. p. 18. t. 15. f. 4.

Peruvian Verticillaria. Tree.

Cult. This tree will thrive well in light loam mixed with a little peat; and ripe cuttings will root in sand under a hand-glass, in heat.

II. CLU'SIA (in honour of Charles de le Cluse or Clusius, of Artois, an acute botanist, and author of Historia Plantarum and many other works; died in 1609). Lin. gen. no. 1154. Juss. gen. p. 256. D. C. prod. 1. p. 558.—Quapòya, Aubl. guian. Xánthe, Willd.

LIN. SYST. *Polygàmia, Dioècia.* Calyx of 4 imbricate, coloured, permanent sepals, outer ones smallest, usually bibracteate at the base. Corolla of 4-6 deciduous petals. Stamens numerous in the male flowers, rarely definite, free, in the female flowers few and sterile, connected at the base. Style wanting. Stigmas 5-12, radiately-peltate, sessile, permanent. Flowers usually polygamous, and in the female flowers the ovary is surrounded by a short staminiferous nectary. Capsule fleshy, coriaceous, 5-12-celled, 5-12-valved, opening from the top to the base, with a dissepiment in the middle of each valve. Placenta thick, triangular, central. Seeds egg-shaped, enwrapped in pulp, suspended from the inner angle of the cells. Embryo straight, inverted. Cotyledons separable.—Trees and shrubs, usually parasitical, abounding in viscid juice, with large, coriaceous, opposite leaves, and usually tetragonal stems. The genera *Quapòya* and *Clùsia* are so similar in habit, the internal fabric of the flowers and fruit are too little known, and the number and form of the stamens of too slight a character to separate them.

§ 1. *Clùsia* (*see Genus*). *Stamens numerous.*

1 C. RO'SEA (Lin. spec. 1495.) flowers polygamous; calyx 5-6-leaved, rose-coloured; tops of dense nectaries awl-shaped; stigmas 8-12, leaves obovate, obtuse, veinless, sometimes emarginate, on short, striated petioles. ♄. S. Native of Carolina, St. Domingo, and many other parts of America within the tropics. Jacq. amer. 270. pict. 131. Catesb. car. t. 99. A parasite on rocks and trees. Flowers large, beautiful rose-coloured in the Brazilian plant, according to St. Hilaire the petals are red beneath the middle, and from the middle to the apex white. Fruit large, opening in 8 parts, containing many scarlet glutinous seeds, like those of the *Pomegranate.* The resin is used to cure sores in horses, and instead of tallow for boats.

Rose-coloured-flowered Balsam-tree. Fl. July, Aug. Clt. 1692. Shrub 7 to 20 feet.

2 C. A'LBA (Lin. spec. 1495.) flowers usually hermaphrodite; calyx many-leaved; corolla 5-8-petalled, white; tops of dense nectaries retuse, naked, or with 5-10 short stamens; stigmas 5-6; leaves like those of the preceding, but not emarginate. ♄. S. Native of South America. Jacq. amer. 271. t. 166. pict. 131. t. 250. Plum. gen. 22. icon. 87. f. 1. Flowers large, white, and inelegant. Fruit scarlet, 6-celled, 6-valved; seeds involved in scarlet pulp; the birds are very fond of them, and when the capsules burst open, hang over them on the wing, and pluck out the seeds with the pulp adhering. The tree is parasitic, and very common in the woods of Martinico, where it is called *Aralie.* The Caribbees use the tenacious balsamic juice, which is of a greenish colour, but becoming of a brownish red on being exposed to the air, for painting their boats.

White-flowered Balsamic-tree. Clt. 1752. Tree 30 feet.

3 C. FLA'VA (Lin. spec. 1495.) flowers polygamous; calyx many-leaved; corolla 4-petalled, yellow; stamens numerous, short; stigmas about 12; leaves as in both the preceding. ♄. S. Native of Jamaica and many of the other West India islands, on the lower hills, delighting in a dry soil. Jacq. amer. 272. t. 167. pict. 132. t. 251. Sloan. jam. 2. p. 91. t. 200. f. 1. Flowers yellow. The resinous juice is sometimes used among the negroes in Jamaica as a vulnerary; it has no extraordinary smell or pungent taste.

Yellow-flowered Balsam-tree. Clt. 1759. Tree 15 feet.

4 C. VENÒSA (Lin. spec. 1495.) calyx 4-leaved; corolla 4-petalled, white; stamens numerous; stigmas 5; leaves obovate, obtuse, veiny. ♄. S. Native of Martinico on moist mountains.—Plum. amer. t. 87. f. 2. Leaves serrated, of a shining brown beneath. Young branches downy. Flowers in loose spikes at the ends of the shoots. This tree is called in Martinico *Paletwoier de montagne.*

Veiny-leaved Balsam-tree. Clt. 1733. Tree 30 feet.

5 C. PEDICELLA'TA (Forst. fl. aus. no. 390.) calyx 4-leaved; corolla 4-petalled, yellow? leaves obovate-oblong, veiny; cymes axillary. ♄. S. Native of New Caledonia.

Pedicelled-flowered Balsam-tree. Fl. Sept. Tree 14 feet.

6 C. CRIU'VA (St. Hil. fl. bras. 1. p. 317. t. 65.) leaves stalked, obovate, or obovate-lanceolate, veiny, white beneath; flowers terminal, sub-corymbose, 5-petalled. ♄. S. Native of Brazil in the province of St. Paul, where it is called *Criuva* by the natives. Ovary 5-celled. Stigma 5-lobed. Flowers white.

Criuva Balsam-tree. Shrub 5 to 6 feet.

7 C. GAUDICHAU'DI (Chois. mss. St. Hil. fl. bras. 1. p. 317.) leaves stalked, obovate, or subelliptic, nearly veinless; flowers terminal, cymose, 5-petalled. ♄. S. Native of Brazil. Flowers whitish. Stigma 5-lobed.

Gaudichaud's Balsam-tree. Shrub 5 to 6 feet.

8 C. RETU'SA (Poir. dict. 5. p. 183.) calyx of 8 unequal sepals; corolla 6-petalled; stigmas very numerous; capsules globular; leaves obovate, retuse, veiny. ♄. S. Native of South America. Lam. ill. t. 852.

Retuse-leaved Balsam-tree. Tree.

9 C. NEMORÒSA (Meyer. prim. esseq. p. 203.) flowers polygamous; calyx 6-8-leaved; corolla 4-petalled, white, but purple within; sterile stamens awl-shaped, intermixed with others; stigmas 5; leaves oblong-obovate, acute, approximate, veiny. ♄. S. Native of Essequebo in the island Wacanama. Flowers white, purple within.

Grove Balsam-tree. Tree 20 feet.

10 C. PARVIFLÒRA (H. B. in Willd. spec. 4. p. 976.) corolla white, 5-petalled, about equal in length with the calyx; leaves obovate, obtuse, veinless. ♄. S. Native of South America in the island of Margarita. This species is much smaller than *C. álba* in every part.

Small-flowered Balsam-tree. Tree 20 feet.

11 C. ELLI'PTICA (H. B. et Kunth, nov. gen. amer. 5. p. 199.) flowers white; calyx 4-sepalled; stigmas 6; leaves sessile, elliptical, rounded at both ends; peduncles 2-3-flowered. ♄. S. Native of Peru on the Andes, near Loxa. Flowers white.

Elliptical-leaved Balsam-tree. Tree 12 to 24 feet.

12 C. LANCEOLA'TA (St. Hil. fl. bras. 1. p. 318.) leaves stalked, lanceolate, veiny; flowers terminal, sub-corymbose, 6-8-petalled. ♄. S. Native of Brazil near Rio Janeiro. Petals white? veiny.

Lanceolate-leaved Clusia. Shrub 6 to 7 feet.

13 C. MULTIFLÒRA (H. B. et Kunth, nov. gen. amer. 5. p. 200.) calyx 4-sepalled; corolla 5-petalled, a little longer than the calyx; stigmas 5; leaves sessile, obovate, rounded at the apex; peduncles many-flowered. ♄. S. Native on the Andes about Quindiu. Flowers white?

Many-flowered Balsam-tree. Tree.

14 C. VOLU'BILIS (H. B. et Kunth, nov. gen. amer. 5. p. 200.) stigmas 6; stem twining; leaves stalked, elliptical, blunt at both ends, thick, coriaceous. ♄. C. S. Native, growing along with the preceding species. Flowers white?

Twining Balsam-tree. Shrub tw.

15 C. SE'SSILIS (Forst. prod. 391.) flowers axillary, solitary, almost sessile, 4-petalled; leaves obovate and elliptical. ♄. S. Native of the island of Togatabu in the South Seas.

Sessile-flowered Balsam-tree. Tree.

§ 2. *Quapòya* (*Quapoy is the Caribbean name of C. Quapòya*). *Stamens definite, 5 or 6.*

16 C. Quapòya (Chois. mss. D. C. prod. 1. p, 559.) flowers dioecious, stalked; calyx of 5 or 6 sepals; corolla of 5 or 6 yellow petals; nectary short, 4-5-lobed; stigmas 5; fruit globose; leaves obovate, acute. ♄. ◡. S. Native of Guiana in the woods. Quapòya scándens, Aubl. guian. 2. p. 898. t. 343. C. microcárpa, Spreng. syst. 2. p. 5. Xánthe, Schreb. A climbing shrub with yellow flowers, when broke or cut yields a white transparent juice. It is called *Quapoy* in Guiana. Panicle terminal, diffuse, dichotomous.

Quapoy Balsam-tree. Shrub cl.

17 C. Pa'na-pana'ri (Chois. mss. D. C. prod. 1. p. 559.) flowers dioecious, almost sessile; fruit oblong; leaves ovate-oblong, acute, small. ♄. ◡. S. Native of Guiana in woods. Quapòya Pána-panàri, Aubl. guian. 2. p. 901. t. 344. C. macrocárpa, Spreng. syst. 2. p. 599. Xánthe parviflòra, Willd. Panicle terminal, trichotomous. Flowers yellow, like those of the preceding. This climbing shrub is called *Pana-panari* in Guiana. When cut it yields a yellow juice.

Pana-panari Balsam-tree. Shrub cl.

18 C. acumina'ta (Spreng. syst. 2. p. 599.) leaves roundish, tapering abruptly to both ends, ending in a spiny point, veiny beneath; flowers axillary, on short peduncles. ♄. S. Native of Porto-Rico on the higher mountains. A climbing shrub with white? flowers.

Acuminated-leaved Balsam-tree. Shrub cl.

A species hardly known.

19 C.? sessiliflòra (Poir. dict. 5. p. 183.) leaves obovate, somewhat veined; flowers sessile, clustered. ♄. S. Native of Madagascar.

Sessile-flowered Balsam-tree. Tree.

Cult. All the species of this genus grow well in light sandy soil, and the pots will require to be well drained with potsherds. Cuttings root freely in sand under a hand-glass, in heat.

III. TOVOMI'TA (Tovomite is the Caribbean name of *T. Guianénsis*). Aubl. guian. 2. p. 956.—Mariálva, Vand. in Rœm. script. bras. p. 118.—Beauharnòisia, Ruiz. et Pav. ann. mus. 11. p. 71.—Ochrocárpus, Pet. Th. gen. nov. mad. p. 15.—Micranthèra, Chois. mem. hist. nat. par. 1. t. 11 and 12.

Lin. syst. *Polyándria, Tetra-Pentagýnia.* Calyx bractless, of 2-4 sepals. Petals 4, rarely 6-10. Stamens 20-15, free, in many series; filaments thick; anthers small, at the top of the filaments, obliquely adnate. Styles 4-5, very short or wanting, each terminated by a thick stigma. Capsule crowned by the permanent styles and stigmas, 4-5-celled, 4-5-valved; cells 1-seeded; seeds enwrapped in pulp. Embryo thick, with a small radicle.—Trees, rarely shrubs. Leaves lined or full of pellucid dots. Flowers racemose, rarely cymose, axillary and terminal, dioecious, polygamous and hermaphrodite.

1 T. Madagascarie'nsis; calyx of 2 sepals; stamens in 3 series, connected at the very base; stigma 4-6-lobed, sessile; leaves coriaceous, approximate, sometimes 3 in a whorl; pedunceles few-flowered, axillary. ♄. S. Native of Madagascar. Ochrocárpus Madagascariénsis, Pet. Th. gen. mad. p. 15. Flowers white? hermaphrodite.

Madagascar Tovomita. Tree 30 feet.

2 T. Guiane'nsis (Aubl. guian. 2. p. 956. t. 364.) sepals 2; petals 4; stamens in 1 series; style short, crowned by 4 sessile stigmas; leaves ovate-oblong, bluntly acuminated, somewhat stem-clasping, coriaceous, 4-5 inches long, white beneath; peduncles corymbose, dichotomous, thick, terminal; pedicels jointed; petals acutish. ♄. S. Native of Guiana and Brazil. Vand. t. 8. f. 6. Mariálva Guianénsis, Chois mss. D. C. prod. 1. p. 560. Mart. fl. bras. 2. p. 84. Flowers with green petals and white anthers, dioecious.

Guiana Tovomita. Tree 10 feet.

3 T. fructipe'ndula; sepals 2; petals 4; stamens in one series; capsule crowned by 4 distinct styles; leaves oblong, acutely and sharply acuminated, 3 inches long; peduncles filiform, axillary, and terminal, 2-3-flowered, elongated; pedicels jointed. ♄. S. Native of Peru in groves on the Andes at Chicaplaya and of Cayenne. Beauharnòisia, Ruiz et Pav. ann. mus. 11. p. 71. f. 9. Mariálva fructipéndula, Chois. mss. D. C. prod. 1. p. 560. Mart. fl. bras. 1. p. 85. Flowers yellowish, dioecious? Fruit turbinate, pendulous, crowned by the permanent styles. When cut transversely, it yields a quantity of yellow resinous viscid juice, which is also observed in the calyx and anthers. The bark is used by the inhabitants of Chicoplaya in Peru to dye lint of a reddish-purple colour; they also use it as a medicine.

Pendulous-fruited Tovomita. Fl. Jan. Feb. Tree 18 feet.

4 T. uniflòra (Chois. mss. D. C. prod. 1. p. 560. under the name of *Mariálva,*) leaves lanceolate, bluntish; peduncles axillary, 1-flowered, scarcely half an inch long. ♄. S. Native of Guiana. Flowers yellowish, dioecious?

One-flowered Tovomita. Tree 20 feet.

5 T. panicula'ta (St. Hil. fl. bras. 1. p. 315.) leaves oblong-lanceolate, toothed; flowers panicled; calyx 4-leaved. ♄. S. Native of Brazil near Rio Janeiro. Petals green.

Panicled-flowered Tovomita. Shrub 6 feet.

6 T. Brasilie'nsis (Mart. nov. gen. 1. p. 83. t. 167. under *Mariálva,*) leaves broad-lanceolate, acute at both ends, smooth; peduncles in pairs, 1-flowered; petals obtuse. ♄. S. Native of Brazil. Flowers white but at length reddish. Capsule crowned by distinct styles.

Brazilian Tovomita. Tree 20 feet.

7 T. clusiæfòlia; sepals 2; petals 8-10; flowers dioecious; stamens numerous, in many series; fruit crowned by a 6-toothed, peltate stigma; leaves oblong, acute, smooth; peduncles racemose. ♄. S. Native of Cayenne. Clùsia longifòlia, Rich. act. soc. hist. nat. par. 1. p. 113. Micranthèra clusiæfòlia, Chois. in mem. hist. nat. par. 1. p. 11-12. Flowers yellow, dioecious.

Clusia-leaved Tovomita. Clt. 1823. Tree.

Cult. These fine trees will thrive in a mixture of loam, peat, and sand, and ripened cuttings will root freely in sand under a hand-glass, in heat.

IV. ARRU'DEA (in honour of Manoel Arruda da Camara, M. D., who has written on Brazilian plants). Cambess. in mem. mus. 16. p. 421. St. Hil. fl. bras. p. 319.

Lin. syst. *Monadélphia, Polyándria.* Calyx of many imbricate unequal sepals, outer ones smallest. Petals 9-10, imbricate. Stamens numerous, inserted in the conical receptacle, closely connected together into a compact mass; anthers adnate, 2-celled, bursting at the top by 2 pores. Style short, crowned by an 8-lobed stigma, the lobes of which are distinct and wedge-shaped. Ovary immersed in the fleshy receptacle, 8-celled; cells 1 or 2-seeded. A small tree with quite entire stalked leaves, and with solitary polygamous flowers, at the tops of the branches.

1 A. clusioìdes (Cambess. in St. Hil. fl. bras. 1. p. 319. t. 66.) ♄. S. Native of Brazil in the province of Minas Geraes. Leaves obovate or elliptic, veiny. Petals of a pale-red colour. Stigma yellow.

Clusia-like Arrudea. Tree 15 feet.

Cult. A mixture of loam and peat will suit this tree; and ripened cuttings will strike root if planted in sand with a hand-glass placed over them, in heat.

V. HAVE'TIA (in honour of M. Havet, a young botanical collector, who was sent to the island of Madagascar to collect plants, where he died). H. B. et Kunth, nov. gen. amer. 5. p. 204. t. 462.

Lin. syst. *Dioècia, Tetrándria.* Male flowers. Calyx of 4 orbicular, concave sepals, 2 outer ones smaller. Petals 4, orbicular, concave, equal. Receptacle fleshy, orbicular, convex. Anthers 4, alternating with the petals, and immersed in the disk, 1-celled, 3-valved at the apex. Female flowers unknown.—A tree abounding in yellow, clammy juice, with opposite branches, and quite entire obovate leaves, and terminal bractless panicles of flowers. Flowers at the tops of the branches, twin, nearly sessile.

1 H. laurifòlia (H. B. et Kunth, l. c.). ♄. S. Native on the Andes about Popayan. Clùsia tetrándria, Willd. spec. 4. p. 978.

Laurel-leaved Havetia. Tree.

Cult. This tree will grow well in a mixture of loam and peat, and ripened cuttings will root in sand or mould under a hand-glass, in heat.

Tribe II.

CHRYSOPIE'Æ. Ovary many-celled; cells containing many ovulæ. Fruit fleshy, indehiscent, many-celled.

VI. MORONO'BEA (Moronobo or Coronobo is the Caribbean name of *M. coccínea*). Aubl. guian. 2. p. 788. t. 313.—Symphònia, Lin. fil. suppl. p. 302.

Lin. syst. *Polyadélphia, Polyándria.* Calyx 5-parted, bractless, imbricate. Petals 5, alternating with the calycine lobes. Stamens 15-20, joined into a tube at the base, which is deeply 5-cleft at the apex; bearing the anthers on the outside, 3 or 4 on each segment, they are linear, 2-celled, bursting lengthwise behind. Stigmas 5, nearly sessile. Ovary 5-celled; cells containing 5 ovulæ. Fruit fleshy.—Trees with corymbose flowers, rarely solitary, terminal and axillary, hermaphrodite.

1 M. cocci'nea (Aubl. guian. 2. p. 789. t. 313.) bud of flower globose; style very short; leaves oblong, acute at both ends, with an incurved point, coriaceous, without dots. ♄. S. Native of Guiana in moist woods and on mountains. Symphònia globulífera, Lin. fil. suppl. 302. Perhaps *Symphònia esculénta*, Arrud. is not distinct from this. A lofty tree. Leaves approximating at the ends of the branchlets, smooth, glaucous. Flowers about the size of those of *Thèa*, red, axillary, solitary, or in terminal, few-flowered corymbs. The coriaceous rind of the fruit covers the painted seeds, which are covered with a deep yellow mucous substance interposed between them. The resinous juice which flows from all parts of the tree when cut, is used by the Creoles to tar their boats and ropes, and they also make flambeaus of it mixed with other resins of the country. It is also used by the Caribbees to attach the iron and the poison to their arrows.

Scarlet-flowered Moronobea. Tree 40 feet.

2 M. grandiflòra (Chois. in mem. hist. nat. p. 1. D. C. prod. 1. p. 563.) bud of flowers conical-ovate; style very long; flowers larger in all parts than in *M. coccínea;* leaves elliptical-lanceolate. ♄. S. Native of Guiana. Flowers red.

Great-flowered Moronobea. Tree.

Cult. These fine trees will grow in a mixture of loam and peat; and well-ripened cuttings will root in sand, under a hand-glass, in a moist heat.

VII. CHRYSO'PIA (from χρυσος, *chrysos*, gold, and οπυς, *opys*, juice; trees yielding yellow juice when cut). Pet. Th. gen. mad. no. 48.

Lin. syst. *Polyadélphia, Polyándria.* Calyx bractless, of 5 sepals, imbricate. Petals 5, inserted on the outside of the disk. Disk urceolate at the base, sometimes entire at the apex, sometimes 5-lobed. Stamens connected at the base into a thick urceolus, fixed to the inner side of the disk, 5-cleft at the top; each segment bearing 3-5 adnate linear anthers, bursting lengthwise. Style short, 5-furrowed, 5-cleft at the apex, each segment furnished with a peculiar kind of stigma on the inside; segments spreading. Fruit fleshy, 5-celled. Seeds ovate, oblong. Cells of ovary 5-10-ovulate. Trees with terminal, few-flowered corymbs or umbels of hermaphrodite flowers.

1 C. microphy'lla (Hils. et Bojer. ex Cambess. mem. mus. 16. p. 423. t. 4.) leaves spatulate, small; flowers umbellate; disk nearly entire. ♄. S. Native of Madagascar. Flowers white.

Small-leaved Chrysopia. Tree 40 feet.

2 C. fasciula'ta (Pet. Th. l. c.) leaves spatulate, coriaceous; flowers in corymbs; disk 5-cleft. ♄. S. Native of Madagascar. Branches umbellately crowded at the apex. Flowers purple. There is an oil expressed from the seeds.

Fascicled-flowered Chrysopia. Tree 60 feet.

Cult. These beautiful trees will thrive in a mixture of sandy loam mixed with a little peat; and ripe cuttings, not deprived of their leaves, will root readily in sand under a hand-glass, in a moist heat.

Tribe III.

GARCINIE'Æ. Ovary many-celled; cells containing 1 ovulæ. Fruit fleshy, indehiscent, many-celled.

VIII. MAMME'A (Mamey, its vernacular name in South America). Lin. gen. 1156. Juss. gen. 257.

Lin. syst. *Polyándria, Monogýnia.* Calyx bractless, of 2 deciduous sepals. Petals 4-6, deciduous. Stamens numerous, free, or connected at the very base, deciduous; filaments short; anthers adnate, 2-celled, bursting lengthwise at the sides. Style short, crowned by a 4-lobed stigma; lobes emarginate. Fruit crowned by the permanent base of the style, fleshy, 4-celled or 2-3-celled from abortion; cells 1-seeded. Seeds large, thick. Trees with leaves full of pellucid dots. Flowers usually solitary, male or hermaphrodite in different plants.

1 M. America'na (Lin. spec. 731.) leaves obovate, very blunt, quite entire; fruit very large, containing usually 4 large seeds. ♄. S. Native of the Caribbean Islands and the neighbouring continent. Jacq. amer. 268. t. 181. f. 82. pict. 130. t. 248.—Plum. gen. 44. t. 170.—Sloan. jam. 2. p. 123. t. 217. f. 3. A tall handsome tree with a thick, elegant, spreading head. It has a long downright tap root, which renders it very difficult to transplant. The leaves are oval or obovate, shining, leathery, opposite, from 5 to 8 inches in length. Peduncles 1-flowered, short, scattered over the stouter branches. The flowers are sweet-scented, white, an inch and a half in diameter; calyx sometimes 3-sepalled; corolla sometimes 6-petalled; but this arises from 2 of the segments or petals being cut. Fruit large, round, obsoletely 3 or 4-cornered, about the size of a cannon ball; it is covered with a double rind, the outer leathery, a line in thickness, tough, brownish-yellow, the inner thin, yellow, adhering closely to the flesh, which is firm, bright-yellow, has a singular pleasant taste, and a sweet, aromatic smell, but the skin and seeds are very bitter and resinous. It is eaten alone, or cut into slices with wine and sugar, or preserved in sugar. In Martinico they distil the flowers with spirit, and make a liquor which they call *Eau-Creole.* The English and Spaniards call the fruit *Mammee;* and the French *Abricot sauvage*, from the yellowness of the pulp, like that of the apricot. Swartz remarks that the trees which bear hermaphrodite flowers are very lofty, but that the male trees are much smaller. Browne gives the hermaphrodite and male trees as distinct species. He informs us that they are among the largest trees in the Island of Jamaica, abound with a strong resinous gum, and are esteemed

among the best timber trees; that the fruit is large and agreeable, but too strong and gross for a weakly stomach, leaving a bitterness behind it, that continues for a considerable time upon the palate, containing 4 large, oblong, angular seeds, having as many kernels of the same shape.

American Mammee-apple. Clt. 1739. Tree 60 feet.

2 M. emargina'ta (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 561.) leaves obovate, very blunt, emarginate, at the apex; fruit globose, 2-seeded. ♄. S. Native of Mexico. Fruit like that of the preceding, but smaller, eatable. Flowers whitish.

Emarginate-leaved Mammee-apple. Tree 40 feet.

3 M. hu'milis (Vahl. ecl. 2. p. 40.) leaves acute; peduncles longer than the petioles; berry 3-seeded. ♄. S. Native of Montserrat. Fruit eatable?

Dwarf Mammee-apple. Tree.

4 M. Africa'na (Hort. trans. lond. vol. 5. p. 457.) leaves oblong, acuminated; fruit large, round. ♄. S. Native of Sierra Leone on the mountains. A large tree, with long, shining, dark-green leaves, abounding in a yellow resinous gum. The wood is applied to many useful purposes. The fruit is twice the size of a man's fist, the rind is brown and thick, the pulp is yellow, of equal excellence to that of the American *Mammee-apple*.

African Mammee-apple. Tree 60 feet.

Cult. *Mammèa* is a genus of fine fruit-trees. They will grow freely in sandy loam, or a mixture of loam and peat; ripe cuttings, with the leaves not shortened, will root in sand under a hand-glass, in a moist heat. They all require a strong heat to thrive well.

IX. PENTADE'SMA (from πεντε, *pente*, five, and δεσμη, *desme*, a bundle; in allusion to the stamens being disposed in 5 bundles). Hort. trans. lond. vol. 5. p. .

Lin. syst. *Polyadélphia, Polyándria.* Calyx of 4 to 5 permanent sepals. Petals deciduous. Stamens numerous, connected into 5 bundles. Style 1. Berry large, fleshy, crowned by the rudiment of the style. Seeds 3-5, large, angular.—A lofty tree, abounding in yellow greasy juice, with long, lanceolate, coriaceous leaves.

1 P. butyra'cea (Hort. trans. lond. vol. 5. p. 457.). ♄. S. Native of Sierra Leone in the low lands. This tree grows to the height of 40 or 60 feet, but produces its flowers when 20 feet high. The leaves are entire, lanceolate, coriaceous, smooth, shining. The fruit is about the size of the common *Mammee-apple*, inversely pear-shaped, being pointed at the apex, it contains from 3-5 large, angular, brown seeds; the rind is rough, coarse, and of a dark-brown colour. The yellow greasy juice, from which the tree derives its vernacular name, is given out copiously when the fruit is cut or opened; it is mixed by the natives of Sierra Leone with their food, but it is not used by the settlers on account of a strong turpentine flavour which belongs to it; we believe that the juice is that which the *country butter* brought to the market of Freetown is made of. The flowers are very large and shewy, and probably reddish.

Butter and Tallow-tree. Fl. Jan. Clt. 1822. Tree 60 feet.

Cult. The tree is extremely difficult to transplant, on account of the long tap root, which, if broken or cut, will kill it. The root must have sufficient depth of mould to enable it to descend or the plant will not live. It requires a strong moist heat to flourish well. A mixture of loam and peat suits it best, and ripened cuttings, with their leaves not shortened, will probably root in sand under a hand-glass, in a moist heat.

X. RHEE'DIA (in honour of Henry Rheede Van Draakenstein, once governor of a Dutch establishment on the coast of Malabar; author of Hortus Malabaricus in 10 vols. folio). Lin. gen. 641. Juss. gen. p. 258. D. C. prod. 1. p. 564.—Van Rhéedia, Plum. gen. 45.

Lin. syst. *Polyándria, Monogýnia.* Calyx none. Petals 4. Stamens numerous, with oblong anthers. Style 1. Stigma funnel-shaped. Berry ovate, 1-celled. Seeds 2-3, ovate-oblong, fleshy, thick, imbedded in the pulp.—Tree with opposite, blunt, stalked leaves.

1 R. lateriflòra (Lin. spec. 719.). ♄. S. Native of Martinico.—Burm. amer. t. 257. Leaves large, oblong; peduncles axillary, 3-flowered.

Lateral-flowered Rheedia. Tree.

2 R. Java'nica (Hort. kew. Loud. hort. brit. p. 214.). ♄. S. Native of Java. Leaves large, obovate, blunt.

Java Rheedia. Clt. 1820. Tree.

Cult. These fine broad-leaved trees will thrive well in a mixture of loam, peat, and sand; and ripened cuttings will root in sand under a hand-glass, in a moist heat.

XI. GARCI'NIA (in honour of Laurence Garcin, M.D. a French botanist, and traveller in India, author of numerous botanical memoirs). Lin. gen. 594. Juss. gen. 256.—Garcínia and Cambògia, Lin. and Juss.—Mangostàna, Gært. Garcínia species, Chois. in D. C. prod. 1. p. 566.

Lin. syst. *Polyándria, Monogýnia.* Calyx bractless, of 4 permanent sepals. Petals 4, deciduous. Stamens 12-20, free, deciduous; filaments short; anthers adnate, 2-celled, bursting lengthwise behind. Style short, crowned by a 4-8-lobed stigma. Fruit fleshy, 4-8-celled; cells 1-seeded, crowned by the permanent stigmas.—Trees with hermaphrodite or monoecious flowers, usually solitary at the tops of the branches.

1 G. Mangosta'na (Lin. spec. 635.) leaves elliptic-oblong, acuminated; flowers terminal, solitary; corolla red; stigma 6-8-lobed; berry very beautiful and eatable; pericarp spongy. ♄. S. Native of the Molucca Islands, whence it has been transplanted to Java and Malacca.—Plench. icon. t. 360.—Rumph. amb. 1. p. 132. t. 43.—Garc. phil. trans. vol. 38. p. 232. abr. 8. p. 755. t. 8. Mangostàna Garcínia, Gært. fruct. 2. t. 105. The *Mangostan* rises with an upright stem near 20 feet high, sending out many branches on each side, which are opposite. The trunk is full of cracks. The leaves are entire, about 7 or 8 inches long, and about half as much in breadth at the middle, gradually tapering to both ends, of a shining green above, but of an olive colour beneath. The flower resembles a single rose, composed of 4 roundish petals, which are thick at the base, but thinner towards the margins; they are of a dark-red colour. The fruit is round, about the size of a middling orange, and is crowned by the broad peltate-lobed stigma; the rind is like that of the pomegranate, but softer, thicker, and fuller of juice; it is green at first, but changes to a dark-brown, with some yellowish spots; the inside is of a rose-colour, and is divided into several cells by their partitions, as in oranges, in which the seeds are lodged, surrounded by a soft juicy pulp, of a delicious flavour, partaking of the strawberry and the grape, and is esteemed one of the richest fruits in the world. The trees naturally grow in the form of a parabole, and the branches being well garnished with large shining green leaves, they have an elegant appearance, and afford a kindly shade in hot countries, therefore are worthy of cultivation in all those countries where there is warmth enough to ripen the fruit.

It is esteemed the most delicious of the East Indian fruits, and a great deal of it may be eaten without any inconvenience; it is the only fruit which sick people are allowed to eat without scruple. It is given with safety almost in every disorder, and it is said that the late Dr. Solander, in the last stage of a putrid fever at Batavia, found himself insensibly recovering by sucking this delicious and refreshing fruit. The pulp has a most happy

mixture of the tart and sweet, and is no less salutary than pleasant, for which reason in hot climates, with the sweet orange, it is given in any quantity to those who are afflicted with fevers, either of the putrid or inflammatory kind. The dried bark is used with success in dysentery and tenesmus, and an infusion of it is esteemed a good gargle for a sore mouth, or ulcers in the throat. The Chinese dyers use the bark for the ground or basis of a black colour, in order to fix it the firmer. *Mangostama* or *Magostana* is the Malay name of the tree.

Mangostan Garcinia. Clt. 1789. Tree 20 feet.

2 G. co'rnea (Lin. syst. 368.) leaves oblong-elliptic, emarginate; flowers solitary and umbellate, lateral and terminal, drooping; stigma entire; berry the form of a plum. ♄. S. Native of the East Indies in the high remote mountains of Amboyna.—Rumph. amb. 3. p. 55. t. 30. The trunk of this tree is very lofty, but not very thick; it is covered with a black bark. The branches extend wide, and divide into many short branches, which have a pair of leaves at each joint; these are large, from 11 to 15 inches long, and 4 broad, but on old trees shorter, smooth, firm, and shining. The flower rises between the upper leaves, drooping, having the form of a small rose, of a yellow colour. Fruit the size of a plum, crowned by the entire stigma, which appears like a wart. It is of a dusky-brown or smoky colour on the outside, and within it has a mucous pulp, in which lie a few seeds in the shape of a half moon. It has a resinous smell when fresh. The wood is heavy and very hard, like horn, whence Rumphius names it *lignum corneum;* it is used for the handles of tools, and the young trees in building, the old ones being too hard to work.

Horny-wooded Garcinia. Clt. 1817. Tree 30 to 40 feet.

3 G. More'lla (Desrous. in Lam. dict. 3. p. 701.) leaves oblong-elliptic, tapering to both ends; panicles terminal and lateral; berry small, 4-celled, striated, crowned by a 4-lobed stigma. ♄. S. Native of the East Indies? Mangostàna Morélla, Gært. fruct. 2. p. 106. t. 105. Flowers yellowish. Fruit small, eatable. The name is derived from the morella cherry, in allusion to the size and shape of the fruit. Gamboge is also obtained from this tree.

Morella Garcinia. Tree.

4 G. pedunculà'ta (Roxb. hort. beng. p. 42.) leaves obovate-oblong, rounded at the apex, with strong transverse veins; racemes terminal and axillary; pedicels long; flowers large. ♄. S. Native of the East Indies.

Long-peduncled Garcinia. Tree 40 feet.

5 G. Cambò'gia (Desr. in Lam. dict. 3. p. 701.) leaves elliptic, tapering to both ends; flowers terminal, solitary; corollas yellowish; stigma 8-lobed; berry 8-furrowed. ♄. S. Native of Malabar and other parts of the East Indies.—Rheed. mal. 1. p. 41. t. 42. Mangostàna Cambògia, Gært. fruct. 2. p. 106. t. 105. Cambògia Gútta, Lin. spec. 728. Blackw. t. 392. Cambògia, Lewis, mat. med. 289. This is a tall tree, with a trunk as thick as two men can compass, with spreading, opposite branches. The leaves are 5 inches long, and half that in breadth. The flowers, according to Rheede, are axillary and sessile, of a saffron colour. Fruit about 2 inches in diameter, drooping, on peduncles an inch in length; the rind is thin, smooth, and yellowish; the pulp is yellow, succulent, sweet, and eatable. According to Rheede, the fruit is first green, then yellowish, and when ripe whitish. It is very common about Siam and Cambodia, where incisions are made in the bark, and a great quantity of gummi-guttæ or gamboge is extracted, and exported into foreign countries. This concrete is a gum-resin, in part inflammable, compact, dry, inclining to orange-colour, without smell, and almost without taste, producing, however, a slight sensation of acrimony in the throat. A greater quantity of it is dissolved in spirits of wine than in water, to which it imparts a lemon-colour. It is used medicinally in the east, as a purgative, hydrogogue, and emetic, particularly in dropsies and worm cases. It is said to lose the latter quality when dissolved in vinegar. The principal use of gamboge is in painting in miniature and water-colours. The fruit is eaten at meals in the East Indies, and being much esteemed for provoking the appetite, is a frequent ingredient in their sauces. The name *Cambogia* is derived from the province of Camboja or Cambodge, because it comes from that country.

Gamboge Garcinia. Fl. Nov. Clt. 1822. Tree 40 feet.

Cult. The species of this interesting genus deserve to be cultivated in every collection of stove plants. A light loamy soil, mixed with a little peat, will suit them well. Ripened cuttings will root readily in sand under a hand-glass, in heat. All the species require a strong heat to thrive well.

XII. STALA'GMITIS (from *σταζω, stazo,* to run out; because the trees exude a yellow resinous juice when cut). Murr. comm. gœt. 9. p. 175.—Xanthochymus, Roxb. cor. 2. p. 51.—Brindònia, Pet. Th. dict. scien. nat. 5. p. 339.

Lin. syst. *Polyadélphia, Polyándria.* Calyx bractless, of 4-5 (f. 104. *a.*) permanent, unequal sepals. Petals 4-5 (f. 104. *b.*), deciduous. Male flower with a fleshy, 4-5-8-lobed receptacle, bearing numerous imperfect anthers. Stamens monadelphous or disposed in 4-5-8 (f. 104. *c.*) bundles. Anthers didymous, small, 2-celled, bursting at the sides, with a small rudiment of a pistil. Hermaphrodite flowers with a receptacle, as in the male flowers (f. 104. *c.*), and the stamens disposed in 4-5 (f. 104. *c.*) -8 bundles. Style short, crowned by a 4-5 (f. 104. *e.*) -8-lobed stigma. Fruit crowned by the permanent stigma, fleshy (f. 104. *f.*), 3-8-celled; cells 1-seeded. Seeds large, thick.—Trees with axillary or lateral, usually fascicled or umbellate flowers, rarely racemose, male or hermaphrodite in the same, or in different individuals. Branches tetragonal.

Sect. I. Xanthochy'mus (*ξανθος, xanthos,* yellow, and *χυμος, chymos,* juice). Flowers hermaphrodite. Stamens disposed in 5 bundles.

1 S. pictò'rius (Roxb. cor. 2. p. 51. t. 196. under *Xanthochymus,*) leaves lanceolate, acuminated; petioles wrinkled; fruit 1-4-seeded. ♄. S. Native of the East Indies in valleys among the Circar mountains. X. tinctòrius, D. C. prod. 1. p. 562. This is a large tree, with rather large, white flowers, and yellow fruit, like those of the orange; they are very inviting to the eye, and not inferior to many apples, and are eaten by the natives. They could be much ameliorated by culture. The fruit when full grown, but not ripe, yields a quantity of yellow, resinous, acrid gum like gamboge, of the consistence of rich cream. It makes a pretty good water-colour, either by itself as a yellow, or in mixture with other colours to form green. It is imperfectly soluble in spirits, and still less so in water; alkaline salt enables the water to dissolve more of the gum.

FIG. 104.

Painters' Stalagmitis. Tree 40 feet.

2 S. du'lcis (Roxb. cor. 3. t. 270. under *Xanthochymus,*) leaves ovate-oblong, lanceolate, acuminated; pedicels numerous, aggregate, lateral; fruit 5-seeded. ♄. S. Native of the Moluccas. Fruit sweet and esculent. Stamens in 5 bundles.

Sweet-fruited Stalagmitis. Clt. 1820. Tree.

3 S. ovalifòlius (Roxb. hort. beng. 42. under *Xanthochỳmus*,) branches angular; leaves oval or oblong, rounded at both ends; flowers small, aggregate, in clusters; pedicels short; fruit 3-seeded. ♄. S. Native of Ceylon.

Oval-leaved Stalagmitis. Clt. 1820. Tree.

4 S. Guinee'nsis (G. Don, in Loud. hort. brit. p. 320.) leaves oval, tapering to both ends; fruit? ♄. S. Native of Sierra Leone on the mountains. Branches square.

Guinea Stalagmitis. Clt. 1824. Tree 20 feet.

5 S. cambogioi'des (Murr. comm. goett. 9. p. 175.) stamens 30, disposed in 5 bundles; stigmas 3-4; berry globose, 3-4-seeded; leaves ovate acute. ♄. S. Native of Ceylon and Camboja. This tree yields a quantity of yellow resin, which is used by painters as gamboge, and is scarcely distinguishable from it.

Gamboge-like Stalagmitis. Tree 30 feet.

Sect. II. Brindònia. Flowers dioecious or hermaphrodite. Stamens of the male flowers connected in one bundle; those of the hermaphrodite flowers connected in several bundles.

6 S. Cochinchine'nsis (Chois. mss. D. C. prod. 1. p. 561. under *Garcínia*,) leaves ovate-oblong, acutish; branches tetragonal; flowers lateral, crowded, on very short peduncles, whitish; berry the form of a pear; stigma 6-lobed. ♄. S. Native of the East Indies, China, and Cochin-china. G. Amboinénsis, Spreng. syst. 2. p. 448.—Rumph. amb. 3. p. 58. t. 32. Oxycárpus Cochinchinénsis, Lour. fl. coch. 648. This is a large tree, with tetragonal branches. The leaves are 7-8 inches long, and about 3 or 4 inches broad, very smooth and thick. Flowers small, whitish. Fruit about the size of a plum, usually in the shape of a pear, of a reddish colour when ripe; the pulp is juicy, and smells somewhat like an apple, and is eatable in a raw state; it is acid, as well as every other part of the tree. The bark of the tree is brownish, and yellow within, containing a quantity of yellow, viscid juice, which flows copiously on the least incision being made. This juice possesses the same quality as that of *Garcínia Cambògia*. The wood is of little use, being too soft, and not durable. The leaves are used in Amboyna as a condiment to fish. The tree is very common in Amboyna in the plains about the shore and on the mountains.

Cochin-china Stalagmitis. Tree 40 feet.

7 S. elli'ptica (Chois. mss. D. C. prod. 1. p. 561. under *Garcínia*,) branches tetragonal; leaves elliptical, ovate, veiny, acute, large, of a shining-green colour, with black dots; flowers lateral, in fascicles, small, on short peduncles; stamens connected in 5 bundles; female flowers unknown. ♄. S. Native of the islands of Timor and Java. Perhaps this tree is sufficiently distinct from *S. Cochinchinénsis*. Bark yielding a quantity of yellow, thick juice, as the rest of the species. Fruit probably eatable.

Elliptical-leaved Stalagmitis. Tree.

8 S. Cele'bica (Lin. spec. 635. under *Garcínia*,) leaves ovate-lanceolate, acute; branchlets tetragonal; flowers terminal, umbellate, on very short peduncles; stigma 8-lobed; berry globose. ♄. S. Native of the Island of Macassar, whence it has been transplanted into Amboyna and Java, where, however, it seldom bears ripe fruit. Mangostàna Celébica, Rumph. amb. 1. p. 134. t. 44. Brindònia Celébica, Pet. Th. dict. scien. nat. 5. p. 339. This is not a lofty tree, but it has an elegant spreading head. The leaves are thick, 8 inches long, and about 3 fingers broad, but are larger in younger trees. The fruit resembles that of the common Mangostan, but sometimes grows to a larger size; it is of a yellowish-red or saffron colour, like the pomegranate, crowned by the 8-lobed stigma, which is hollow above, and broader there than at its origin.

Celebes Stalagmitis. Tree 20 feet.

9 S. I'ndica (Chois. mss. D. C. prod. 1. p. 561. under *Garcínia*,) leaves ovate, acuminated; flowers terminal, male ones 4-5, crowded, hermaphrodite ones solitary, on short peduncles; berry globose, 5-6-celled. ♄. S. Native of the East Indies. Brindònia I'ndica, Pet. Th. dict. scien. nat. 5. p. 339. Fruit probably eatable.

Indian Stalagmitis. Tree.

10 S. Còwa (Roxb. hort. beng. p. 42. under *Garcínia*,) leaves ovate, acuminated; branches round; male flowers lateral, 4-5 together, hermaphrodite ones solitary, terminal, on short peduncles; stigma entire, rugged, 6-furrowed; berry ovate-globose. ♄. S. Native of the East Indies, where it is called *Kuwa*. G. dioíca, Smith in Rees' cyclop. vol. 15. Flowers yellowish.

Kuwa Stalagmitis. Clt. 1822. Tree 20 feet.

11 S. panicula'ta (Roxb. hort. beng. p. 42. under *Garcínia*,) stamens many, polyadelphous; leaves elliptical, tapering to the base; flowers terminal, panicled. ♄. S. Native of the East Indies.

Panicled-flowered Stalagmitis. Tree 40 feet.

12 S. umbella'ta (Roxb. hort. beng. p. 42. under *Garcínia*,) leaves oblong, obtuse at both ends; peduncles lateral, umbellately many-flowered; corolla 4-5-lobed; calyx 4-5-toothed. ♄. S. Native of the East Indies. This is certainly a distinct genus, on account of the calyx and corolla being monapetalous. Stamens not seen.

Umbellate-flowered Stalagmitis. Tree 40 feet.

† *Species not sufficiently known.*

13 S. lu'teus; Lodd. cat. 14. S. macrophýllus, Lodd. cat. both under *Xanthochỳmus*.

‡ *Species only known by name from Roxb. hort. beng. p. 42, under the genus Garcínia.*

S. Kydiàna, S. purpùrea, S. Gútta, S. lanceæfòlia, S. Boobicòwa.

Cult. These fine trees will thrive well in a turfy loam, mixed with a little peat, but require a strong heat to flourish well. Ripened cuttings will root in sand under a hand-glass, in a moist heat.

Tribe IV.

CALOPHYLLIE'Æ. Ovary 1-2-celled; cells containing 1-2-ovulæ. Fruit drupaceous, indehiscent.

XIII. MESU'A (in honour of Mesue, the father and son, two celebrated Arabian physicians and botanists, who resided at Damascus, and flourished in the 8th and 9th centuries. The works of the younger Mesue, both medical and botanical, were published in folio with annotations at Venice in 1581.) Lin. gen. no. 665. Juss. gen. 258. Cambess. in mem. mus. 16. p. 426. t. 11. B.

Lin. syst. *Monadélphia, Polyándria.* Calyx bractless, of 4 unequal sepals, permanent. Petals 4. Stamens indefinite, connected at the base; filaments filiform; anthers inserted by the base, erect, 2-celled, bursting lengthwise at the sides. Style short, crowned by a thick, concave stigma. Ovary 2-celled; cells containing 2 erect ovulæ. Fruit drupaceous, globose or egg-shaped, 1-celled from abortion, 1-4-seeded. Seeds egg-shaped. Trees with axillary, solitary, hermaphrodite flowers.

1 M. fe'rrea (Lin. spec. 734.) leaves elliptical-lanceolate, acute, glaucous beneath; flowers stalked, axillary; petals somewhat unguiculate, regular; mature nut 1-seeded from abortion. ♄. S. Native of Java and other parts of the East Indies. Calophýllum Nagassàrium, Burm. ind. 121.—Rumph. amb. 7. p. 3. t. 2. Flowers white, about the size of those of the sweet-briar, sweet-scented. Fruit rufous and wrinkled, containing 1 seed, which is eatable. This tree is much cultivated in Java and Amboyna for the beauty and scent of its flowers.

Iron-wooded Mesua. Fl. July, Aug. Tree 40 feet.

2 M. speciòsa (Chois. mss. D. C. prod. 1. p. 562.) leaves linear-lanceolate, rather acute, long; flowers hardly stalked; petals rounded, regular; mature nut 4-seeded. ♄. S. Native of the East Indies. Rheed. mal. 3. p. 63. t. 53. Rheede says this tree is much cultivated in Malabar for the odour and beauty of its flowers; they are about the size and shape of those of the sweet-brier, but with only 4 white petals; when dry they are mixed with other aromatics, such as the white sandal-wood, and used for perfuming ointment. The fruit is reddish, and wrinkled when ripe, with a rind like that of the chesnut, containing 3 or 4 seeds the size, shape, substance and taste of the chesnut. The tree bears fruit in 6 years from the nut, and continues to bear during three centuries. It is planted near houses, and affords an excellent shade. The bark, wood, and roots are bitter, and sweet-scented.

Shewy-flowered Mesua. Fl. July, Aug. Tree 50 feet.

Cult. These trees bear very shewy flowers; they are therefore worth cultivating in every collection of stove plants. They will thrive in a mixture of loam, peat, and sand, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

XIV. CALOPHY'LLUM (from καλος, *calos*, beautiful, and φυλλον, *phyllon*, a leaf; the leaves are large, of a beautiful green, and elegantly veined). Lin. gen. no. 658. Juss. gen. p. 258. D. C. prod. 1. p. 562. Cambess. in mem. mus. 16. p. 427. t. 11. C.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx bractless, of 2-4, unequal, coloured sepals. Petals 4, rarely 2, opposite the sepals. Stamens indefinite, rarely definite, free or connected at the base; filaments short; anthers inserted by their base, 2-celled, bursting lengthwise. Style twisted, crowned by a large, capitate stigma, which is usually lobed. Fruit drupaceous, globose or egg-shaped, 1-celled, 1-seeded. Seeds large, globose or egg-shaped.—Trees with the leaves furnished with numerous transverse, parallel nerves. Flowers disposed in axillary racemes, and panicles polygamous or hermaphrodite.

§ 1. *Calyx of 4 sepals.*

1 C. parvifòlium (Chois. in act. soc. nat. par. 1. p. 229.) leaves cordate-ovate, bluntish, on short stalks, smooth, veined; branches twisted; panicles loose, few-flowered. ♄. S. Native of the Moluccas.

Small-leaved Calophyllum. Tree.

2 C. inophy'llum (Lin. spec. 732.) leaves oblong or obovate, obtuse, but usually emarginate; branches round; flowers loosely racemose; racemes axillary; peduncles 1-flowered, usually opposite. ♄. S. Native of the East Indies.—Rumph. amb. 2. p. 211. t. 71.—Rheede, mal. 4. p. 79. t. 38.—Burm. zeyl. t. 130. t. 60.—This is a large tree, with snow-white flowers. Fruit when ripe reddish, the size of a walnut, under a fleshy bark and a woody shell, having a very oily nut, which is bitter, and yields a yellow resinous juice. It is a tree about 90 feet in height, and 12 in thickness, with the younger branches when ripe of a reddish colour, and when wounded exudes a yellowish, bitter juice, frequently hardening to a gum. The nut of the fruit is at first sweet, but afterwards very bitter. The tree is common in Malabar in sandy soils, and bears fruit twice a year, in March and September, frequently to the age of three hundred years. An oil is expressed from the nuts to burn in lamps, to assuage pain, and to make ointments. The bark and gum are also used for medical purposes. In Java they plant this tree about their houses for the elegance of the shade, and the sweetness of the flowers.

Fibrous-leaved Calophyllum. Clt. 1793. Tree 90 feet.

3 C. tetrape'talum (Roxb. hort. beng. p. 93.) leaves ovate or oblong-lanceolate, obtusely acuminated; racemes axillary, short, corymbose, 2-3 together. ♄. S. Native of the East Indies.

Four-petalled Calophyllum. Tree 60 feet.

4 Tacamaha'ca (Willd. berl. mag. 1811. p. 79.) leaves ovate-elliptical, acutish, rarely emarginate; branches round; flowers loosely racemose; racemes axillary; peduncles 1-flowered, usually opposite. ♄. S. Native of the islands of Bourbon and Madagascar. C. inophýllum, Lam. dict. 1. p. 552.—Pluk. alm. 41. t. 147. f. 3. Flowers white.

Tacamahaca Calophyllum. Clt. 1822. Tree 60 feet.

5 C. specta'bile (Willd. mag. berl. 1811. p. 99.) leaves elliptical-lanceolate or rarely ovate-elliptical, usually acute at both ends; flowers in loose, short, axillary racemes; peduncles 1-flowered. ♄. S. Native of the East Indies and the Mauritius. C. acuminàtum, Lam. dict. 1. p. 553.—Rumph. amb. 2. p. 218. t. 72. C. Soulàtri, Burm. ind. p. 121. Petals yellow or white. This tree is very commonly cultivated in Amboyna for its shewy, yellow blossoms. The nuts are eatable. The bark is manufactured into ropes. In fact, it possesses all the qualities of *C. inophýllum*.

Shewy Calophyllum. Clt. 1820. Tree 90 feet.

§ 2. *Calyx of 2 sepals.*

6 C. Ca'laba (Jacq. amer. p. 269. t. 165.) leaves obovate or oblong, obtuse or emarginate; flowers hermaphrodite or male; racemes lateral, very short. ♄. S. Native of the Caribbee Islands. Flowers white, sweet-scented. Fruit green, with little pulp, and that hardish, involving a smooth, yellowish, ash-coloured nut, in which is a white, solid kernel. It is not eaten, but the Caribbees express an oil from it for domestic uses, as for burning in lamps. Browne says, that the wood is pretty good timber, but does not bear the weather well, and that it is frequently used for staves and cask headings. The tree is called *Calaba* both by the Caribbees and the French.

Calaba Calophyllum. Clt. 1780. Tree 60 feet.

7 C. Madru'nno (H. B. et Kunth, nov. gen. amer. 5. p. 202.) leaves oblong, acute at both ends; peduncles few-flowered; capsules large, usually 2-seeded. ♄. S. Native of South America in the kingdom of New Granada, where it is called *Madrunno*.

Madrunno Calophyllum. Tree.

8 C. Calaboi'des; leaves wedge-shaped, præmorsely-emarginate; racemes axillary, about the length of the leaves; sepals 2. ♄. S. Native of the East Indies. C. Cálaba, Roxb. but not of Jacq.

Calaba-like Calophyllum. Tree 50 feet.

9 C. Brasilie'nse (St. Hil. fl. bras. 1. p. 320. t. 67.) leaves elliptic or obovate; cymes shorter than the leaves; calyx 2-leaved; petals usually 2; stamens few. ♄. S. Native of Brazil. Petals white.

Brazilian Calophyllum. Tree 60 feet.

§ 3. *Calyx wanting?*

10 C. spu'rium (Chois. mss. D. C. prod. 1. p. 563.) leaves ovate, obtuse; peduncles elongated. ♄. S. Native of the East Indies. C. Cálaba, Lin. spec. 723. C. apétalum, Willd. mag. berl. 1811. p. 79.—Rheed. mal. 4. p. 81. t. 39. Rheede says the wood of this tree is very hard and of a reddish colour. The fruit when ripe is of a red colour; in taste sweet, mixed with acid; in shape, size, and colour, not unlike our cornelian cherry. It is eaten by the natives of Malabar, and an oil is expressed from it for lamps. The petals are yellow.

Spurious Calophyllum. Clt. 1780. Tree 60 feet.

† *Species very little known.*

11 C. longifòlium (Willd. berl. mag. 1811. p. 80.) leaves

oblong-elliptical, roundish-obtuse. ♄. S. Native of South America. (H. B.)

Long-leaved Calophyllum. Tree.

12 C. acumina'tum (Willd. mag. berl. 1811. p. 80.) leaves oblong, acuminated. ♄. S. Native of South America in New Granada. (H. B.)

Acuminate-leaved Calophyllum. Tree.

13 C. Cu'ssi (H. B. et Kunth, nov. gen. 5. p. 203.) leaves oblong, blunt at both ends. ♄. S. Native of South America in inundated places at St. Balthasar, where it is called *Cussi*.

Cussi Calophyllum. Tree.

† *Species only known by name from Roxb. Hortus Bengalensis, p. 41 and 93.*

14 C. lanceola'rium (Roxb. hort. beng. p. 41.) ♄. S. Native of the Mauritius.

15 C. Bi'ntagor (Roxb. hort. beng. p. 43.) ♄. S. Native of the Moluccas.

16 C. Su'riga (Roxb.) ♄. S. Native of Malacca.

Cult. *Calophýllum* is a genus of fine trees, which grow well in a mixture of loam, sand, and peat; and cuttings will root freely, taken from ripe wood, in sand under a hand-glass, in a moist heat.

† *Genera allied to Guttíferæ, but not sufficiently known.*

XV. MACA'NEA (Macaca-hana is the name of this tree in Guiana). Juss. gen. p. 257. D. C. prod. 1. p. 564. Macahànea, Aubl. guian. suppl. p. 6.

Lin. syst. *Polyándria, Monogýnia?* Berry large, pear-shaped, gibbous and unequal on the outside, with a thick rind, 1-celled, pulpy inside, 4-6-seeded. Seeds fixed laterally to the receptacle, ovate, coriaceous, enwrapped in a membrane, and imbedded in white pulp.

1 M. Guiane'nsis (Aubl. guian. suppl. p. 6. t. 371.) ♄. S. Native of Guiana. A rambling shrub, with climbing branches, opposite, ovate, acute, smooth, toothed, stalked leaves, and axillary racemes of flowers.

Guiana Macaca-hana. Shrub climbing.

Cult. This fine climbing shrub will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

XVI. SINGA'NA (Singan-singa is the name of the tree in Guiana). Aubl. guian. 1. p. 574. Juss. gen. p. 257. D. C. prod. 1. p. 564.

Lin. syst. *Polyándria, Monogýnia.* Calyx 3-5-parted. Petals 3-5, unguiculate, with a serrulated border. Stamens numerous; anthers roundish. Style 1, incurved at the apex. Stigma capitate, concave. Capsule long, cylindrical, 1-celled, many-seeded. Seeds large, enwrapped in a pulp. Tree climbing.

1 S. Guiane'nsis (Aubl. guian. p. 257. t. 230.) ♄. ◡. S. Native of Guiana in the woods. Leaves opposite, ovate, acute, stalked, smooth, entire. Flowers white, in axillary corymbs. Pulp of fruit sweet.

Guiana Singana. Shrub climbing.

Cult. This shrub will thrive well in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

XVII. MACOU'BEA (the Caribbean name of the tree). Aubl. guian. suppl. 2. p. 17. Juss. gen. p. 257. D. C. prod. 1. p. 564.

Lin. syst. *Polyándria, Monogýnia?* Fruit the form of an Orange, somewhat compressed and trigonal, with a thin, roughish, rather dotted rind, 1-celled, many-seeded. Seeds oblong, somewhat curved, convex above, furrowed beneath, covered with a white membrane, fixed to the central placenta of the fruit.—Tree abounding in a milky juice. Branches opposite. Leaves opposite, entire, with secondary transverse nerves. Fruit in racemes, from the divarication of the branches.

1 M. Guiane'nsis (Aubl. guian. suppl. 2. p. 17. t. 378.) ♄. S. Native of Guiana. Leaves ovate, acute, smooth, entire, standing on half-stem-clasping petioles. Fruit rough, rufescent, with a few irregular dots.

Guiana Macoubea. Tree 40 feet.

Cult. This tree will thrive well in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

Order XLII. MARCGRAVIA'CEÆ (plants agreeing with *Marcgràvia* in important characters). Juss. in ann. mus. 14. p. 397. D. C. prod. 1. p. 565.

Calyx of 2-7 sepals; sepals ovate, usually coriaceous, imbricate. Corolla hypogynous, sometimes monopetalous, hood-formed, entire, or jagged at the apex, sometimes 5-petalled, after flowering circumscised and caducous. Stamens definite but usually numerous, sometimes inserted in the receptacle, sometimes in a hypogynous membrane; filaments dilated at the base; anthers elongated, 2-celled, fixed by the base, bursting on the inside. Ovary 1, free, usually furrowed. Style 1, of various lengths, crowned by a simple or capitate stigma. Capsule coriaceous, commonly globose, many-valved, hardly dehiscent, with a dissepiment in the middle of each valve. Dissepiment in *Marcgràvia* slender, arched, joined at the base and apex, distant from the centre, and the fruit is therefore 1-celled. Seeds very minute, numerous, imbedded in pulp. Embryo unknown.—Usually ascendant shrubs with alternate leaves. Flowers umbellate or spicate. Peduncles naked, but usually furnished with bracteas, which are either simple, concave on the outside, or hood-formed. This order is distinguished from *Guttíferæ* in the leaves being alternate, and by the singular form of the bracteas of the flowers; in this last respect it differs also from *Ternstræmiàceæ*.

Synopsis of the Genera.

Suborder I. Marcgravie'æ. *Corolla hood-formed. Stamens inserted in the receptacle.*

1 Antholo'ma. Calyx of 4 caducous sepals, rarely 2. Corolla ovate, cylindrical, with a crenate-toothed margin.

2 Marcgra'via. Calyx permanent, 6-parted. Corolla conical, entire.

Suborder II. Nora'nteæ. *Corolla of 5 petals. Stamens pressed to the corolla, and appear as if they were inserted in it.*

3 Nora'ntea. Calyx 5-7-parted. Corolla with reflexed petals. Stamens numerous, in one series.

4 Ru'yschia. Stamens 5, alternating with the petals. The rest as in *Norántea*.

Suborder I.

MARCGRAVIE'Æ plants agreeing with *Marcgràvia* in important characters). D. C. prod. 1. p. 565. Corolla in the shape of a hood. Stamens inserted in the receptacle.

I. ANTHOLO'MA (from *ανθος, anthos*, a flower, and *λωμα, loma*, a fringe; in allusion to the fringed or crenulated limb of corolla). Labill. nov. holl. 2. p. 121. D. C. prod. 1. p. 565.

Lin. syst. *Polyándria, Monogýnia.* Calyx of 4, rarely of 2, ovate, caducous sepals. Corolla ovately cylindrical, with a crenate, rather toothed margin. Stamens about 100, inserted in a spongy disk; anthers oblong, bursting at the apex. Ovary bluntly 4-sided. Style long, crowned by an acute stigma. Unripe fruit 4-celled, and probably capsular—A tree, with elliptical-oblong, coriaceous, stalked leaves, which are scattered at the top of the branchlets. Racemes of flowers axillary, somewhat umbellate, reflexed, with naked peduncles.

1 A. monta'na (Labill. voy. t. 41.). ♄. G. Native of New Caledonia. Flowers white?

Mountain Antholoma. Clt. 1810. Tree 20 feet.

Cult. This fine tree will thrive best in a light loamy soil, mixed with a little peat, and ripened cuttings will root in sand under a hand-glass.

II. MARCGRA'VIA (in honour of George Marcgrave, who was born at Leipstadt in Germany; he published a Natural History of Brazil in 1718, wherein many singular plants are mentioned). Plum. amer. 29. Lin. gen. 640. Juss. gen. 244. D. C. prod. 1. p. 566.

Lin. syst. *Polyándria, Monogýnia.* Calyx 6-parted, permanent, ovate-roundish, coriaceous, imbricate, unequal. Corolla coriaceous, conical, entire at the apex. Stamens in 1 row, inserted in a little membrane which surrounds the ovary; anthers oblong, bursting lengthwise. Style almost wanting. Stigma thick, permanent. Capsule coriaceous, baccate, somewhat globose.—Shrubs commonly with ascending stems, as in the ivy, with the flower-bearing branches pendulous. Leaves alternate. Peduncles furnished with pitcher-shaped bracteas. Flowers white?

1 M. umbella'ta (Lin. spec. 503.) leaves sessile, ovate-elliptical, acute, hardly veined, those on the sterile branches ovate, blunt; peduncles umbellate, usually tubercled and furnished with spoon-shaped bracteas. ♄. S. Native of the Caribbee Islands and South America in cool, wooded mountains. Jacq. amer. p. 156. t. 96. ed. pict. 77. t. 143. Plum. gen. 7. t. 173. f. 1. Lam. ill. t. 447.—Browne, jam. 244. t. 26.—Sloan. jam. 1. p. 74. t. 28. f. 1. This is a shrubby, creeping plant, but not properly parasitical, at first it is radicant, but as it advances in age it becomes shrubby, but adhering still by its fibres to the trunks of trees. Leaves distich. The seeds and pulp are usually of a shining-scarlet colour.

Umbellate-flowered Marcgravia. Clt. 1792. Shrub rooting, attached to trees.

2 C. coria'cea (Vahl. eccl. 2. p. 39.) leaves elliptical, coriaceous, veinless; pedicels in whorles to the number of 17 or 18, spreading much, tubercled; ovary depressed, globose; stigma 6-cleft, convex, rayed. ♄. S. Native of Guiana in woods. This shrub has the habit of the last.

Coriaceous-leaved Marcgravia. Clt. 1820. Shrub like the last.

3 M. spiciflòra (Juss. ann. mus. 14. p. 402. t. 25.) leaves ovate, obtuse, rarely acuminated; pedicels racemose, furnished with simple bracteas; stigma 4-lobed. ♄. S. Native of Guiana and Guadaloupe on wooded mountains. Habit of ivy.

Spiked-flowered Marcgravia. Shrub rooting like the rest.

4 M. pi'cta (Willd. mag. berl. 1808. p. 172.) leaves of the sterile branches elliptical, cordate, roundish, very blunt, about an inch long, dark-green above, and netted with white veins, but pale-green beneath (Willd.). ♄. S. Native of Brazil. Shrub with the habit of ivy.

Painted-leaved Marcgravia. Shrub rooting like the rest.

Cult. These singular shrubs will thrive well in a mixture of turfy loam and peat, and cuttings will root in sand under a hand-glass, in heat. They are well adapted for covering the walls or rafters of stoves.

Suborder II.

NORA'NTEÆ (plants agreeing with *Norántea* in the corolla being of 5 petals). D. C. prod. 1. p. 566. Corolla of 5 petals. Stamens pressed to the corolla and appearing as if they were inserted on it.

III. NORA'NTEA (altered from the Caribbean name of *N. Guianénsis, Gonora-antegri*). Aubl. guian. 1. p. 554. Juss. gen. p. 245. D. C. prod. 1. p. 566.—A'scyum, Vahl. Willd.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-parted, rounded, coriaceous. Petals 5, free, reflexed. Stamens few or numerous, small, disposed in a simple or double series, adhering to the bottom of the petals. Filaments flat. Anthers fixed by the back. Ovary free, conical, furrowed, 3-5-celled; cells many-seeded. Seeds fixed to the central axis. Style nearly wanting. Stigma capitate or acute. Trees or shrubs, rarely climbing or rooting, excepting those species, natives of Guiana. Leaves scattered, jointed, entire, exstipulate. Flowers disposed in terminal racemes or spikes. Pedicels jointed at the base, furnished with 3 bracteas each, lower one sack-formed or cucullate, stalked, the 2 upper ones small, usually guarding the calyx, and therefore appear as if they were sepals.

1 N. Guiane'nsis (Aubl. guian. 1. p. 554. t. 220.) spikes of flowers long; flowers nearly sessile; bracteas large, bladdery, or cucullate; anthers numerous, very minute, scarcely exserted; leaves oblong, blunt, emarginate. ♄. S. Native of Guiana and Trinidad in woody mountains. A'scyum violàceum, Vahl. ecl. p. 41. A beautiful shrub, with oblong, mucronate, coriaceous leaves. Branches red, throwing out roots by which it supports itself on the trees which it grows near. Flowers of a violet colour, with scarlet bracteas.

Guiana Norantea. Clt. 1818. Shrub rooting on trees.

2 N. Brasilie'nsis (Chois. mss. D. C. prod. 1. p. 566. St. Hil. fl. bras. 1. p. 311.) leaves obovate, stalked; flowers racemose, on long peduncles; bracteas about one-half the size of those of the preceding plant; anthers ovate, emarginate at the base, with scarlet bracteas; petals green in the middle but white on the margins. ♄. S. Native of Brazil. Habit of the preceding species.

Brazilian Norantea. Clt. 1820. Shrub 6 feet.

3 N. adame'ntum (St. Hil. fl. bras. 1. p. 313. t. 62.) leaves obovate, nearly sessile; flowers racemose, on long pedicels; anthers ovate, emarginate at the base. ♄. S. Native of Brazil in the province of Minas Geraes near Tejuco, in the district of the Diamonds. Petals green marked with red.

Adamant Norantea. Shrub 6 feet.

4 N. Goyase'nsis (St. Hil. fl. bras. 1. p. 313.) leaves obovate, nearly sessile; flowers racemose, on short pedicels; anthers subtrigonal, entire at the base. ♄. S. Native of Brazil in the province of Goyaz near Villa Boa. Petals dark-purple.

Goyaz Norantea. Fl. July. Shrub 5 to 6 feet.

5 N. ano'mala (H. B. et Kunth, nov. gen. amer. 7. t. 647. b.) flowers somewhat spiked, octandrous; bracteas hemispherical, helmet-shaped; leaves oblong, obtuse, somewhat coriaceous, tapering to the base. ♄. S. Native of South America. A'scyum anómalum, Spreng. syst. app. p. 207. Flowers violet-coloured. Habit of the preceding two species.

Anomalous Norantea. Shrub 4 to 6 feet.

6 N. Sellòi; flowers racemose; bracteas almost sessile, rather remote from the flower, roundish; leaves obovate-oblong, retuse. ♄. S. Native of Brasil. A'scyum Sellòi, Spreng. syst. 2. p. 599.

Sello's Norantea. Shrub 6 feet.

7 N. Berte'rii; flowers racemose; bracteas sessile, approximating the flower, mucronated beneath; leaves oblong, mucro-

nated, of a different colour beneath. ♄. S. Native of the West Indies. A'scyum Bertèrii, Spreng. syst. 2. p. 599.

Bertero's Norantea. Shrub 6 to 8 feet.

8 N. OBOVA'TA; leaves nearly sessile, obovate, entire, terminated by a small mucrone; bracteas cucullate at the base, and bifid at the apex, equal in length to the pedicel; calyx one-half shorter than the corolla. ♄. S. Native of Peru. Marcgràvia obovàta, Ruiz et Pav. fl. per. 5. t. 437. Flowers large, disposed in corymbose racemes.

Obovate-leaved Norantea. Shrub 6 to 8 feet.

9 N. CORDACHI'DA; leaves oblong-lanceolate, entire, acute, tapering to the base; flowers disposed in long terminal racemes; pedicels 2 together, one of which is very short; fruit obovate. ♄. S. Native of Peru. Marcgràvia cordachìda, Ruiz et Pav. fl. per. 5. t. 438. A.

Cordachida Norantea. Shrub 6 to 8 feet.

10 N. CACABI'FERA; leaves oblong or obovate-lanceolate, obtuse, mucronate; racemes long; flowers 2 together, the one sessile, the other pedicellate. ♄. S. Native of Peru. Marcgràvia cacabífera. Ruiz et Pav. fl. per. 5. t. 439.

Kettle-bearing Norantea. Shrub 6 feet.

11 N. MACROCA'RPA; leaves obovate-oblong, mucronate, on short petioles; flowers corymbose, terminal; pedicels long; petals reflexed; fruit large. ♄. S. Native of Peru. Marcgràvia macrocárpa, Ruiz et Pav. fl. per. 5. t. 436.

Large-fruited Norantea. Shrub.

Cult. *Norántea* is a genus of beautiful and singular shrubs. They will thrive well in a mixture of loam and peat, and cuttings will root readily in sand or mould under a hand-glass, in a moist heat.

IV. RU'YSCHIA (in honour of Frederick Ruysch, a Dutch physician, who published Hortus Amsteladamensis, a posthumous work of John Commelin; he died 1731). Jacq. amer. p. 75. D. C. prod. 1. p. 566. Souróubea, Aubl. guian. 1. p. 244.

LIN. SYST. *Pentándria, Monogýnia.* Stamens 5, alternating with the petals; the rest as in the preceding genus.

1 R. SOURÓUBEA (Willd. spec. 1116.) leaves obovate, obtuse, on short petioles; flowers in loose spikes; peduncles elongated, with sessile bracteas, which approximate the calyx, each of which are furnished with 2 long auricles. ♄. S. Native of Guiana in woods on the banks of the river Gallion. Souróubea Guianénsis, Aubl. guian. 1. p. 244. t. 97. Souróubea Aublètii, Meyr. esseq. prim. p. 119. Logània pentácrina, Scop. introd. gen. 1076. A sarmentose shrub, with long, round, divaricating, flexile, rambling, rooting branches. Leaves alternate, acuminated at the base, but emarginate at the apex, with a mucrone in the middle, smooth, fleshy. Racemes terminal, simple, long, many-flowered. Flowers alternate, somewhat remote from each other. Calyx 5-6-parted. Bracteas opposite, scarlet. Petals oblong, deciduous, yellow. Filaments red; anthers brown. Stigma fleshy, flat, 5-rayed. *Souroubea* is the Guiana name of the plant.

Souroubea Ruyschia. Shrub rambling, and rooting on trees.

2 R. CLUSIÆFÒLIA (Jacq. amer. p. 75. t. 51. f. 2.) leaves obovate; flowers densely spiked; peduncles very short; bracteas not cucullate, but concave on the outside. ♄. S. Native of Guiana and the Caribbee islands in moist woods. Jacq. amer. ed. pict. t. 76. This is a parasitical under-shrub. Leaves alternate, thick, shining, about 4 inches long. Racemes terminal, many-flowered, about a foot long; bracteas obovate, acute, thick, deflexed, concavo-convex, scarlet, dotted with red. Petals purple, deciduous. Filaments purple. Stigma 5-rayed.

Clusia-leaved Ruyschia. Clt. 1823. Shrub rooting on trees like ivy.

3 R. PAVÒNII; leaves obovate, mucronate, with revolute margins; racemes terminal; pedicels single, bracteate; flowers pentandrous. ♄. S. Native of Peru. Marcgràvia pentándra, Ruiz et Pav. fl. per. 5. t. 440.

Pavon's Ruyschia. Shrub.

Cult. These pretty radicant shrubs will thrive well in a mixture of loam and vegetable mould, and ripened cuttings will root freely in sand under a hand-glass, in a moist heat.

ORDER XLIII. HIPPOCRATEA'CEÆ (plants agreeing with *Hippocràtea* in important characters). H. B. et Kunth, nov. gen. amer. 5. p. 135. D. C. prod. 1. p. 567.—Hippocratíceæ, Juss. in ann. du. mus. 18. p. 486.

Calyx of 5 (f. 105. *a.*), rarely of 4 or 6 sepals, small, and joined to the middle, permanent. Petals equal in number to the sepals (f. 105. *b.*), equal, somewhat imbricate in æstivation. Disk occupying the bottom of the calyx, expanded between the petals and the stamens. Stamens 3 (f. 105. *c.*), rarely 5 or 10; filaments free at the apex, dilated at the base (f. 105. *c.*). Anthers (ex Kunth) 1-celled, bursting transversely at the apex or 2-4 celled at the base. Ovary hidden within the urceolus or staminiferous tube, trigonal, free. Style 1, crowned by 1-3 stigmas. Fruit sometimes of 3 samara-like carpels, sometimes baccate, 1-3-celled. Seeds in each cell usually numerous, fixed by pairs to the central axis, erect, exalbuminous, often solitary from abortion. Embryo straight, with an inferior radicle pointing to the base, and flat, elliptic, oblong, fleshy cotyledons.—Arborescent or climbing shrubs, usually smooth, with opposite, entire, toothed, feather-nerved, rather coriaceous, stipulate leaves, and axillary corymbs or fascicles of small, inelegant flowers. According to Jussieu, this order is allied to *Acerineæ* in the ternary number of the stamens. It differs from all the foregoing orders in the singular form of the disk or urceolus, which is either separate from the stamens or formed from the cohesion of the filaments.

Synopsis of the Genera.

1 HIPPOCRATE'A. Petals foveate at the apex. Stamens 3; anthers 1-celled, opening transversely at the apex. Carpels 3, samara-like, or only 1-2 from abortion, 2-valved. Seeds winged downwards.

2 RADDI'SIA. Calyx of 5 sepals. Ring girding the ovary on the outside of the stamens. Stamens 3; anthers 2-celled. Capsule 3-celled; cells many-seeded.

3 SALA'CIA. Calyx 5-parted. Petals 5, with a fleshy urceolus between the petals and pistillum. Stamens 3; anthers adnate, 2-celled. Berry roundish, 3-celled, many-seeded.

4 CALY'PSO. Calyx 5-parted. Petals 5, with the urceolus expanded between the petals and stamens. Stamens 3; anthers adnate, 2-celled. Berry usually 1-celled from abortion, sometimes 3-celled; cells 1-seeded.

5 JO'HNIA. Anthers 3, seated on the top of the urceolus. Fruit baccate, younger ones 3-celled, with 1 or 2 peltate ovulæ in each cell, adult ones few-seeded.

† *Spurious Hippocrateàceæ, with stamens beyond 5.*

6 TRIGO'NIA. Calyx 5-parted, unequal. Petals 5, arched at the apex, 2 lateral ones wing-formed, 2 inferior ones connected in the form of a keel. Stamens 10-12, fertile, irregularly connected at the base. Capsule trigonal, 3-valved, 3-celled, woolly inside, containing many woolly seeds.

7 Lacepe'dea. Calyx 5-parted, unequal. Petals 5, unguiculate. Stamens 5; anthers 2-celled, bursting lengthwise. Ovary 3-celled. Stigma 3-parted. Berry tricuspidate from the styles, 6-9-seeded.

I. HIPPOCRATE'A (in honour of Hippocrates, the celebrated physician; he is regarded as one of the fathers of botany). Lin. gen. no. 54. D. C. prod. 1. p. 567.—Còa, Plum. gen. p. 8. t. 35.

Lin. syst. *Triándria, Monogýnia.* Calyx 5-parted (f. 105. *a.*). Petals 5 (f. 105. *b.*), inserted between the disk and the calyx. Stamens 3 (f. 105. *c.*), inserted between the disk and the ovary, or on the top of the disk; filaments flat, dilated at the base, free; anthers 1-celled, bursting transversely. Style short, with a continuous stigma. Ovary more or less immersed in the disk, 3-celled, each cell containing 2-6 ovulæ. Carpels 3, or from abortion only 1 or 2, compressed, 1-celled, 2-valved; valves keeled. Seeds oblong, compressed, winged downwards.—Trees or climbing shrubs, with twisted branches, opposite, entire leaves, very deciduous stipulas, and small insignificant flowers, disposed in dichotomous, axillary panicles, with the branchlets and pedicels furnished with bracteas.

1 H. obcorda'ta (Lam. ill. 1. p. 100. t. 28. f. 1.) carpels obcordate; racemes corymbose, shorter than the leaves; leaves ovate, lanceolate, serrated. ♄. ◡. S. Native of the Caribbee Islands and New Spain. H. scándens, Jacq. amer. 9. t. 9. Petals ovate, obtuse, greenish-yellow.

Obcordate-carpelled Hippocratea. Fl. July, Aug. Clt. 1793. Shrub cl.

2 H. uniflòra (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 567.) carpels obcordate; peduncles 1-flowered; leaves oblong, cordate at the base and entire. ♄. ◠. S. Native of Mexico. Petals ovate, obtuse, greenish-white.

One-flowered Hippocratea. Shrub cl.

3 H. ova'ta (Lam. ill. 1. p. 100. t. 28. f. 2.) carpels ovate; panicles axillary, somewhat dichotomous; leaves oblong-ovate or elliptical-serrated. ♄. ◠. S. Native of St. Domingo. Vahl. enum. 2. p. 27. H. volùbilis, Lin. syst. 84.—Plum. ed. Burm. 76. t. 88. but the carpels of this plant are rounder, and the leaves are narrower.

Var. β, oblongifòlia (D.C. prod. 1. p. 568.) leaves more oblong. ♄. ◠. S. Native of Porto-Rico.

Ovate-carpelled Hippocratea. Clt. 1793. Shrub cl.

4 H. læviga'ta (Rich. in Vahl. enum. 2. p. 27.) carpels?; panicles axillary, somewhat dichotomous; pedicels 2 together, 1-flowered in the forks; leaves ovate-oblong, obsoletely crenated. ♄. ◠. S. Native of Cayenne.

Smooth Hippocratea. Shrub cl.

5 H. affi'nis (St. Hil. fl. bras. 2. p. 103.) leaves elliptic, acutish, serrate-toothed, smooth; panicle clothed with rusty tomentum, usually crowned by a leaf; calyx pubescent, ciliated; petals 4-times longer than the calyx, oblong, obtuse, clothed with rusty down on the outside, and bearded on the inside. ♄. S. Native of Brazil near to the town of St. Paul. A sarmentose shrub.

Allied Hippocratea. Fl. Nov. Tree 30 to 40 feet, supporting itself on other trees.

6 H. micra'ntha (St. Hil. fl. bras. 2. p. 103.) leaves elliptic-oblong, acuminated, very obsoletely serrate-toothed, smoothish; panicle smooth, much branched, shorter than the leaves; calyx smooth, denticulated; petals 3 times longer than the calyx, elliptic-oblong, obtuse, smooth. ♄. ◡. S. Native of Brazil in the province of St. Paul in woods near Registro Velho. Petals yellowish.

Small-flowered Hippocratea. Fl. Dec. Shrub cl.

7 H. di'scolor (Meyer, prim. esseq. 19.) carpels ovate; panicles axillary, somewhat dichotomous, brown-velvety; smaller branches many-flowered; leaves oval, with short points, obsoletely crenate-serrated. ♄. S. Native of Guiana in woods by the sea-side. Leaves rusty beneath.

Two-coloured-leaved Hippocratea. Shrub 12 feet.

8 H. vi'ridis (Ruiz et Pav. fl. per. 1. p. 44. t. 74. f. a.) carpels oval, emarginate; corymbs dichotomous, shorter than the leaves; leaves ovate, bluntly acuminated, entire, and serrated. ♄. ◠. S. Native of Peru in groves on the Andes. Petals obtuse, greenish.

Green-flowered Hippocratea. Shrub cl.

9 H. acutiflòra (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 568.) carpels obovate; corymbs dichotomous, shorter than the leaves; petals acute; leaves oblong-oval, toothed. ♄. ◠. S. Native of Mexico. Petals greenish, acute, and appear as if they were bifoveolate at the apex. Anthers 4-lobed. Stigma simple.

Acute-flowered Hippocratea. Shrub cl.

10 H. celastroi'des (H. B. et Kunth, nov. gen. amer. 5. p. 136.) carpels roundish-ovate; corymbs dichotomous, smooth, one-half shorter than the leaves; petals roundish-obtuse; leaves lanceolate-oblong, each with an acute point. ♄. ◠. S. Native of Mexico near Venta del Estola. Flowers greenish-white.

Celastrus-like Hippocratea. Shrub cl.

11 H. Acapulce'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 136.) carpels obovate; peduncles dichotomous, many-flowered, smooth, about equal in length with the leaves; petals ovate; leaves obovate, oblong, each with a short point; branches warted. ♄. ◠. S. Native of New Granada. Flowers greenish-white.

Acapulca Hippocratea. Shrub cl.

12 H. verrucòsa (H. B. et Kunth, nov. gen. amer. 5. p. 136.) carpels obovate; peduncles much branched, dichotomous, many-flowered, smooth, about equal in length with the leaves; petals ovate; leaves elliptical-oblong, acutish, remotely serrulated; branches warted. ♄. ◠. S. Native of New Granada. Flowers greenish-white.

Warted-branched Hippocratea. Shrub cl.

13 H. malpighiæfòlia (Rudge, pl. guian. 10. t. 8.) carpels? panicles axillary and terminal; leaves narrow-oval, quite entire, acuminated, rough beneath, as well as the branches. ♄. ◠. S. Native of Guiana. Anthers 4-lobed.

Malpighia-leaved Hippocratea. Shrub cl.

14 H. comòsa (Swartz, fl. ind. occ. 1. p. 77.) carpels oblong or obovate; peduncles of panicles multifid, capillary; leaves ovate, acuminated, quite entire, obtuse at the base or rather cordate. ♄. ◠. S. Native of Hispaniola in the remote parts of woods. Carpels 2 or 3 inches long. Flowers white.

Tufted Hippocratea. Shrub cl.

15 H. emargina'ta (Rudge, pl. guian. p. 11. t. 9.) carpels? panicles axillary, short, dichotomous; leaves obovate, quite entire, emarginate; stem rough, with minute warts. ♄. ◠. S. Native of Guiana. Anthers roundish. (f. 105.)

Emarginate-leaved Hippocratea. Shrub cl.

16 H. panicula'ta (Vahl. enum. 2. p. 28.) carpels? panicles axillary, dichotomous, shorter than the leaves; leaves oblong, acute at both ends, bluntly serrated. ♄. ◠. S. Native of Sierra Leone on the mountains. Branches spreading much, rather compressed at the top.

FIG. 105.

Panicled-flowered Hippocratea. Shrub cl.

17 H. Richardia'na (St. Hil. fl. bras. 2. p. 102.) leaves elliptic-oblong, bluntish, nearly entire, smooth; panicles puberulous, equal in length with the leaves; calyx puberulous, ciliated; petals much longer than the calyx, acutish, puberulous; capsule obovate, obtuse, 4-seeded. ♄. ⌒. S. Native of Senegal.

Richard's Hippocratea. Shrub cl.

18 H. macrophy'lla (Vahl. enum. 2. p. 28.) carpels? panicles axillary, dichotomous, shorter than the leaves; leaves ovate, quite entire, shining, blunt at the base, but acuminated at the apex. ♄. ⌒.? S. Native of Sierra Leone. Leaves pale-green, as in the preceding species.

Long-leaved Hippocratea. Shrub cl.?

19 H. veluti'na (Afz. in Spreng. new entd. 3. p. 234.) carpels? racemes axillary; leaves oblong, acuminated, quite entire, veiny beneath, as well as being clothed with rufous villi. ♄. S. Native of Guinea.

Velvety Hippocratea. Shrub 6 feet?

20 H. I'ndica (Willd. spec. 1. p. 193.) carpels oblong, 2-seeded; panicles corymbose, dichotomous, about the length of the leaves; leaves oval, acute, serrated, shining. ♄. ⌒. S. Native of Coromandel on wooded mountains. Roxb. cor. 2. t. 130. Flowers yellowish.

Var. β, dispérma (Vahl. enum. 2. p. 28.) carpels lanceolate, obtuse at both ends; panicles shorter than the leaves; leaves elliptical, acuminated, serrulated. ♄. ⌒. S. Native of the East Indies in woody mountains.

Var. γ, euonymoìdes (Vahl. enum. 2. p. 28.) leaves oblong or obovate, entire or emarginate at the apex. ♄. ⌒. S. Flowers greenish-white.

Indian Hippocratea. Shrub cl.

21 H. obtusifòlia (Roxb. fl. ind. 1. p. 170.) carpels obovate, 4-seeded; corymbs terminal and axillary; leaves elliptical-oblong, entire, blunt; branches tendrilled. ♄. ⌒. S. Native of Coromandel. Flowers greenish-yellow. Anthers 2-lobed.

Blunt-leaved Hippocratea. Clt. 1818. Shrub cl.

22 H. arbòrea (Roxb. cor. 3. t. 205.) carpels linear-oblong, somewhat cuneated, 2-seeded; corymbs axillary, dichotomous; leaves elliptical, serrulated, terminating in a point; branches somewhat climbing. ♄. S. Native of Hindostan. Flowers 4-6-cleft, greenish-yellow. Anthers 4-lobed.

Tree Hippocratea. Clt. 1818. Tree 20 feet.

23 H.? cassinoi'des (D. C. prod. 1. p. 569.) carpels? corymbs axillary, dichotomous, 3 times shorter than the leaves; leaves elliptical, acuminated at both ends, somewhat serrulated, rather membranaceous; branches compressed at the apex. ♄. S. Native of the Island of Timor.

Cassine-like Hippocratea. Shrub 6 feet?

24 H.? pauciflòra (D. C. prod. 1. p. 565.) carpels? corymbs axillary, dichotomous, 5-7-flowered, scarcely longer than the petioles; leaves elliptical-oblong, very bluntly crenulated. ♄. ⌒? S. Native of the Island of Timor. Flowers 4 lines in diameter. Anthers somewhat 4-lobed.

Few-flowered Hippocratea. Shrub cl.

25 H. elli'ptica (H. B. et Kunth, nov. gen. amer. 5. p. 138.) carpels? peduncles clothed with very fine down, dichotomously quadrifid, shorter than the leaves; leaves elliptical, acute, remotely crenate-serrulated; branches quadrangular. ♄. ⌒? S. Native of Mexico. Flowers greenish-white.

Elliptical-leaved Hippocratea. Shrub cl.?

26 H. exce'lsa (H. B. et Kunth, nov. gen. amer. 7. p. 136.) carpels? peduncles bifid, many-flowered, powdery-hairy, 3 or 4 times shorter than the leaves; leaves elliptical-oblong, acuminated, wavy-crenulated; younger branches quadrangular; stem arboreous. ♄. S. Native of Mexico. Flowers yellow.

Tall Hippocratea. Tree 20 feet.

Cult. These shrubs are hardly worth cultivating unless in botanic gardens; the flowers being very minute, and without beauty. The species will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

II. RADDI'SIA (in honour of Giuseppe Raddi, an Italian botanist and traveller in Brazil, author of Novæ Species Cryptogamicæ Firenze, 1808, and other works). Leand. sacram. in denk. sckr. munch. akad. 7. p. 244. t. 15. ex Schult. mant. 1. p. 252. D. C. prod. 1. p. 570.

Lin. syst. *Triándria, Monogýnia.* Calyx of 5 sepals. Corolla rotate, 5-cleft, with a ring girding the ovary on the outside of the stamens. Stamens 3, with linear filaments, and 2-celled anthers? Pistil longer than the stamens. Style short. Capsule 3-celled; cells many-seeded. Seeds rather globose, fixed to the central axis. This genus is perhaps sufficiently distinct from *Salàcia*.

1 R. arbòrea (Leand. l. c. Schrank. l. c. p. 244. ex Schult. mant. 1. p. 347.) ♄. S. Native of Brazil on the borders of Islands at the entrance to Rio Janeiro. Leaves elliptical, acute, smooth, serrated on short stalks. Flowers small, axillary, solitary or aggregate, greenish-yellow.

Tree Raddisia. Tree 20 feet.

Cult. This tree bears very insignificant flowers; therefore not worth cultivating except in botanic gardens. It will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

III. SALA'CIA (from Salacia in mythology, wife of Neptune). Lin. mant. 293.—Toutèlea, Aubl. guian. 1. p. 31.—Tonsélla, Schreb. gen. no. 74.—Sicèlium, R. Brown, ex Poir. suppl. 5. p. 146.—A'nthodon, Ruiz et Pav. fl. per. 1. p. 45. D. C. prod. 1. p. 569.—A'nthodus, Mart. in Schult. mant. 1. p. 253.

Lin. syst. *Triándria, Monogýnia.* Calyx 5-parted; lobes rounded. Petals 5, entire or toothed, inserted between the disk and the ovary. Stamens 3, inserted between the disk and the ovary; filaments dilated at the base, free; anthers terminal, 1-celled, opening transversely at the apex. Style short or wanting. Stigma 3-lobed. Ovary more or less immersed in the disk, 3-celled, containing from 2 to 10 ovulæ in each cell, which are fixed to the inner angle of the cells, disposed in a double or triple series. Berry somewhat globose, fleshy, 2-3-celled; cells 1-seeded from abortion. Seeds ovate, enwrapped in mucilage. —Small trees and shrubs, rarely climbing, with entire leaves, deciduous stipulas; axillary, dichotomous panicles of greenish or yellowish flowers, or umbellate from abortion.

§ 1. A'nthodon (from *ανθος, anthos,* a flower, and *οδους οδοντος, odous odontos,* a tooth; petals toothed). Petals fringed or toothed (f. 105. *b.*).

1 S. decussa'ta (Ruiz et Pav. fl. per. 1. t. 74. f. 2. under *A'nthodon,*) leaves oblong-ovate, somewhat acuminated, bluntly serrated, shining; panicles axillary, dichotomous; petals ovate-oblong, sharply serrated. ♄. S. Native of Peru in groves on the Andes, and near Angustura, ex. H. B. et Kunth, nov. gen. amer. 5. p. 140. t. 443. Hippocratèa? A'nthodon, Pers. ench. 1. p. 40. Tonsélla decussàta, Vahl. enum. 1. p. 30.

Decussate-leaved Salacia. Shrub 6 feet.

2 S. panicula'ta (Mart. l. c. under *A'nthodus,*) leaves ovate, bluntish, obsoletely and rather undulately-crenated; flowers panicled; petals oval, unequally and remotely toothed. ♄. S. Native of Brazil at Rio Janeiro. All other particulars unknown, as well as those of the following.

Panicled-flowered Salacia. Clt. 1818. Shrub 6 feet.

3 S. undula'ta (Mart. l. c. under *A'nthodus,*) leaves elliptic, acute, tapering to both ends, bluntly, and rather undulately-ser-

rated; peduncles 3-5-flowered, axillary, short; calycine segments roundish, entire; petals obovate-roundish, fringe-toothed, 3 times longer than the calyx. ♄. S. Native of Brazil at Rio Janeiro. Shrub decumbent. Petals greenish-yellow.

Waved-leaved Salacia. Shrub 6 feet.

4 S. elli'ptica (Mart. l. c. under *A'nthodus*,) leaves thick, elliptic, rounded at both ends, with thickened, entire margins; flowers axillary and lateral, on short peduncles, in bundles; petals obovate-orbicular, serrulated. ♄. S. Native of Brazil at Rio Janeiro.

Elliptical-leaved Salacia. Clt. 1818. Shrub 6 feet.

5 S. Vahlia'na (St. Hil. fl. bras. 2. p. 105, in a note,) leaves elliptic-ovate, acuminated, quite entire, scabrous on both surfaces; calycine segments oblong-linear, acutish, clothed with grey tomentum; petals equal in length with the calyx, obovately-roundish, fringed. ♄. ◡. S. Native of Trinidad. Tontàlia scándens, ex herb. Vahl. but not of Aubl.

Vahl's Salacia. Shrub cl.

6 S. multiflòra (St. Hil. fl. bras. 2. p. 109.) leaves elliptic-oblong, acute, serrate-toothed; calycine segments ovate-roundish, ciliated; petals oblong, acutish, denticulated, 3 times longer than the calyx; cells of ovary 7-ovulate. ♄. S. Native of Brazil in the province of Goyaz. Petals clothed with rusty tomentum.

Many-flowered Salacia. Shrub 6 feet.

7 S. grandifòlia (Mart. l. c. under *A'nthodus*,) leaves thick, oblong, obtuse, quite entire; flowers axillary and lateral, aggregate, on very short peduncles; petals ovate-orbicular, toothletted. ♄. S. Native of Brazil at Rio Janeiro.

Great-leaved Salacia. Shrub 6 feet.

8 S. oblongifòlia (Mart. l. c. under *A'nthodus*,) leaves thick, oblong, bluntish, remotely and undulately crenated in front; flowers axillary and lateral, aggregate; petals obovate-oblong, toothletted. ♄. S. Native of Brazil in the province of Bahia, in woods at the river St. Francisco.

Oblong-leaved Salacia. Shrub 6 feet.

9 S. glomera'ta (Mart. l. c. under *A'nthodus*,) leaves thick, oblong-lanceolate, bluntish; flowers glomerated, axillary and lateral, sessile; petals orbicular, hardly toothletted. ♄. S. Native with the preceding species.

Glomerate-flowered Salacia. Shrub 6 feet.

10 S. Brasilie'nsis; leaves ovate, acute, quite entire, shining above, white-tomentose beneath; cymes axillary; petals fringed, villous inside. ♄. S. Native of Brazil. Tonsélla Brasiliénsis, Spreng. syst. 1. p. 177.

Brazilian Salacia. Shrub 6 feet.

11 S. trine'rvia; leaves oblong, acuminated, quite entire, triple-nerved, smooth on both surfaces; panicles terminal; petals fringed, villous inside. ♄. S. Native of Brazil. Tonsélla trinérvia, Spreng. syst. 1. p. 177.

Three-nerved-leaved Salacia. Shrub 6 feet.

12 S. micra'ntha (Mart. l. c. under *A'nthodus*,) leaves thick, linear-oblong, obtuse, quite entire; panicles axillary and terminal, few-flowered; petals obovate, hardly toothletted. ♄. S. Native of Brazil in the province of Bahia, in woods at Catingas.

Small-flowered Salacia. Shrub 6 feet.

13 S. crassifòlia (Mart. l. c. under *A'nthodus*,) leaves thick, somewhat marginated, elliptic-linear; flowers glomerated, sessile, axillary, and lateral: petals obovate-orbicular, quite entire. ♄. S. Native of Brazil in the province of Coyaz towards Vao la Paraxa.

Thick-leaved Salacia. Shrub 6 feet.

14 S. læviga'ta (D. C. prod. 1. p. 570.) panicles axillary, multifid; petals ciliated; leaves stalked, oblong, acute, somewhat waved, quite entire, smooth, but roughish beneath; branches smooth. ♄. S. Native of? Tonsélla lævigàta, Hoffmans. in Link. jahrb. 3. p. 68. ex Schult. mant. 1. p. 347. Very like the preceding species. Petals fringed.

Smooth Salacia. Shrub 6 feet.

15 S. prinoìdes (D. C. prod. 1. p. 571.) peduncles axillary, crowded, elongated, 1-flowered? Leaves elliptical, obtuse, obsoletely serrated at the apex; petals fringed. ♄. S. Native of the East Indies. Tonsélla prinoìdes, Willd. act. nat. berl. 4. p. 184. Berry 1-seeded.

Prinos-like Salacia. Shrub 6 feet.

16 S. velutì'na (St. Hil. fl. bras. 2. p. 108.) leaves oblong-lanceolate, acutish, or rounded at the apex, quite entire, velvety above; panicle nearly sessile, short; calycine segments ovate-roundish, rather ciliated; petals oblong, elliptic, twice the length of the calyx, erose; cells of ovary 2-ovulate. ♄. S. Native of Brazil in the province of Minas Geraes. Petals green. Stems many from the root.

Velvety Salacia. Fl. Sept. Shrub 2 to 3 feet.

17 S. erythroxyloìdes (St. Hil. fl. bras. 2. p. 106.) leaves elliptic, obtuse, quite entire; flowers umbellate, pedicellate; calycine segments roundish, erose; petals roundish-elliptic, erose; cells of ovary 5-ovulate. ♄. S. Native of Brazil in the province of Minas Geraes. Petals dirty-yellow.

Erythroxylum-like Salacia. Tree 15 feet.

§ 2. *Salácia* (*see Genus*). *Petals entire.*

18 S. sca'bra (D. C. prod. 1. p. 570.) panicles axillary and terminal, dichotomous, clothed with grey tomentum; leaves ovate-oblong, entire, veiny beneath and rough. ♄. ◡. S. Native of Cayenne and the Island of Trinidad in woods. Tontèlea scándens, Aubl. guian. 1. p. 31. t. 10. Hippocratèa áspera, Lam. illus. 1. p. 101. Tonsélla scàbra, Vahl. enum. 29.

Scabrous Salacia. Fl. Aug. Sept. Clt. 1824. Shrub cl.

19 S. calypsoi'des (St. Hil. fl. bras. 2. p. 107.) leaves obovate, elliptic, short-acuminate, quite entire; panicle sessile, short; calycine segments ovate, obtuse; petals elliptic-roundish, twice the length of the calyx, quite entire; cells of ovary 2-ovulate. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals green.

Calypso-like Salacia. Fl. Sept. Shrub 4 feet.

20 S. obtusifòlia (St. Hil. fl. bras. 2. p. 105.) leaves oblong, obtuse, quite entire; flowers umbellate, pedicellate; calycine segments ovate-roundish, ciliated; petals twice the length of the calyx, elliptic, obtuse, quite entire; cells of ovary 2-ovulate. ♄. S. Native of Brazil in the province of Goyaz. Petals brownish-yellow.

Var. β, parviflòra; flowers much smaller and on shorter pedicels.

Obtuse-leaved Salacia. Fl. Aug. Tree 15 feet.

21 S. multiflòra (D. C. prod. 1. p. 570.) peduncles crowded, usually 3-flowered; leaves obovate, quite entire, shining. ♄. S. Native of Cayenne in woods. Hippocratèa obovàta, Rich in act. soc. hist. nat. par. 1. p. 106. Hippocratèa multiflòra, Lam. ill. 1. p. 101.

Many-flowered Salacia. Shrub 6 feet.

22 S. ra'dula (Spreng. syst. 1. p. 177. under *Tonsélla*) leaves elliptical, coriaceous, very smooth, quite entire; cymes axillary; branches with rough spots. ♄. S. Native of Brazil.

Rasp-branched Salacia. Shrub 6 feet.

23 S. Cochinchine'nsis (Lour. fl. coch. 526.) peduncles axillary, crowded, 1-flowered; leaves ovate, somewhat acuminated, rather serrated; petals roundish. ♄. G. Native of Cochin-china among bushes. Flowers of a reddish-yellow colour.

Cochin-china Salacia. Shrub 6 feet.

24 S. serra'ta (St. Hil. fl. bras. 2. p. 109.) leaves elliptic, long-acuminated, sharply serrated; panicle nearly sessile, short; calycine segments ovate-roundish, ciliated; cells of ovary

2-ovulate. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Petals yellow.

Serrated-leaved Salacia. Fl. Jan. Shrub cl.

25 S. Chine'nsis (Lin. mant. 293.) peduncles axillary, crowded, 1-flowered; leaves alternate? oval, quite entire, smooth; branches angular. ♄. G. Native of China. Probably the same as *S. Cochinchinénsis*.

China Salacia. Shrub 6 feet.

Cult. Shrubs of no beauty, therefore hardly worth cultivating, except in general collections. They will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, those of the stove species in heat.

IV. CALY'PSO (in mythology daughter of Oceanus and Thetis; she reigned in the island of Ogygia). Pet. Th. veg. afr. 1. p. 29. t. 6. St. Hil. fl. bras. 2. p. 110. Salàcia, spec. D. C. prod. 1. p. 570.

Lin. syst. *Triándria, Monogýnia.* Calyx 5-parted. Petals 5, alternating with the segments of the calyx. Disk girding the ovary, expanded between the petals and stamens. Stamens 3, inserted between the margin of the disk and ovary; filaments flat, free. Anthers adnate, 2-celled; cells bursting outwards. Style short, crowned by an obsoletely 3-lobed stigma. Ovary more or less immersed in the disk, 3-celled; cells 2 or many-ovulate; ovulæ fixed to the inner angle of the cells. Fruit indehiscent, fleshy, globose, usually 1-celled from abortion. Seeds globose, solitary in the cells, clothed with mucilaginous pulp. Embryo straight, destitute of albumen, with thick cotyledons.—Shrubs with opposite, entire leaves, deciduous stipulas, axillary, dichotomous panicles of flowers, or from abortion subumbellate.

1 C. campe'stris (St. Hil. fl. bras. 2. p. 111. t. 104.) quite smooth; leaves oblong or oblong-lanceolate, narrow at the apex, somewhat acuminated, serrate-toothed; flowers panicled; petals twice the length of the calyx, denticulated; cells of ovary 2-ovulate. ♄. S. Native of Brazil in the provinces of Goyaz and St. Paul, where it is called *Bacopari do Campo*. This is a much-branched shrub, with green flowers.

Field Calypso. Fl. Sept. Feb. Shrub 2 to 3 feet.

2 C. Africa'na (D. C. prod. 1. p. 570. under *Salàcia*) peduncles crowded, 1-flowered; leaves oval, shining, toothletted; teeth somewhat glandular. ♄. S. Native of Guinea. Tonsélla Africàna, Willd. spec. 1. p. 194.

African Calypso. Shrub 5 feet.

3 C. Senegale'nsis (D. C. prod. 1. p. 570. under *Salàcia,*) peduncles crowded, 1-flowered, rising from an axillary tubercle; leaves oblong, acuminated, smooth, shining, serrated; branches scabrous. ♄. S. Native of Senegal. Hippocratèa Senegalénsis, Lam. ill. p. 101. H. verticillàta *a,* Pers. ench. 1. p. 40. Tonsélla Senegalénsis, Vahl. enum. 2. p. 31. Fruit eatable, very sweet.

Senegal Calypso. Shrub 5 feet.

4 C. pyrifórmis; peduncles axillary, 1-flowered, aggregate; leaves oblong, slightly toothed; fruit large, pear-shaped, 3-celled, 3-seeded. ♄. S. Native of Sierra Leone on the mountains, Flowers small, greenish-yellow. The fruit is about the size of a Bergamot pear, obscurely 3-sided, with a very sweet taste, and is eaten by the inhabitants of Sierra Leone. Tonsélla pyrifórmis, Hort. trans. vol. 5. p. 459.

Pear-shaped Calypso. Fl. Feb. Mar. Clt. 1822. Sh. 5 ft.

5 C. Madagascarie'nsis (D. C. prod. 1. p. 570. under *Salàcia;*) peduncles crowded, 1-flowered, rising from an axillary tubercle; leaves lanceolate-oblong, almost entire, acuminated, even, shining; petals linear. ♄. S. Native of Madagascar. Hippocratèa Madagascariénsis, Lam. ill. 1. p. 101. Hippocratèa verticillàta *β*, Pers. ench. 1. p. 40. Tonsélla Madagascariénsis, Vahl. enum. p. 29.

Madagascar Calypso. Shrub 6 feet.

6 C. salacioìdes (St. Hil. fl. bras. 2. p. 111.) peduncles usually in threes, 1-flowered, rising from an axillary tubercle; leaves oval-oblong, slightly and bluntly toothed, veiny; petals ovate. ♄. S. Native of Madagascar. Calýpso, Pet. Th. veg. afr. 1. p. 29. t. 6. Salàcia Calypso, D. C. prod. 1. p. 571. Berry globose, mucronate. Seeds albuminose (Pet. Th.).

Salacia-like Calypso. Shrub 5 feet.

7 C. de'bilis; branches weak; leaves ovate, acuminated, serrated; flowers in clusters in the axils of the leaves; pedicels 1-flowered. ♄. S. Native of Sierra Leone.

Weak-branched Calypso. Shrub cl.

8 C. ere'cta; branches erect; leaves oval-lanceolate, acuminated, obtuse, serrated, smooth; flowers axillary, nearly sessile; fruit ovate, acuminated. ♄. S. Native of Sierra Leone.

Erect Calypso. Shrub 6 feet.

Cult. These shrubs will thrive well in a mixture of loam and sand, and ripened cuttings will strike root freely in sand under a hand-glass, in heat.

V. JO'HNIA (in honour of the Rev. Dr. John, a missionary, once resident in Tranquebar, who has sent many curious plants to Roxburgh). Roxb. fl. ind. 1. p. 172. D. C. prod. 1. p. 571.

Lin. syst. *Monadélphia, Triándria.* Anthers 3, sessile, on the top of the urceolus. Fruit baccate; younger ones 3-celled; ovulæ peltate, 1 or 2 in each cell; adult fruit few-seeded.—Little trees, with 1-flowered, axillary peduncles.

1 J. salacioìdes (Roxb. fl. ind. 1. p. 172.) leaves broad-lanceolate, entire; calyx 5-parted; petals 5, sessile. ♄. S. Native of Chittagong. Flowers small, orange-coloured. Fruit dull-red, 2-3-seeded. The pulp of the fruit is white and is eaten by the natives.

Salacia-like Johnia. Clt. 1822. Shrub 10 feet.

2 J. Coromandelia'na (Roxb. l. c.) leaves serrulated; calyx 5-toothed; petals 5, unguiculate. ♄. ◡. S. Native of Coromandel on wooded mountains. Flowers small, greenish-yellow. Berry 1-seeded, about the size of a small cherry, as well as shape.

Coromandel Johnia. Clt. 1820. Shrub cl.

Cult. Jóhnia is a genus of very pretty little trees. The fruit of both species is eatable. They will thrive well in a mixture of loam and peat, and ripened cuttings will strike root in sand, under a hand-glass, in a moist heat.

† *Hippocrateàceæ spùriæ. Stamens 5 or more, but never exceeding* 12.

VI. TRIGO'NIA (from τρεις, *treis*, three, and γωνια, *gonia*, an angle; the fruit is 3-angled, 3-celled, and 3-valved). Aubl. guian. 1. p. 390. D. C. prod. 1. p. 571.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted, unequal, permanent. Petals 5, broad at the base, unequal; upper one arched, gibbous and concave; 2 lateral ones small, wing-shaped; 2 lower ones connected into the form of a keel. Stamens 10-12, some of them sterile, and irregularly connected into a tube at the base, which is cleft in front. Anthers fixed by the back, 2-celled, bursting lengthwise. Glands 2-4, opposite the superior petal, situated at the base of the ovary. Ovary trigonal, 3-celled; cells containing many ovulæ. Style 1, crowned by a 3-lobed stigma. Capsule trigonal, 3-valved, 3-celled; valves woolly on the inside and constituting dissepiments. Seeds numerous, woolly, fixed to the axis. Albumen fleshy.—Sarmentose or climbing shrubs, with opposite, entire, bistipulate leaves, and racemosely-panicled flowers, either axillary or terminal.

1 T. seri'cea (H. B. et Kunth, nov. gen. amer. 5. p. 141.) leaves obovate, clothed beneath with silky or silvery down. ♄. ◠. S. Native on the Andes about Quindiu.

Silky-leaved Trigonia. Shrub cl.

2 T. NI'VEA (St. Hil. fl. bras. 2. p. 113.) leaves oblong, narrowed both at top and bottom, acute, and short-acuminated, smooth above, but white and tomentose beneath; capsule elongated, much wrinkled, covered with rufescent tomentum on the outside, but with silky tomentum within. ♄. S. Native of Brazil near Rio Janeiro.

White-leaved Trigonia. Fl. Dec. Shrub 4 feet.

3 T. PUBE'SCENS (St. Hil. fl. bras. 2. p. 114.) leaves elliptic-obovate, short-acuminated, smoothish above, pubescently tomentose beneath; capsule elongated, rufescently-tomentose outside, but silky-tomentose inside. ♄. ◡. S. Native of Brazil in the provinces of Minas Geraes and Rio Janeiro. Flowers whitish-green.

Pubescent Trigonia. Fl. Dec. Shrub cl.

4 T. VILLÒSA (Aubl. guian. 1. p. 390. t. 347. Lam. illus. t. 347.) leaves ovate, acute, quite entire, covered with cinereous down beneath, netted with nerves and nervelets. ♄. ◠. S. Native of Cayenne. Flowers with the upper and lateral petals yellow and the lower one red.

Var. α, obtusàta (D. C. prod. 1. p. 571.) leaves elliptical-obovate, blunt at both ends.

Var. β, cuneàta (D. C. l. c.) leaves obovate, cuneated at the base.

Var. γ, oblónga (D. C. l. c.) leaves oblong, acuminated at both ends.

Villous Trigonia. Clt.? Shrub cl.

5 T. MO'LLIS (D. C. prod. 1. p. 571.) leaves elliptical, acuminated, tapering to the base, clothed with villous pubescence above, but cinereous beneath from villi, not netted with nerves. ♄. S. Native of Brazil. Flowers yellowish-white.

Soft-leaved Trigonia. Shrub rambling.

6 T. CE'PO (St. Hil. fl. bras. 2. p. 115.) leaves obovate-elliptic, narrowed at the base, mucronulate, puberulous above, soft tomentose beneath. ♄. ◡. S. Native of Brazil near Rio Janeiro, where it is called *Cepo de Caboco*. Flowers racemose in the axils of the upper leaves, smelling like the hawthorn, greenish. This is perhaps the same as *T. móllis*.

Cepo Trigonia. Fl. Nov. Shrub cl.

7 T. CROTONOÌDES (St. Hil. bras. 2. p. 115. t. 105.) leaves ovate-oblong, acute, or acuminated, smoothish above, but puberulous or tomentose beneath; capsule roundish, 3-lobed. ♄. ◡. S. Native of Brazil near Rio Janeiro. Cròton eriospérmum, Lam. dict. 2. p. 211. Flowers yellow, racemose.

Var. β, incàna (St. Hil. l. c. p. 116.) leaves ovate, acuminated, pubescent above, and hoary-tomentose beneath. Near Rio Janeiro.

Var. γ, oblongifòlia (St. Hil. l. c.) leaves oblong, acuminated, smoothish above, puberulous beneath; flowers greenish-rufescent. In the province of Minas Geraes.

Croton-like Trigonia. Fl. Jan. Shrub cl.

8 T. LÆ'VIS (Aubl. guian. 1. p. 390. t. 150. Vahl. ecl. 2.) leaves ovate, acuminate, smooth on both surfaces and shining. ♄. ◡. S. Native of Guiana. Flowers white.

Smooth Trigonia. Shrub cl.

Cult. These shrubs are hardly worth cultivating, except in general collections. They will thrive well in a mixture of loam and peat, and ripened cuttings will strike root in sand under a hand-glass, in heat.

VII. LACEPE'DEA (in honour of Bernard Germain Stephen Count de La Cepede, professor of zoology in the museum of natural history at Paris). H. B. et Kunth, nov. gen. amer. 5. p. 142. t. 444. D. C. prod. 1. p. 571. Triceràja, Willd. in Rœm. et Schult, syst. 4. p. 803.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted, unequal. Petals 5, with very short claws. Stamens 5, with unconnected filaments; anthers 2-celled, bursting lengthwise. Ovary 3-celled, each cell containing 8-ovulæ. Style 3-furrowed, and at length dividing into 3 parts. Berry 6-9-seeded, 3-pointed from the permanent styles.—A tree with serrulated leaves and terminal panicles of white, sweet-scented flowers. It is nearly allied to *Trigònia*.

1 L. INSI'GNIS (H. B. et Kunth, l. c.). ♄. S. Native of Mexico near Xalapa. Triceràja tinifòlia, Willd. l. c. Tríceras Xalapénsis, Spreng.

Shewy Lacepedea. Tree 20 feet.

Cult. This fine tree will probably thrive well in a mixture of loam, sand, and peat, and ripened cuttings will root in sand under a hand-glass, in a moist heat.

Order XLIV. ERYTHROXY'LEÆ. H. B. et Kunth, nov. gen. amer. 5. p. 175.

Sepals 5 (f. 106.), permanent, concrete at the base. Petal 5, hypogynous, broadest at the base, furnished each with a scale on the inside, with the margins incumbent before expansion. Stamens 10 (f. 106. *c.*), filaments concrete into an urceolus at the base (f. 106. *c.*). Anthers versatile, erect, 2-celled, bursting lengthwise at the sides. Ovary 1-celled, containing a solitary, pendulous ovula, or 3-celled, the lateral cells empty. Styles 3, (f. 106. *d.*), distinct, crowned each by a capitate stigma (f. 106. *d.*) or connected almost to the apex. Drupe 1-seeded (f. 106. *f.*); seeds angular. Albumen fleshy or wanting. Embryo linear, straight, central. Cotyledons linear, flat, leafy. Radicle superior, straight, terete, pointing towards the hylum, with an inconspicuous plumule.—Trees and shrubs with the younger branches compressed, and usually covered with imbricate scales (f. 106.). Stipulas axillary, concave. Leaves alternate, rarely opposite, quite entire, smooth in most parts of the species and perhaps in all. Pedicels angular, gradually thickened. Flowers solitary, twin, or in fascicles, rising from axils of stipulaceous scales, small, white, or yellowish-green. This order has been separated by Kunth from *Malpighiàceæ*, on account of the petals being appendiculate, from the seeds being albuminous, and in the fruit being 1-celled from abortion, as well as from its peculiar habit. It differs from all the neighbouring orders in the appendiculate petals. From *Marcgraviàceæ*, *Guttíferæ*, &c. in the leaves being stipulate.

Synopsis of the Genera.

1 Erythro'xylon. Calyx 5-parted, 5-angled at the base. Styles 3, distinct.

2 Se'thia. Calyx 5-lobed. Styles 3, but joined together in one. Stigmas distinct.

I. ERYTHRO'XYLON (from ερυθρος, *erythros*, red, and ξυλον, *xylon*, wood; the wood of the trees is not red, as the name would imply, but the juice of the fruit is red). Lin. gen. no. 575. Cav. diss. 8. p. 399. Lam. ill. t. 383. H. B. et Kunth, l. c. D. C. prod. 1. p. 573.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted, 5-angled at the very base. Styles 3 (f. 106. *d.*), unconnected to the base, not joined as in *Sèthia*.

§ 1. *Penninérvia (from penna, a feather, and nervus, a nerve or sinew; the nerves of the leaves are disposed in the manner of the feathers of a pen). Leaves feather-nerved* (f. 106. *g.*), *with the nerves small, conniving at the apex.*

* *Pedicels solitary.*

1 E. HYPERICIFÒLIUM (Lam. dict. 2. p. 394.) leaves obovate, usually emarginate; pedicels 3-times longer than the flower; fruit 3-celled. ♄. S. Native of the Mauritius, where it is called *Bois d'huile* and *Bois de Dames*. Venèlia, Comm. herb. —Cav. diss. 8. p. 400. t. 230. Leaves like those of *Spìrea hypericifòlia*, rather membranaceous and pale beneath.

Hypericum-leaved Red-wood. Clt. 1818. Tree 12 feet.

2 E. BRE'VIPES (D. C. prod. 1. p. 573.) leaves obovate, usually emarginate; pedicels lateral, hardly longer than the flowers; fruit 1-celled. ♄. S. Native of the islands of Porto-Rico and St. Domingo on rocks by the sea-side. Very like the preceding species, but differs in the leaves being coriaceous, 5 or 6 lines long, and in the pedicels being 4 times shorter than the leaves.

Short-pedicelled-flowered Red-wood. Tree 20 feet.

3 E. BUXIFÒLIUM (Lam. dict. 2. p. 394.) leaves lanceolate-obovate, obtuse, somewhat mucronate, with the middle nerve elevated; pedicels twice the length of the flower; fruit 1-celled. ♄. S. Native of Madagascar, and probably of the Mauritius. Cav. diss. 8. p. 403. t. 231. f. 1.

Box-leaved Red-wood. Shrub 6 feet.

4 E. FERRUGI'NEUM (Cav. diss. 8. p. 404. t. 231. f. 2.) leaves ovate, usually emarginate, shining above, somewhat rusty beneath; scales imbricate; pedicels scarcely longer than the flower. ♄. S. Native of Madagascar. E. buxifòlium β, Lam. dict. 2. p. 394.

Rusty-leaved Red-wood. Shrub 8 feet.

5 E. LU'CIDUM (H. B. et Kunth, nov. gen. amer. 5. p. 178.) leaves elliptical, somewhat acuminated, acutish at the base, coriaceous, smooth, shining; stipulas longer than the petiole; pedicels twin, axillary, and terminal? shorter than the bracteas. ♄. S. Native of New Granada between La Mesa and Honda.

Shining-leaved Red-wood. Shrub 6 feet.

6 E. PELLETERIA'NUM (St. Hil. fl. bras. 2. p. 100. t. 102.) leaves oblong, acute at the base, but obtuse and emarginate at the apex, rusty beneath; stipulas elongated, triangular; branches floriferous at the base; flowers solitary or twin from the axils of the scales. ♄. S. Native of Brazil in the province of Minas Geraes, where it is called *Fruta da Pomba*.

Pilletier's Red-wood. Fl. Jan. Shrub 10 to 12 feet.

** *Pedicels in twos, threes, or fours, never solitary.*

7 E. LIGUSTRI'NUM (D. C. prod. 1. p. 574.) leaves elliptical-oblong, tapering to both ends; pedicels 1-4, almost twice as long as the flowers; styles longer than the stamens. ♄. S. Native of Cayenne. Flowers larger in this than any other species, about 2-3 lines in diameter. Petals oblong-linear, acutish. Leaves an inch and a half long and 6 or 8 lines broad.

Privet-like Red-wood. Shrub 6 feet.

8 E. HONDE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 176.) leaves elliptical-obovate, retuse at the apex, obsoletely mucronate, acute at the base, membranous, smooth, glaucescent beneath; stipulas equal in length with the petiole; pedicels 1-2 or more, a little longer than the petioles. ♄. S. Native of New Granada in dry places near Honda.

Honda Red-wood. Shrub 6 feet.

9 E. OVA'TUM (Cav. diss. 8. p. 404. t. 233.) leaves ovate, obtuse, mucronate, somewhat membranaceous; pedicels in threes, twice as long as the flower; scales imbricate. ♄. S. Native of Guadaloupe, where the French call it *Vinette l'herminier*.

Ovate-leaved Red-wood. Tree.

10 E. CUMANE'NSE (H. B. et Kunth, nov. gen. amer. 8. p. 404.) leaves obovate-oblong, roundish at the apex, but narrowed at the base and blunt, membranaceous, smooth; stipulas equal in length with the petiole; pedicels 1-4, axillary, 3-times longer than the petiole. ♄. S. Native in dry shady places near Cumana.

Cumana Red-wood. Tree 15 feet.

11 E. HAVANE'NSE (Jacq. amer. 135. t. 87. f. 2.) leaves oval, tapering to both ends, rather coriaceous; pedicels usually twin, scarcely longer than the flower; branches compressed. ♄. S. Native of Cuba about Havannah on rocks near the sea-coast. Steudèlia Brasiliénsis, Nees. Flowers yellowish-green.

Havannah Red-wood. Clt. 1822. Shrub 3 feet.

12 E. ORINOCE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 176. t. 453.) leaves elliptical-oblong, emarginate at the apex, ovate at the base, stiff, smooth, shining; stipulas length of petiole; pedicels 2-3, axillary and terminal? twice as long as the petiole. ♄. S. Native on the banks of the Orinoco near St. Borja. This is scarcely distinct from *E. ovàtum*.

Orinoco Red-wood. Tree 15 to 20 feet.

13 E. SIDEROXYLOÌDES (Lam. dict. 2. p. 393.) leaves obovate-oblong, bluntish, shining; pedicels 2-3, about twice the length of the leaves; scales acute; branchlets compressed. ♄. S. Native of the island of Bourbon. Cav. diss. 8. p. 401. t. 228. Leaves almost like a species of *Laùrus*, 2-3 inches long, 3-9 lines broad.

Sideroxylon-like Red-wood. Tree 20 feet.

14 E. LONGIFÒLIUM (Lam. dict. 2. p. 392.) leaves oblong, shining, thickish; scales acute, deciduous; pedicels twin, twice as long as the flower. ♄. S. Native of the islands of Madagascar and Bourbon. Cav. diss. 8. p. 399. t. 225. Leaves 2 or 3 inches long and 4 or 5 lines broad. Flowers white.

Long-leaved Red-wood. Tree 16 feet.

15 E. OBTU'SUM (D. C. prod. 1. p. 474.) leaves obovate-oblong, rounded at the top, cuneated at the base, membranous, rather glaucous beneath; stipulas shorter than the petiole; pedicels axillary, in fascicles? twice as long as petiole. ♄. S. Native of Cuba near Havannah. E. Havanénse, H. B. et Kunth, nov. gen. amer. 5. p. 177. Very near *E. Hondénse*.

Blunt-leaved Red-wood. Shrub 8 feet.

16 E. POPAYANE'NSE (H. B. et Kunth, nov. gen. amer. 5. p. 177.) leaves elliptical, acute, somewhat mucronate, acute at the base, membranous, smooth; stipulas awl-shaped, bifid, shorter than the petiole; pedicels axillary, in fascicles, about equal in length with the petiole. ♄. S. Native of temperate places near Popayan.

Popayan Red-wood. Shrub 8 feet.

17 E. COTINIFÒLIUM (St. Hil. fl. bras. 2. p. 98.) leaves obovate, acute at the base, but very blunt at the apex, and emarginate; flowers rising along the branches in few-flowered fascicles from the scales; stipulas triangular. ♄. S. Native of Brazil in the province of Minas Geraes.

Cotinus-leaved Red-wood. Fl. April. Shrub 2 feet.

18 E. FRANGULÆFÒLIUM (St. Hil. fl. bras. 2. p. 99.) leaves ovate or lanceolate, acuminated; flowers solitary or tern, in the axils of the scales; stipulas 1-3-awned; stamens shorter than the pistil. ♄. S. Native of Brazil near Rio Janeiro.

Frangula-leaved Red-wood. Fl. Sept. Shrub.

19 E. SUBROTU'NDUM (St. Hil. l. c.) leaves roundish-obovate, very obtuse; flowers axillary, solitary, or few; stipulas 2-awned; stamens nearly twice the length of the pistil. ♄. S. Native of Brazil in the province of Rio Janeiro, where it is called *Fruta da Pomba*.

Roundish-leaved Red-wood. Fl. Sept. Shrub 4 to 6 feet.

*** *Pedicels many, aggregate.*

20 E. RU'FUM (Cav. diss. 8. p. 404. t. 232.) leaves ovate, blunt, coriaceous, brown beneath; scales imbricate; pedicels

many, axillary, twice as long as the flower. ♄. S. Native of St. Domingo.

Rufous-flowered Red-wood. Shrub.

21 E. macrophy'llum (Cav. diss. 8. p. 401. t. 227.) leaves lanceolate, very long, tapering to both ends, rather glaucous beneath; scales elongated, stem-clasping, acuminated; pedicels axillary, aggregate; fruit 3-celled. ♄. S. Native of Cayenne. —Vahl. ecl. 2. p. 33. The leaves of this species are larger than any other; they are about 6 inches long, and abòut 2 in breadth.

Long-leaved Red-wood. Shrub.

22 E. squamma'tum (Vahl. symb. 3. p. 60. t. 63.) leaves elliptical-lanceolate, bluntly acuminated; branches compressed, with distich scales and flowers; fruit somewhat hexagonal, 1-celled. ♄. S. Native of Cayenne and French Guiana, as well as the Caribbee Islands. Swartz, fl. ind. occ. 861. This species is easily distinguished from the numerous, short, permanent, distich scales on the branches.

Scaly Red-wood. Tree.

23 E. laurifòlium (Lam. dict. 2. p. 394. Cav. diss. 8. p. 400. t. 226.) leaves lanceolate; scales acute, concave; pedicels glomerated, terminal, somewhat umbellate, 3 times longer than the flowers. ♄. S. Native of the Mauritius. Roelàna laurifòlia, Comm. It is called by the French in the Mauritius *Bois de Ronde* or *Bois de Rongle*. Flowers greenish-yellow.

Laurel-leaved Red-wood. Clt. 1823. Tree 20 feet.

24 E. ni'tidum (Spreng. syst. 1. p. 390.) leaves obovate, obtuse, quite entire, very smooth, shining; peduncles axillary, aggregate, equal in length with the flowers. ♄. S. Native of Brazil.

Nitid-leaved Red-wood. Shrub 6 feet.

25 E. subcorda'tum (Bert. in herb. Balb. D. C. prod. 1. p. 575.) leaves ovate-rounded, rather cordate, somewhat emarginate, coriaceous, smooth, netted with nerves. ♄. S. Native of St. Domingo. Pedicels 4-5-together. Leaves feather-nerved, 4 or 5 lines long and broad.

Subcordate-leaved Red-wood. Tree.

26 E. Kunthia'num (St. Hil. fl. bras. 2. p. 96.) leaves elliptic-lanceolate, short-acuminated; stipulas 1-3-awned; flowers in fascicles, few or many-flowered; stamens shorter than the pistil. ♄. S. Native of Brazil in the province of Rio Janeiro.

Var. β; leaves blunter; flowers larger; calyx equal in length to the corolla. In the province of Minas Novas.

Kunth's Red-wood. Fl. May. Shrub 3 to 4 feet.

27 E. affi'ne (St. Hil. fl. bras. 2. p. 97.) leaves ovate-lanceolate, acuminated at the apex; fascicles few-flowered; stamens longer than the pistil. ♄. S. Native of Brazil in the province of Rio Janeiro. Very like the preceding, but the leaves are smaller.

Allied Red-wood. Fl. Sept. Shrub 3 to 4 feet.

28 E. na'num (St. Hil. fl. bras. 2. p. 97.) leaves obovate-oblong, very blunt; flowers in axillary fascicles; stamens shorter than the pistil; stipulas triangular. ♄. S. Native of Brazil in the province of Minas Geraes.

Dwarf Red-wood. Fl. March. Shrub ½ foot.

29 E. campe'stre (St. Hil. l. c.) stem nearly simple, suffruticose; leaves elliptic, very blunt, coriaceous; stipulas entire or bifid; flowers in fascicles; fascicles usually branched, short; stamens shorter than the pistil. ♄. S. Native of Brazil in the province of Minas Geraes.

Field Red-wood. Fl. Sept. Shrub 2 feet.

30 E. citrifòlium (St. Hil. fl. bras. 2. p. 94.) leaves lanceolate-oblong, acuminated; flowers in fascicles from the axils of the leaves and scales; stipulas bifid; stamens longer than the pistil. ♄. S. Native of Brazil in the province of Goyaz.

Citron-leaved Red-wood. Fl. July. Shrub 4 feet.

31 E. pu'lchrum (St. Hil. l. c.) leaves oblong; flowers axillary, in fascicles; stipulas 3-awned at the apex; stamens 2-3 times longer than the pistil. ♄. S. Native of Brazil near Rio Janeiro.

Neat Red-wood. Fl. Oct. Shrub.

32 E. suberòsum (St. Hil. fl. bras. 2. p. 95.) stem arboreous, covered with corky bark; leaves elliptical, coriaceous; flowers in fascicles; stamens longer than the pistil. ♄. S. Native of Brazil in the province of Minas Geraes, where it is called *Gallinha choco* and *Mercurio do campo*, and where the inhabitants make a red tincture from the bark.

Corky-barked Red-wood. Tree.

33 E. deci'duum (St. Hil. l. c.) leaves obovate-oblong, obtuse, acute at the base; stipulas somewhat triangular, acutish; flowers in fascicles; stamens longer than the pistil. ♄. S. Native of Brazil in the province of Minas Geraes. A small, twisted tree.

Deciduous Red-wood. Fl. Sept. Tree 15 feet.

§ 2. *Areolàta. Leaves areolate, especially two veins, almost parallel with the middle nerve, besides being in every part of the disk marked with feathery veins* (f. 106.).

34 E. areola'tum (Lin. amœn. 5. p. 397.) leaves elliptical, obovate, areolate, mucronate, glaucous beneath; pedicels lateral, many, aggregate, twice as long as the flower. ♄. S. Native of South America about Carthagena, and of the West Indies. E. Carthagenénse, Jacq. amer. 134. t. 187. f. 1.—Browne, jam. p. 128. t. 38. f. 2. The timber is flesh-coloured, and is considered excellent for the size of the tree. The flowers are white, with a scent not unlike that of the jonquil.

Areolate-leaved Red-wood. Tree 12 feet.

35 E. Mexica'num (H. B. et Kunth, nov. gen. amer. 5. p. 178.) leaves obovate-oblong, rounded at the apex, and usually retuse, acutish at the base, somewhat coriaceous, smooth, with 2 lines beneath; stipulas equal in length with the petiole; pedicels axillary, solitary, hardly longer than the petioles. ♄. S. Native of Mexico near Chilpacingo.

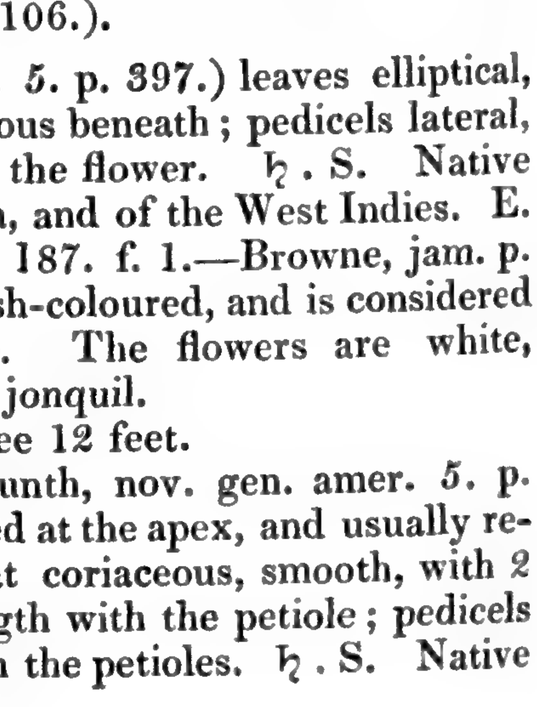
Mexican Red-wood. Tree 12 feet.

36 E. lineola'tum (D. C. prod. 1. p. 575.) leaves elliptical, rather mucronulate, membranaceous, areolate, somewhat glaucous beneath; pedicels lateral, 2-3-together, a little longer than the flower; fruit oblong, rather trigonal. ♄. S. Native of Cayenne. Cav. diss. 8. p. 404. in a note, under no. 555. t. 232. f. 10. Leaves 2 inches long, and almost an inch broad, with the middle nerve not very prominent. Flowers greenish-yellow.

Lined-leaved Red-wood. Tree 20 feet.

37 E. Cóca (Lam. dict. 2. p. 393.) leaves ovate, areolate, membranaceous; branches scaly; pedicels lateral, 2-3-together, hardly longer than the flower; fruit ovate, rather acute. ♄. S. Native of Peru. Ruiz et Pav. fl. per. 4. t. 398. The leaves of this shrub are mixed and masticated with *Quinoa*, which see. Flowers greenish-yellow. It is called *Coca* inPeru (f. 106.)

FIG. 106.



Coca Red-wood. Tree 20 feet.

38 E. rigi'dulum (D. C. prod. 1. p. 575.) leaves elliptical, blunt, somewhat cuneated at the base, stiff, areolate, pale beneath; branches scaly; pedicels aggregate; stamens longer than the calyx. ♄. S. Native of St. Martha. This species comes very near to *E. Cóca*, but differs in the leaves being stiff, not

soft, and in the pedicels and stamens being longer, and the styles shorter. Leaves an inch long. Flowers yellowish-green.

Stiff-leaved Red-wood. Tree 12 feet.

Cult. These trees and shrubs are hardly worth cultivating, except in general collections. They will thrive well in a mixture of loam and peat, and cuttings not too ripe will root in sand under a hand-glass, in a moist heat.

II. SE'THIA (in honour of S. Sethi, author of a work on culinary vegetables). H. B. et Kunth, nov. gen. amer. 5. p. 175. in a note. D. C. prod. 1. p. 576.

LIN. SYST. *Monadélphia, Decándria.* Calyx 5-lobed, and 5-parted. Styles 3, connected together, but with the stigmas distinct at the apex.

1 S. I'NDICA (D. C. prod. 1. p. 576.) leaves obtuse, feather-nerved, obovate-lanceolate; pedicels solitary, hardly longer than the flower; styles connate to the middle; calyx 5-lobed. ♄. S. Native of the East Indies on the Circars. Erythróxylon monógynum, Roxb. cor. 1. t. 88. Petals yellow, with white claws.

Indian Sethia. Fl. June, July. Clt. 1824. Tree 20 feet.

2 S. MICROPHY'LLA; leaves small, numerous, feather-nerved, obovate-oblong, obtuse, mucronulate; flowers few, axillary; styles connate at the base; calyx 5-parted. ♄. S. Native of Brazil in the province of Minas Geraes. Erythróxylon microphýllum, St. Hil. fl. bras. 2. p. 101.

Var. β; leaves obovate-roundish, a little larger than those of the species, and rather emarginate. In the province of Minas Geraes.

Small-leaved Sethia. Fl. Nov. Shrub 3 to 4 feet.

3 S. MAGNOLIÆFÒLIA; leaves large, obovate-elliptic, very blunt at the apex, acute at the base, glaucous beneath; flowers small, glomerate; calyx obovate, 5-cleft; stamens a little shorter or equal in length to the pistil; styles connate nearly to the apex. ♄. S. Native of Brazil in the province of Rio Janeiro. Erythróxylon magnoliæfòlium, St. Hil. fl. bras. 2. p. 93.

Magnolia-leaved Sethia. Fl. May. Shrub 3 feet.

Cult. The species will thrive well in a mixture of loam and peat, and cuttings not too ripe will root in sand under a bell-glass, in a moist heat.

ORDER XLV. MALPIGHIA'CEÆ (plants agreeing with *Malpighia* in important characters). Juss. gen. 252. ann. du. mus. 18. p. 479. D. C. prod. 1. p. 577.

Calyx 5-parted (f. 107. *a.* f. 109. *a.*), usually permanent. Petals 5 (f. 107. *b.* f. 109. *b.*), alternating with the lobes of the calyx, and inserted in the hypogynous disk, unguiculate (f. 107. *b.* f. 109. *b.*), sometimes unequal, but very seldom wanting. Stamens 10 (f. 107. *c.* f. 108. *e.*), alternating with the petals, and inserted with them, very rarely fewer. Filaments very rarely free, but usually connected together at the very base (f. 107. *c.*). Anthers roundish (f. 107. *c.* f. 108. *e.*). Ovary usually 3-lobed (f. 107. *e.*), constantly of 3 carpels, which are more or less joined together (f. 109. *d.*). Styles always 3 (f. 107. *d.* f. 109. *d.*), distinct or connected together. Fruit of 2-3 carpels (f. 107. *e.* f. 108. *e.* f. 109. *f.*) or of 3 cells, but sometimes with only 1 or 2 cells from abortion, dry (f. 108. *e.* f. 109. *f.*) or baccate (f. 107. *e.*), with 1-seeded cells (f. 108. *f.*). Seeds pendulous in the cells, perhaps always without albumen. Embryo more or less curved or straight, with a short radicle, and leafy or fleshy cotyledons. —Shrubs and trees. Branches sometimes climbing. Leaves opposite, but in the genus *Anomalópteris* they are alternate, always simple, without dots, and usually stipulate on both sides. Flowers racemose or corymbose, rarely axillary, solitary; pedicels usually jointed, and furnished with 2 small scales at the middle.—Probably *Passiflòra pállida* of Lour. fl. coch. p. 527. exclusive of the synonyme, is referable to this order. The petals being unguiculate and undulated separates this from all the neighbouring orders. The timber of all is of a deep-red colour, and the bark is febrifuge. Their shewy pink or yellow flowers and neat foliage render all the order worthy of cultivation.

Synopsis of the genera.

TRIBE I.

MALPIGHIE'Æ. *Styles 3, distinct* (f. 107. *d.*) *or joined in one. Fruit fleshy indehiscent* (f. 107. *e.*) *Leaves opposite.*

1 MALPI'GHIA. Calyx furnished with 8-10 glands on the outside at the base. Petals unguiculate (f. 107. *b.*). Stamens monadelphous at the base (f. 107. *c.*). Styles distinct (f. 107. *d.*). Drupe containing 3 1-seeded nuts (f. 107. *e.*).

2 BYRSO'NIMA. Calyx furnished with 8-10 large glands on the outside at the base. Petals unguiculate. Stamens 10, connected at the very base. Styles distinct. Drupe containing a 3-celled, 3-seeded nucleus.

3 BUNCHÒSIA. Calyx furnished with 8-10 large glands on the outside at the base. Petals unguiculate. Stamens 10, monadelphous at the base. Style 1, simple, bifid or trifid at the apex. Drupe containing 2-3 1-seeded nuts.

4 GALPHI'MIA. Calyx glandless. Petals unguiculate. Stamens 10, nearly free. Styles 3. Drupe containing 3 1-seeded nuts, which open on the back.

5 CAUCA'NTHUS. Calyx glandless. Petals unguiculate. Stamens 10, awl-shaped. Anthers with a prominent margin. Styles 3, awl-shaped. Fruit unknown.

TRIBE II.

HIPTA'GEÆ. *Style one or concrete into one. Carpels of fruit dry* (f. 108. *e.*), *indehiscent*, 1-*seeded* (f. 108. *f.*), *usually winged* (f. 108. *e.*). Leaves opposite or verticillate.

6 HI'PTAGE. Calyx furnished with 5 glands at the base. Petals fringed (f. 108. *b.*). Stamens 10 (f. 108. *e.*), one of which is longer than the rest. Carpels 3 (f. 108. *e.*) or from abortion only 1-2, 4-winged; wings unequal (f. 108. *e.*).

7 TRISTELLATE'IA. Petals inflexed, unguiculate. Stamens 10, 5 alternate ones smaller. Ovary impressed by 3 pores. Carpels 3, crowned by 6 appendages.

8 THRYA'LLIS. Petals roundish, unguiculate. Stamens 10, awl-shaped. Capsule triquetrous, separable into 3 parts; cells opening by the outer angle.

9 ASPICA'RPA. Petals wanting. Stamen 1, inclosed within the calyx. Ovary roundish, 2-celled, cleft at the apex, with a very short style in the fissure. Fruit indehiscent, 1-celled, containing 1 orbicular seed.

10 GAUDICHAU'DIA. Calyx girded by 8-10 glands on the outside at the base. Petals roundish, unguiculate. Stamens 5, connate, unequal. Style 1. Carpels 3, free or connected at

the base, 1-seeded. Samaræ 2, drawn out into a spur-like membrane at the base, winged on the back.

11 CAMA'REA. Calyx girded by 10 glands at the base, each lobe having 2. Stamens 6, 3 fertile, with the filaments connected to the apex, the other 3 hardly connected, middle one of these fertile, the lateral ones sterile. Style 1. Carpels 3 or only 2 from abortion, rather connate, 1-seeded, indehiscent, crested on the back, and wrinkled on the sides.

TRIBE III.

BANISTERIE'Æ. *Styles* 3 (f. 109. *d.*), *distinct. Carpels of fruit dry, indehiscent,* 1-*seeded* (f. 108. *f.*), *variously expanded into wings* (f. 108. *d.*). *Leaves opposite, rarely verticillate or alternate.*

12 HIRÆ'A. Calyx of 5 sepals, glandless, or furnished with glands. Petals roundish, unguiculate. Stamens 10, awl-shaped, connected at the very base, alternate ones longest. Styles 3. Carpels 3, samara-formed, rarely 2, 1-seeded, crested on the back, and surrounded by a membranous wing.

13 TRIO'PTERIS. Calyx furnished with 10 glands on the outside. Petals roundish, unguiculate. Stamens 10, awl-shaped, cohering at the very base, alternate ones largest. Styles 3. Carpels 3, 1-seeded, connected at the base, expanded into 3 wings, 2 superior and 1 inferior.

14 VARGA'SIA. Calyx glandless. Petals nearly sessile. Stamens 10, connected at the base. Styles joined at the base, but revolute at the top. Samaræ 3, winged at the apex. Leaves verticillate.

15 TETRA'PTERIS. All as in *Triópteris*, except that the carpels are expanded into 4 wings, 2 superior and 2 inferior smaller.

16 BANISTE'RIA. Calyx girded by 8 or 10 glands. Petals roundish, unguiculate (f. 109. *b.*). Stamens 10, awl-shaped, cohering at the base (f. 109. *c.*). Styles 3, usually expanded into leaves at the apex (f. 109. *d.*). Carpels 3 (f. 109. *f.*), indehiscent, 1-seeded, nearly distinct, ending in a simple, membranous wing, which is thickened on the upper side (f. 109. *d.*).

17 HETERO'PTERIS. All as in *Banistèria*, but the styles are less dilated at the apex, and the wing of the carpels is thickened on the lower side, as in *Acér*, not on the upper, as in *Banistèria*.

18 ANOMALO'PTERIS. Calyx 5-parted. Petals roundish, fringed, unguiculate. Samaræ 2, 1-seeded, ending in a wing. This genus differs from all the rest in the leaves being alternate.

19 NIO'TA. Calyx 4-5-parted, 2 external lobes glandular. Petals 4-5, obtuse. Stamens 8-10, free, furnished with scales at the base. Ovary turbinate, 4-5-lobed above. Style 1, filiform, between the lobes of the ovary. Capsules 4-5, or from abortion only 1-3, compressed, 1-celled, 1-seeded.

Tribe I.

MALPIGHIE'Æ (plants agreeing with *Malpíghia* in having fleshy fruit). D. C. prod. 1. p. 577.—Malpíghia, Lin. gen. no. 572. Styles 3, distinct (f. 107. *d.*) or joined in one. Fruit fleshy, indehiscent (f. 107. *e.*). Leaves opposite.

I. MALPI'GHIA (in honour of Marcello Malpighi, an Italian naturalist, once professor of medicine at Pisa. We have from him many curious observations on natural history, but he is most distinguished by a treatise on the anatomy of plants, published in 1675; he died in 1694.) Rich. in Juss. ann. mus. 18. p. 480. D. C. prod. 1. p. 577.

LIN. SYST. *Monadélphia, Decándria.* Calyx 5-parted, furnished with 8 or 10 glands at the base on the outside. Petals unguiculate (f. 107. *b.*). Stamens 10, with the filaments monadelphous to a short way at the base (f. 107. *c.*). Styles 3, distinct (f. 107. *d.*). Drupe (f. 107. *e.*), containing 3 1-seeded nuts. Peduncles axillary 1-flowered, or bearing umbellate pedicels. —Trees or shrubs, never climbing. Fruit of all eatable, but *M. glàbra* and *ùrens* only are in common use.

SECT. I. URE'NTES (from *urens*, stinging, burning; the leaves are beset with stinging bristles, which adhere to the hand when touched). D. C. prod. 1. p. 577. Bristles, especially those on the leaves, fixed by their centre, horizontal, stiff, pungent at both ends, when touched adhering to the hands.

1 M. FUCA'TA (Ker, bot. reg. t. 189.) branches smooth; leaves elliptical, shining, clothed with decumbent bristles beneath, but nakedish above; pedicels axillary, umbellately corymbose, 4 times shorter than the leaves, upper petal rather larger than the rest, all with jagged margins. ♄. S. Native of the West Indies? M. macrophýlla, Desf. cat. 166. but not of Juss. Flowers pale-pink. Leaves 4 inches in length.

Painted Barbadoes Cherry. Fl. Mar. Aug. Clt. 1814. Sh. 8 ft.

2 M. U'RENS (Lin. spec. 6019.) branches smooth; leaves oblong-ovate, clothed with decumbent bristles beneath, smooth above; peduncles 1-flowered, aggregate, one-half shorter than the leaves; petals equal. ♄. S. Native of South America. Mill. ill. t. 181. f. 1. Cav. diss. t. 235. f. 1. Lam. ill. t. 381. f. 1. Flowers pink or pale-purple. It is called by the French *Bois de Capitain*, and by the English in the West Indies *Cowhage Cherry*. The fruit is insipid, and is only eaten by children and negroes.—Ker. bot. reg. 94.

Stinging Barbadoes Cherry. Fl. June, Oct. Clt. 1737. Shrub 3 to 6 feet.

3 M. GNI'DÆ (Spreng. neu. entd. 3. p. 51.) branches hairy; leaves elliptical-oblong, acute, hairy above, beset with stinging decumbent bristles beneath, and on the margin; peduncles 1-flowered, aggregate, one-half shorter than the leaves. ♄. S. Native of St. Domingo. Flowers pink.

Gnida's Barbadoes Cherry. Shrub 6 feet.

4 M. SETÒSA (Bert. ined. in Spreng. neu. entd. 3. p. 50.) branches smooth; leaves elliptical-oblong, obtuse, beset with decumbent, stinging bristles beneath, smooth above; pedicels axillary, 1-flowered, almost the length of the leaves, furnished with 2 scales just above their middle. ♄. S. Native of St. Domingo and Martinique. M. Martinicénsis, Jacq. amer. 136. Flowers pink. Jacquin and two of his companions ate a great quantity of the fruit of this tree, being very thirsty with travelling in the heat in Martinico, without suffering from them in any degree. It is the most prurient of all the species.

Bristly Barbadoes Cherry. Tree 14 feet.

5 M. CUBE'NSIS (H. B. et Kunth, nov. gen. amer. 5. p. 145.) branches rather hairy; leaves oblong-lanceolate, rather mucronate, rounded at the base, quite entire, smooth and shining above, but beset with stinging, pressed bristles beneath. ♄. S. Native of Cuba near Havannah. Flowers sulphur-coloured. Very like *M. angustifòlia.*

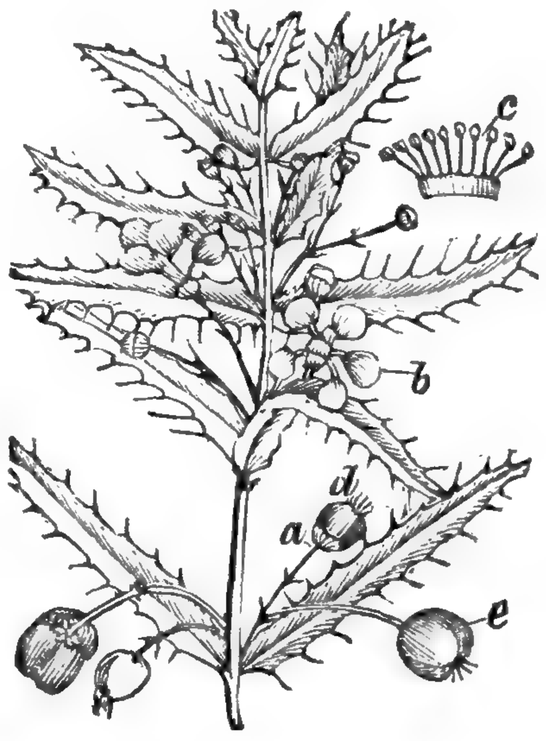
Cuba Barbadoes Cherry. Fl. July, Aug. Clt. 1824. Shrub 7 feet.

6 M. ANGUSTIFÒLIA (Lin. spec. 610.) branches smooth; leaves linear-lanceolate, acute, beset on both surfaces with decumbent, stinging bristles; peduncles axillary, umbellate. ♄. S. Native of South America, particularly in the West Indies. Cav. diss.

8. p. 409. t. 236. f. 1. Lodd. bot. cab. 321. M. lineàris, Jacq. 135. Flowers pale-purple or pink. Fruit small, oval, furrowed, when ripe of a dark-purple colour.

Narrow-leaved Barbadoes Cherry. Fl. July, Aug. Clt. 1737. Shrub 7 feet.

FIG. 107.



7 M. AQUIFÒLIA (Lin. spec. 611.) branches smooth; leaves lanceolate, with spiny teeth, beset with decumbent, stinging bristles beneath; peduncles axillary, solitary or twin, 2-flowered. ♄. S. Native of South America and the West Indies. Plum. ed. Burm. t. 168. f. 1. Cav. diss. 8. p. 409. t. 236. f. 2. M. illicifòlium, Mill. dict. no. 8. Flowers pale-blush or pink. Fruit of a dark-purple colour when ripe (f. 197.).

Holly-leaved BarbadoesCherry. Fl. Aug. Sept. Clt. 1759. Shrub 7 feet.

8 M. MACROPHY'LLA (Willd. enum. suppl. p. 37.) leaves large, oval, quite entire, beset with silky hairs above, and with stinging, decumbent bristles beneath; umbels of flowers lateral, sessile. ♄. S. Native of Brazil. Col. hort. rip. t. 11. Flowers red or pink.

Long-leaved Barbadoes Cherry. Fl. July, Aug. Clt. 1820. Tree 14 feet.

SECT. II. APY'RÆ (from απυρος, *apyros*, free from fire; in allusion to the leaves being without stinging bristles). D. C. prod. 1. p. 578. Leaves smooth or clothed with hairs, which are not stinging, nor fixed by their centre.

* *Leaves smooth.*

9 M. COCCI'FERA (Lin. ed. Reich. 2. p. 371.) leaves obovate or roundish, with spiny teeth, smooth, shining; peduncles axillary, solitary, furnished with two scales at their middle. ♄. S. Native of South America. A small bushy shrub, thickly beset with box-like leaves. Flowers pale-blush or pink. Fruit small, conical, furrowed, of a purple colour when ripe. Ker. bot. reg. 568.

Berry-bearing Barbadoes Cherry. Fl. June, Aug. Clt. 1733. Shrub 2 feet.

10 M. GLA'BRA (Lin. spec. 609.) leaves ovate, quite entire, smooth, shining; peduncles axillary, umbellate. ♄. S. Native of South America, particularly in the West Indies. Mill. ill. t. 181. f. 2. Cav. diss. t. 234. f. 1.—Sloan. jam. 2. p. 106. t. 207. f. 2. Flowers rose-coloured or bright purple. Fruit round, red, and smooth, about the size and shape of a cherry, having one or more furrows on the outside, and containing within a reddish, sweetish, not unpleasant, copious, juicy pulp, and 3 or 4 triangular nuts, so fitted together as to appear one, but this is the case in all the species. This tree is cultivated in all the West Indian Islands, and in many parts of the main land of South America, for its fruit, which is esteemed there, but is much inferior to our cherries. It is called in the British West Indies *Barbadoes Cherry*.—Sims, bot. mag. 813.

Smooth-leaved or True Barbadoes Cherry. Fl. March, Sept. Clt. 1757. Tree 16 feet.

11 M. BIFLÒRA (Poir. dict. 4. p. 326.) leaves ovate, lanceolate, acute, smooth; peduncles axillary, 2-flowered. ♄. S. Native of South America in woods. M. punicifòlia, Cav. diss. 8. p. 406. t. 234. f. 2. Leaves entire. Flowers pale-red.

Two-flowered Barbadoes Cherry. Fl. July, Aug. Clt. 1810. Shrub 10 feet.

12 M. PUNICIFÒLIA (Lin. spec. 609.) leaves ovate, quite entire, smooth; peduncles axillary, 1-flowered. ♄. S. Native of South America, particularly of the West Indies.—Plum. ed. Burm. t. 166. f. 2.—Pluck. phyt. t. 57. f. 7. Flowers rose-coloured. Fruit about the size and shape of a cherry, very succulent, and of a pleasant, rather acid taste. This shrub has much the appearance of the pomegranate.

Pomegranate-leaved Barbadoes Cherry. Fl. July, Aug. Clt. 1690. Shrub 8 feet.

13 M. NI'TIDA (Mill. dict. no. 5. Lin. spec. 609.) leaves lanceolate, acute, quite entire, smooth, shining; peduncles umbellately-racemose, axillary and terminal. ♄. S. Native of South America, particularly about Carthagena, and in the West Indies. A beautiful shrub, with pink flowers.

Shining-leaved Barbadoes Cherry. Fl. March, July. Clt. 1733. Shrub 10 feet.

14 M. BERTERIA'NA (Spreng. syst. 2. p. 383.) leaves obovate, somewhat emarginate, membranaceous, opaque, smooth; peduncles axillary, aggregate, usually 1-flowered. ♄. S. Native of Guadaloupe. Flowers rose-coloured?

Bertero's Barbadoes Cherry. Shrub 10 feet.

15 M. EMARGINA'TA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 578.) leaves ovate, obtuse, wavy, emarginate at the apex, smooth; peduncles axillary, divided to the base into 4 or 5 umbellate pedicels. ♄. S. Native of Mexico. Flowers red or pale-pink?

Emarginate-leaved Barbadoes Cherry. Shrub 8 feet?

** *Leaves pubescent or downy.*

16 M. FAGI'NEA (Swartz, fl. ind. occid. 2. p. 850.) leaves oblong-ovate, quite entire, silky and shining beneath; peduncles axillary, 3-parted, umbellate. ♄. S. Native of the Caribbee Islands. Flowers yellow. Fruit unknown.

Beach-leaved Barbadoes Cherry. Fl. July, Aug. Clt. 1820. Shrub 10 feet?

17 M. MALIFÒLIA (Nees et Mart. in nov. act. bonn. 12. p. 21.) tomentose; leaves cordate, ovate, acute, quite entire, shining above, but villously tomentose beneath, furnished with 2 glands at the base; flowers in 3-parted umbels, axillary. ♄. S. Native of Brazil about Tamburil. Petals red and white, spotted, ciliated.

Apple-leaved Barbadoes Cherry. Shrub 6 to 8 feet.

18 M. SACCHARI'NA; leaves large, obovate, tapering to the base, pale beneath, on long footstalks; pedicels axillary, solitary, short, and thick. ♄. S. Native of Sierra Leone. The fruit of this tree is sold in great quantities in the market of Freetown, during the months of February and March, under the name of *sugar-plum*; they are about the size of the bullace-plum, round, rough on the outside, with scattered warts, of a greyish colour, and half-filled by 3 or 4 oval-flatted seeds, which are so fitted together as to appear one; surrounded by a very sweet agreeable pulp. It is a beautiful and lofty tree, sometimes quite clear of branches to the height of 60 feet, where it terminates in a fine head.

Sierra Leone *Sugar*-plum. Fl. Dec. Jan. Tree 80 feet.

19 M. INCA'NA (Mill. dict. no. 3.) leaves lanceolate, hoary beneath; peduncles axillary, umbellate. ♄. S. Native of Campechy. M. Campechiénsis, Poir. dict. 4. p. 333. Flowers rose-coloured. M. canéscens, Ait. hort. kew. ed. 1. vol. 2. p. 105?

Hoary-leaved Barbadoes Cherry. Clt. 1742. Tree 18 feet.

† *Doubtful species, with yellow flowers.*

20 M. GRANDIFÒLIA (Jacq. amer. p. 137.) leaves lanceolate-oblong, entire; peduncles axillary, in racemose corymbs. ♄. S. Native of Martinique in woods. Leaves a foot long. Flowers yellow. This is probably a species of *Bunchòsia*.

Great-leaved Barbadoes Cherry. Shrub 10 feet.

21 M. DU'BIA (Cav. diss. 8. p. 413. t. 242.) leaves ovate-acute, cartilaginous, entire, smooth; branches dotted; racemes axillary, panicled. ♄. S. Native of St. Domingo. Flowers small, yellow. Fruit unknown. It may be a species of *Bunchósia* or *Banistèria*. The styles are short, not exserted.

Doubtful Barbadoes Cherry. Fl. Jul. Aug. Clt. 1820. Sh. 10 ft.

22 M. OBOVA'TA (H. B. et Kunth. nov. gen. amer. 5. p. 146.) leaves obovate, acute, cordate, quite entire, coriaceous, shining above, rather hairy beneath; umbels axillary, twin, 4-flowered. ♄. S. Native of South America on the banks of the river Magdalena near Nares. There are 5 hypogynous scales seated between the stamens and the ovary. Flowers yellow. This plant may probably form the type of a distinct genus.

Obovate-leaved Barbadoes Cherry. Shrub 10 feet.

23 M. TERNIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 146.) leaves 3 in a whorl, oblong-lanceolate, acute, rounded at the base, quite entire, rather hairy above and shining, but clothed with soft down beneath; umbels axillary, compound, 3-4-rayed, many-flowered. ♄. S. Native of New Granada near Pandi. Flowers yellow. Fruit unknown. This is probably a species of *Vargàsia*.

Tern-leaved Barbadoes Cherry. Shrub 12 feet.

Cult. These trees and shrubs will thrive in any light soil, or a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, in heat. *M. coccífera nítida*, and *aquifòlia* are the most worthy of general cultivation.

II. BYRSO'NIMA (from *byrsa*, a hide, and *nimius*, much used; because the bark of some of the species is used in tanning in Brazil). Rich. in Juss. ann. mus. 18. p. 481.

LIN. SYST. *Monadélphia, Decándria*. Calyx 5-parted, furnished with 8 or 10 large glands on the outside at the base. Petals unguiculate. Stamens 10, connected together at the base, but a very little way. Styles 3. Drupe containing a 3-celled, 3-seeded nucleus.—Racemes of flowers spicate and terminal, simple or branched. Flowers yellow, rarely white.

* *Leaves clothed with velvety down beneath.*

1 B. VERBASCIFÒLIA (D. C. prod. 1. p. 579.) leaves lanceolate-obovate, quite entire, downy on both surfaces; racemes terminal; trunk thick, knotted, dwarf. ♄. S. Native of Guiana by the sea-shore. Malpíghia verbascifòlia, Aubl. guian. 1. p. 460. t. 184. Cav. diss. 8. p. 411. t. 240. Leaves grey. The hairs on the upper surface of the leaves are fixed by their centre. Flowers yellow. A decoction of the roots and branches is used in Guiana as a detergent in ulcers. This decoction has a red tinge and is vulnerary and astringent.

Mullein-leaved Byrsonima. Fl. Jul. Aug. Clt. 1810. Sh. 1 ft.

2 B. LAURIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 147.) leaves ovate-oblong, narrowed towards the top, cuneated at the base, and rather complicated, hairy above, downy beneath and hoary; branches clothed with downy hairs; calyx silky-villous. ♄. S. Native of Llanos in Cumana. Malpíghia laurifòlia, Spreng. syst. 2. p. 385. Very like *B. verbascifòlia*.

Laurel-leaved Byrsonima. Shrub.

3 B. NÍTIDA (Ruiz et Pav. fl. per. vol. icon. under *Malpíghia*,) leaves ovate-oblong; racemes terminal and axillary, branched, panicled; petals fringed; fruit large, 3-seeded; stigmas 3. ♄. S. Native of Peru.

Shining-leaved Byrsonima. Shrub 10 feet.

4 B. ERIO'PODA (D. C. prod. 1. p. 579.) leaves oval, obtuse, tapering to the base, coriaceous, at length shining above, underneath as well as above hairy on the nerves; peduncles very hairy. ♄. S. Native of South America. Malpíghia rùfa, Poir. dict. 4. p. 332.

Hairy-peduncled Byrsonima. Shrub.

5 B. PHLOMOÌDES; leaves obovate-roundish, with 2 glands at the base of each, scabrous above, and clothed with cinereous down beneath; racemes compound, axillary. ♄. S. Native of Brazil. Malpíghia phlomoìdes, Spreng. syst. 2. p. 385. Flowers yellow.

Phlomus-like Byrsonima. Shrub.

6 B. NERVÒSA (D. C. prod. 1. p. 579.) leaves oval, blunt at both ends, shining above, wrinkled, but clothed with rufous down beneath, feather-nerved, with the nerves and nervelets prominent; racemes crowded with flowers and covered with brown down. ♄. S. Native of Brazil. Malpíghia macrophýlla, Juss. in Pers. ench. 1. p. 506. Flowers yellow.

Nerved-leaved Byrsonima. Shrub 8 feet.

7 B. COTINIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 152. t. 447.) leaves obovate, obtuse, tapering to the base, rather membranaceous, younger ones velvety on both surfaces, with rufous down, adult ones smooth above, but rather velvety beneath; racemes simple, crowded with flowers, rather velvety; glands of calyx continuous. ♄. S. Native of Mexico about Acapulca. Flowers copper-coloured.

Cotinus-leaved Byrsonima. Shrub 6-12 feet.

8 B. FERRUGI'NEA (H. B. et Kunth, nov. gen. amer. 5. p. 151. t. 446.) leaves obovate-roundish, each with a short point, cuneated at the base, covered with soft pubescence above, but clothed with rusty down beneath, as well as the branches and calyxes; racemes simple; calycine glands 10, distinct. ♄. S. Native about the river Orinoco in woods. Flowers yellow.

Rusty-leaved Byrsonima. Shrub.

9 B. ALTI'SSIMA (D. C. prod. 1. p. 579.) leaves ovate-oblong, covered with rufous down beneath but beset with bristles above, which are fixed by their centre; racemes clothed with rufous hairs. ♄. S. Native of Guiana in woods. Malpíghia altíssima, Aubl. guian. 1. p. 455. t. 181. A tree from 60-80 feet high. Flowers white. Drupe reddish, almost dry.

Tallest Byrsonima. Fl. July, Aug. Clt. 1820. Tree 80 ft.

10 B. CRASSIFÒLIA (D. C. prod. 1. p. 579.) leaves ovate, acute at both ends, at length smooth above, but clothed with brownish down beneath; racemes erect, elongated, brownish-velvety. ♄. S. Native of Guiana and Cayenne, and also at Orinoco? Malpíghia crassifòlia, Lin. spec. 610. Aubl. guian. 1. p. 457. t. 182. B. crassifòlia, H. B. et Kunth, nov. gen. amer. 5. p. 151.? Flowers yellow. Drupe greenish. The inhabitants of Guiana consider an infusion of the bark a febrifuge, and as stopping vomiting.

Var. β, Moureíla (Aubl. guian. 1. p. 459. t. 183.) leaves acute; flowers spiked. ♄. S. Native of Guiana and Cayenne in woods. Cav. diss. 8. p. 412. t. 241. Flowers yellow. This tree is called *Moureila* in Guiana. Tree 20 feet.

Thick-leaved Byrsonima. Fl. Jul. Aug. Clt. 1793. Sh. 6 ft.

11 B. CHRYSOPHY'LLA (H. B. et Kunth, nov. gen. amer. 5. p. 151.) leaves oblong, short-acuminated, acute at the base, rather wavy on the margin and revolute, smooth above, clothed beneath with silky down, which is of a golden rusty colour; racemes simple; calyxes glandless. ♄. S. Native of South America at St. Carlos del Rio Negro. Galphímia chrysophýlla, Spreng. syst. 2. p. 385. Flowers yellow.

Golden-leaved Byrsonima. Fl. Aug. Clt. 1823. Tr. 14 ft.?

12 B. MONTA'NA (H. B. et Kunth, nov. gen. amer. 5. p. 151.) leaves elliptical-oblong, acute at both ends, smooth above, pubescent beneath; branches and calyxes covered with rusty down; racemes branched. ♄. S. Native of Cumana on Mount Cocollar. Flowers yellow. Fruit unknown.

Mountain Byrsonima. Tree 20 feet.

13 B. LANCEOLA'TA (Poir. dict. 4. p. 332.) leaves lanceolate-oblong, at length becoming smooth above, but brownish-velvety

beneath: racemes erect, elongated, compound at the top. ♄. S. Native of Cayenne. Flowers yellow.

Lanceolate-leaved Byrsonima. Tree 20 feet.

14 B. PU'LCHRA (D. C. prod. 1. p. 580.) leaves oval-oblong, acute at both ends, brownish-velvety beneath; racemes erect, simple; drupe ovate, mucronated. ♄. S. Native of Mexico on the mountains. Malpíghia púlchra, Moc. et Sesse, fl. mex. icon. ined. Drupe scarlet. Petals cordate, yellow when young, but at last becoming reddish.

Fair Byrsonima. Tree 16 feet?

15 B. SERI'CEA (D. C. prod. 1. p. 580.) leaves elliptical-oblong, acuminated at both ends, smooth and shining above, but covered with silky rufous down beneath; racemes rather branched, somewhat velvety. ♄. S. Native of Brazil. Flowers yellow.

Silky-leaved Byrsonima. Shrub.

16 B. CINE'REA (D. C. prod. 1. p. 580.) leaves narrow-lanceolate, shining above, younger ones covered with rufous-velvety down on both surfaces, adult ones underneath as well as the branches clothed with cinereous down; racemes spicate, simple. ♄. S. Native of French Guiana. Malpíghia cinèrea, Poir. suppl. 4. p. 7. Flowers yellow.

Cinereous Byrsonima. Shrub.

17 B. RHOPALÆFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 148.) leaves elliptical, bluntish, rounded at the base, complicated, smooth, younger ones underneath as well as the branches and calyxes clothed with rusty down; racemes simple. ♄. S. Native of Cumana and Caraccas in hot places. Flowers yellow. Fruit unknown.

Rhopala-leaved Byrsonima. Tree 20 feet.

18 B. NITIDI'SSIMA (H. B. et Kunth, l. c.) leaves nearly sessile, elliptical, rounded at both ends, puberulous above and shining, but clothed with rufous pubescence beneath as well as the branches; racemes simple; calyx clothed with rufous down, with 10 distinct glands. ♄. S. Native on the banks of the Orinoco in the mission of Panumana. Flowers white.

Most-shining-leaved Byrsonima. Tree 20 feet.

* * *Leaves in the adult state smooth on both surfaces.*

19 B. SPICA'TA (D. C. prod. 1. p. 580.) leaves lanceolate, smooth, rusty beneath; racemes spiked, erect, crowded, rather velvety; petals halbert-shaped, very blunt. ♄. S. Native of St. Domingo, Guadaloupe, Porto-Rico, and Brazil. Malpíghia spicàta, Cav. diss. 8. p. 409. t. 237. Flowers yellow.

Spiked-flowered Byrsonima. Fl. July, Aug. Clt. 1810. Shrub 6 feet.

20 B. LU'CIDA (D. C. prod. 1. p. 580.) leaves obovate, cuneiform, obtuse, or mucronate, smooth, veinless, shining; racemes spiked, erect, short, smooth; pedicels hispid; petals hastately kidney-shaped. ♄. S. Native of the Caribbee Islands, St. Thomas, and Guadaloupe. Malpíghia lùcida, Swartz, fl. ind. occ. 2. p. 852. Sims, bot. mag. t. 2462. Flowers pink. A beautiful shrub.

Lucid-leaved Byrsonima. Fl. May, Aug. Clt. 1759. Sh. 8 ft.

21 B. COCCOLOBÆFO'LIA (H. B. et Kunth, nov. gen. amer. 5. p. 148.) leaves sessile, roundish, ovate, blunt, obsoletely cordate, smooth as well as the branchlets; racemes simple; calyxes smoothish. ♄. S. Native of the Caraccas in arid places near Villa de Cura. Flowers white.

Coccoloba-leaved Byrsonima. Tree 16 feet.

22 B. LÆVIGA'TA (D. C. prod. 1. p. 580.) leaves ovate, obtuse, even, smooth; racemes spiked, crowded with flowers, elongated. ♄. S. Native of Cayenne and probably in Guadaloupe. Malpíghia lævigàta, Poir. dict. 4. p. 332. Petals yellowish-white.

Smooth-leaved Byrsonima. Shrub?

23 B. E'LEGANS (D. C. prod. 1. p. 580.) leaves oblong, or oblong-lanceolate, membranaceous, very smooth; racemes elongated, nodding; pedicels glandular. ♄. S. Native of the sea-shore in the island of Arowabisch in Guiana. Malpíghia élegans, Meyer, prim. esseq. 178. Flowers flesh-coloured.

Elegant Byrsonima. Tree 40 feet.

24 B. ANGUSTIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 153. t. 449.) leaves linear-oblong, retuse at the apex, acutish at the base, smooth, cretaceously-pruinose beneath; stipulas connate at the base; racemes branched; calyxes clothed with silky pubescence, furnished with 10 glands. ♄. S. Native of South America near where the rivers Atabapo and Orinoco join. Malpíghia pruinòsa, Spreng. syst. 1. p. 384. Flowers red.

Narrow-leaved Byrsonima. Tree 16 feet.

25 B. DE'NSA (D. C. prod. 1. p. 580.) leaves ovate-lanceolate, coriaceous, shining on both surfaces; racemes densely spiked; pedicels hairy. ♄. S. Native of Guiana. Malpíghia dénsa, Poir. dict. suppl. 4. p. 7. Flowers red.

Dense-racemed Byrsonima. Shrub.

26 B. CORIA'CEA (D. C. prod. 1. p. 580.) leaves ovate, acute, quite entire, smooth on both surfaces; racemes densely spiked, pubescent, erect. ♄. S. Native of the south of Jamaica among bushes on the lower mountains of Liguanea. Malpíghia coriàcea, Swartz, fl. ind. occ. 2. p. 854.—Sloan. hist. 2. p. 20. t. 163. f. 1. Flowers yellow, sweet-scented. Brown calls this tree *Locust-tree*.

Leathery-leaved Byrsonima. Fl. May, Aug. Clt. 1814. Tree 30 feet.

27 B. BRACHYSTA'CHIA (D. C. prod. 1. p. 581.) leaves oval, acute at both ends, quite entire, smooth; racemes spiked, erect, brownish-velvety, one-half shorter than the leaves. ♄. S. Native of Brazil. Flowers yellow.

Short-spiked Byrsonima. Shrub.

28 B. PA'LLIDA (D. C. prod. 1. p. 581.) leaves ovate, smooth on both surfaces, shining above, very coriaceous, pale; racemes spiked, with short, smooth pedicels; drupe small, globosely-pear-shaped. ♄. S. Native of Cayenne, Malpíghia pállida, Poir. suppl. 4. p. 7. Flowers yellowish.

Pale-leaved Byrsonima. Clt. 1820. Shrub 6 feet?

29 B. RETICULA'TA (D. C. prod. 1. p. 581.) leaves ovate-lanceolate, netted, smooth, shining above; racemes large, compound, reflexed at the apex; bracteas ovate. ♄. S. Native of Cayenne. B. spicàta, Poppig. Malpíghia reticulàta, Poir. suppl. 4. p. 8. Flowers pale-yellow.

Netted-leaved Byrsonima. Fl. Jul. Aug. Clt. 1823. Sh. 10 ft.

30 B. MO'LLIS (D. C. prod. 1. p. 581.) leaves ovate-oblong, smooth, even, coriaceous; racemes panicled, short, smooth. ♄. S. Native of Cayenne. Malpíghia móllis, Poir. suppl. 4. p. 6. Flowers yellowish.

Soft-leaved Byrsonima. Shrub 6 feet.

31 B. DIPHY'LLA (Jacq. amer. 136.) leaves oval, smooth, quite entire; racemes simple, on small 2-leaved branches. ♄. S. Native of Carthagena in woods by the sea-side. Flowers yellow. Fruit yellow.

Two-leaved-racemed Byrsonima. Shrub 8 feet.

32 B. GUADALUPE'NSIS; leaves elliptical-oblong, quite entire, shining above, rusty beneath, smooth; racemes terminal, loosely corymbose. ♄. S. Native of Guadaloupe. Flowers yellowish.

Guadaloupe Byrsonima. Shrub?

33 B.? VOLU'BILIS (D. C. prod. 1. p. 581.) leaves oval, acuminated, smooth, shining; branches twining, usually tubercled; racemes corymbosely-umbellate, terminal. ♄. ب. S. Native of the West Indies. Malpíghia volùbilis, Sims, bot. mag. t. 809. Flowers yellow. Fruit unknown. This plant is most probably a species of *Banistèria*.

Twining Byrsonima. Fl. Aug. Sept. Clt. 1793. Sh. tw.

Cult. All the species will thrive well in any light soil, or a mixture of loam and peat, and ripened cuttings will root freely in sand under a hand-glass, in heat. Most of the species are rather shewy.

III. BUNCHO'SIA (from *Bunchos*, the Arabic name for coffee; in allusion to the similarity between the seeds of this genus and those of coffee). Juss. ann. mus. 18. p. 481. H. B. et Kunth, nov. gen. amer. 5. p. 183. D. C. prod. 1. p. 581.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted, furnished on the outside with 8 or 10 glands. Petals unguiculate. Stamens 10, monadelphous at the base. Style 1, simple, bifid or trifid at the apex. Drupe enclosing 2, but very rarely 3, nuts, which are flat on one side and convex on the other.—Racemes axillary, loosely spiked or somewhat panicled.

* *Leaves, petioles, or pedicels glandular.*

1 B. glandulòsa (D. C. prod. 1. p. 581.) leaves ovate-elliptical, acuminated, smooth; petioles furnished with 2 glands at the top; racemes simple, shorter than the leaves. ♄. S. Native of the Antilles. Malpíghia glandulòsa, Cav. diss. 8. p. 411. t. 239. f. 2. Flowers yellow.

Glandular-petioled Bunchosia. Clt. 1804. Tree 20 feet.

2 B. glanduli'fera (H. B. et Kunth, nov. gen. amer. 5. p. 154.) leaves elliptical-ovate, on short petioles, wavy, pubescent on both surfaces, furnished with 4 glands beneath at the base; racemes simple; pedicels each furnished with 1 gland. ♄. S. Native of Caraccas and of Guadaloupe in woods. Malpíghia glandulòsa, Jacq. icon. rar. t. 469. M. glandulífera, Jacq. coll. 4. p. 207. and 5. p. 5. f. 3. Flowers yellow. Fruit red.

Gland-bearing Bunchosia. Fl. Mar. May. Clt. 1806. Sh. 10 feet.

3 B. cornifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 154.) leaves elliptical, acuminated, acute at the base, pubescent on both surfaces as well as the branches, with close-pressed silvery hairs, and furnished with 2 glands towards the base; racemes simple, each pedicel furnished with 1 gland. ♄. S. Native of New Granada between Turbaco and Carthagena. Petals white. Fruit yellow.

Dogwood-leaved Bunchosia. Shrub 12 feet.

4 B. polysta'chya (D. C. prod. 1. p. 581.) leaves oblong, acute, smooth, shining, furnished beneath at the base with 2 glands; racemes rather panicled; pedicels each furnished with 1 gland; stigma capitate, 2-lobed. ♄. S. Native of the West Indies and Cumana. Malpíghia polystàchya, Andr. bot. rep. t. 604. Flowers yellow. Fruit red, eatable.

Many-spiked Bunchosia. Fl. Mar. May. Clt. 1806. Sh. 10 ft.

5 B. me'dia (D. C. prod. 1. p. 581.) leaves oblong-lanceolate, acute, smooth, shining, furnished beneath with 2 glands, approximating to the midrib; racemes simple; pedicels each bearing 1 gland on the middle; stigma capitate, 2-lobed. ♄. S. Native of the West Indies. Malpíghia mèdia, Ait. hort. kew. ed. 2. vol. 3. p. 103. Flowers yellow.

Intermediate Bunchosia. Fl. Mar. May. Clt. 1790. Sh. 10 ft.

6 B. pilòsa (H. B. et Kunth, nov. gen. amer. 5. p. 154.) leaves almost sessile, oblong, acute, rounded at the base, hairy above, and covered beneath with bristly hairs, and hoary as well as the branchlets, and furnished with 7 or 9 glands towards the margin; racemes simple, each pedicel furnished with 1 gland above the middle. ♄. S. Native of New Granada near Turbaco. Flowers yellow.

Pilose Bunchosia. Tree 12 feet.

7 B. tubercula'ta (D. C. prod. 1. p. 581.) branches tubercled; leaves ovate-lanceolate, rather pubescent; racmees 3-times shorter than the leaves, each pedicel furnished with 1 gland above the base. ♄. S. Native of Caraccas. Malpíghia tuberculàta, Jacq. schœnbr. 1. p. 54. t. 104. Flowers yellow. Fruit red.

Tubercled-branched Bunchosia. Fl. May, Aug. Clt. 1806. Shrub 8 feet.

8 B. argе'ntea (D. C. prod. 1. p. 582.) branches puberulous; leaves lanceolate, silvery beneath; racemes opposite, simple, pubescent, each pedicel bearing 1 gland. ♄. S. Native of Caraccas. Malpíghia argéntea, Jacq. fragm. 106. t. 83. Flowers yellow. Glands of calyx elongated.

Silvery-leaved Bunchosia. Fl. Jul. Aug. Clt. 1810. Sh. 10 ft?

9 B. glau'ca (H. B. et Kunth, nov. gen. amer. 5. p. 155.) leaves elliptical-oblong, acuminated, acute at the base, smoothish above, covered beneath with close-pressed hairs, glaucescent, and furnished with 4-11 glands towards the margin; branches warted; racemes opposite, pubescent, each pedicel furnished with 1 gland. ♄. S. Native of New Granada near Honda. Very like *B. nítida*. Flowers yellow.

Glaucous-leaved Bunchosia. Shrub 12 feet.

** *Leaves, petioles, and pedicels without glands.*

10 B. ni'tida (D. C. prod. 1. p. 582.) leaves oblong, acuminated, smooth, glandless; racemes elongated, almost the length of the leaves. ♄. S. Native of Jamaica, Guadaloupe, and St. Domingo, in sunny places. Malpíghia nítida, Lin. spec. 609. Cav. diss. 8. p. 411. t. 239. f. 1. Flowers yellow. Fruit large, red, and are much eaten by turkeys and other large fowls. Leaves 4 inches long.

Shining-leaved Bunchosia. Fl. Jul. Aug. Clt. 1800. Sh. 4 ft.

11 B. armenì'aca (D. C. prod. 1. p. 582.) leaves ovate-oblong, acute, coriaceous, smooth; racemes elongated, almost the length of the leaves; styles rather distinct. ♄. S. Native of Peru in the province of Chanca. Malpíghia Armenìaca, Cav. diss. 8. p. 410. t. 288. The fruit in shape is compared to that of *Prunus Armenìaca*, and the nucleus is said to be poisonous. Leaves 4 or 5 inches long. Flowers yellow.

Apricot-fruited Bunchosia. Shrub.

12 B. odora'ta (D. C. prod. 1. p. 582.) leaves ovate, emarginate, downy on both surfaces; racemes opposite; stigma bifid or trifid. ♄. S. Native of Carthagena among bushes. Malpíghia odoràta, Jacq. amer. p. 136. t. 177. f. 41. Flowers yellow, sweet-scented.

Sweet-scented-flowered Bunchosia. Fl. May, Aug. Clt. 1806. Shrub 7 feet.

† *Species not sufficiently known.*

13 B.? panicula'ta (D. C. prod. 1. p 582.) leaves oblong, cordate, acuminated, smooth; racemes panicled, lateral, and terminal. ♄. S. Native of Jamaica. Malpíghia paniculàta, Mill. dict. no. 6. Flowers purple.

Panicled-flowered Bunchosia. Fl. May, Aug. Clt. 1790. Shrub 10 feet?

14 B. cane'scens (D. C prod. 1. p. 582.) leaves oblong, obtuse, pubescent; racemes axillary, compound. ♄. S. Native of the West Indies. Malpíghia canéscens, Ait. hort. kew. 2. p. 105. Flowers probably yellow.

Hoary-leaved Bunchosia. Clt. 1742. Tree 20 feet?

15 B.? sessilifòlia (D. C. prod. 1. p. 582.) leaves oblong-lanceolate, tapering to the base, almost sessile, acuminated at the apex; racemes opposite, simple; style thickish, with an orbicular stigma. ♄. S. Native of Mexico. Petals yellow, with fringed margins. Fruit unknown.

Sessile-leaved Bunchosia. Shrub?

Cult. All the species of this genus are rather ornamental. They will thrive well in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

IV. GALPHI'MIA (an anagram of *Malpíghia*,) Cav. icon. 5. p. 61. D. C. prod. 1. p. 582.

Lin. syst. *Decándria*, *Trigýnia*. Calyx 5-parted, without glands. Petals unguiculate, oval or oblong. Stamens 10, almost free. Styles 3. Fruit (according to Cavanilles) 3-celled? containing 3 nuts; nuts opening on the back, 1-seeded. Flowers yellow. Racemes terminal, as in *Byrsónima*, but differs from it in the calyx being destitute of glands.

1 G. hirsu'ta (Cav. icon. 5. p. 62.) leaves ovate, acute, on short footstalks, hairy on both surfaces. ♄. S. Native of Mexico between Chilpancinga and Rio Azul.

Hairy Galphimia. Shrub 6 feet.

2 G. glau'ca (Cav. icon. 5. p. 61. t. 489.) leaves ovate, obtuse, smooth, glaucous beneath, and with one tooth on each side at the base; petioles without glands. ♄. ◡. S. Native of Mexico.

Glaucous-leaved Galphimia. Clt. 1830. Shrub cl.

3 G. glandulòsa (Cav. icon. 6. p. 43. t. 563.) leaves oval-lanceolate, smooth, each petiole furnished with 2 large glands at the top; petals oblong. ♄. S. Native of the western parts of Mexico on the declivities of mountains. H. B. et Kunth, nov. gen. amer. 5. p. 172. Malpíghia biglandulòsa, Poir. suppl. 4. p. 7. Perhaps several species are confounded below under the head of varieties. Flowers of all yellow.

Var. a, ovalifòlia (Moc. et Sesse, fl. mex. icon. ind. D. C. prod. 1. p. 582.) leaves oval, obtuse. ♄. S. Native of Mexico.

Var. β, oblongifòlia (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 582.) leaves oval-oblong, tapering to both ends. ♄. S. Native of Mexico.

Var. γ, lanceolàta (Cav. l. c.) leaves lanceolate, acuminated at both ends. ♄. S. Native of Mexico.

Glandular Galphimia. Shrub 3 to 4 feet.

† *Doubtful species, the calyxes of which are furnished with glands.*

4 G.? longifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 173.) leaves lanceolate-oblong, acute, angularly-cuneated at the base, smooth, each petiole bearing 1 or 2 glands; racemes terminal, branched. ♄. ◡. S. Native of South America in shady places at the river Cassiquiare. Flowers yellow.

Long-leaved Galphimia. Tree 20 feet.

5 G.? móllis (H. B. et Kunth, nov. gen. amer. 5. p. 173.) leaves oblong, acute at both ends, coriaceous, smooth above, and shining, but clothed with soft hoary pubescence beneath, each petiole bearing 2 glands; umbels axillary? few-flowered. ♄. ◠. S. Native of the temperate parts of Mexico. Flowers yellow.

Soft-leaved Galphimia. Shrub cl.

Cult. The species of *Galphímia* are rather handsome shrubs. They will thrive well in a mixture of loam and peat, and ripened cuttings will strike root in sand under a hand-glass, in heat.

V. CAUCA'NTHUS (the Arabic name of this tree is *kauka*, and *ανθος*, *anthos*, a flower). Forsk. descr. 91. D. C. prod. 1. p. 583.

Lin. syst. *Decándria*, *Trigýnia*. Calyx campanulate, 5-parted, destitute of glands. Petals unguiculate, concave. Stamens 10; filaments awl-shaped. Margins of anthers rather prominent. Styles 3, awl-shaped. Fruit unknown. This genus is perhaps not sufficiently distinct from *Galphímia*.

1 C. Ara'bicus (Lam. dict. 1. p. 658.) ♄. G. Native of Arabia on the mountains at Taæs. Malpíghia Caucánthus, Poir. suppl. 4. p. 6. Galphímia Caúca, Spreng. syst. 2. p. 385. Leaves opposite, orbicular, smooth, usually emarginate. Corymbs of flowers terminal. Flowers white. The fruit is said to be about the size of a pigeon's egg, and perhaps therefore fleshy.

Arabian Caucanthus. Shrub or Tree?

Cult. This plant will probably thrive well in a mixture of loam, peat, and sand; and ripened cuttings will probably strike root in sand under a hand-glass.

Tribe II.

HIPTA'GEÆ (plants agreeing with *Hiptáge* in the shape of the fruit). D. C. prod. 1. p. 583. Style 1 (f. 108. *d.*) or 3, connected into one. Carpel a dry, indehiscent, 1-seeded fruit (f. 108. *e.*), which is usually expanded into wings of various shapes (f. 108. *e.*). Leaves opposite or in whorls.

VI. HI'PTAGE (probably from *ιπταμαι*, *hiptamai*, to fly; in allusion to the shape of the lateral petals, which appear like wings). Gært. intr. p. 126. fruct. 2. p. 169. t. 116.—Gærtnèra, Schreb, gen. no. 735. but not of Lam.—Molìna, Cav. diss. 9. p. 435. but not of Juss.

Lin. syst. *Decándria*, *Monogýnia*. Calyx 5-parted, and furnished with 5 glands at the base on the outside. Petals 5, unequal, fringed (f. 108. *b.*). Stamens 10 (f. 108. *c.*), one of which is much longer than the rest. Carpels 3 (but usually 1 or 2 from abortion), 4-winged (f. 108. *e.*); wings unequal.—Climbing shrubs.

1 H. Madablòta (Gært. fruct. 2. p. 169. t. 116.) leaves ovate-lanceolate, acuminated; racemes terminal. ♄. ◡. S. Native of the East Indies on the Circar mountains. Madablòta, Sonn. voy. ind. 2. p. 135. Molìna racemòsa, Cav. diss. 9. p. 435. t. 263. but not of Juss. Gærtnèra racemòsa, Roxb. cor. 1. p. 19. t. 18. Banistèria Bengalénsis, Lin. syst. p. 247. Banistèria unicapsulàris, Lam. Calophýllum Akàra, Burm. ind. 121. —Rheed. mal. 6. t. 59. This is a large, woody, climbing shrub, flowering in its native country in the wet and cold season. It is cultivated all over the coast of Coromandel on account of the beauty and fragrance of its blossoms, each of which is composed of five petals, one of them yellow, the rest white. *Madablota* is its name in some parts of the East Indies.

FIG. 108.

Madablota Hiptage. Fl. March, April. Clt. 1796. Shrub cl.

2 H. obtusifòlia (D. C. prod. 1. p. 583.) leaves obovate, obtuse, rather mucronated; racemes terminal and axillary. ♄. ◡. S. Native of China. Gærtnèra obtusifòlia, Roxb. hort. beng. p. 32. The flowers are composed of 5 petals, one of which is yellow, the rest white.

Obtuse-leaved Hiptage. Clt. 1810. Shrub cl.

Cult. *Hiptáge* is a genus of beautiful climbing shrubs; they are therefore very desirable for a stove-conservatory, where they can be trained upon the rafters. A mixture of loam and peat will suit them best, and cuttings will strike root in sand under a hand-glass, in heat.

VII. TRISTELLATE'IA (from *tres*, three, and *stella*, a star; disposition of the appendages of the capsule). Pet. Th. gen. mad. p. 14. no. 47.—Zýmum, Nor. Juss. ann. 18. p. 482. D. C. prod. 1. p. 583.

Lin. syst. *Decándria*, *Monogýnia*. Calyx 5-parted. Petals 5, unguiculate. Stamens 10, the 5 alternate ones smallest. Ovary impressed with 3 glandular pores. Carpels 3, crowned by 6 appendages, which are 3-toothed at the apex. Embryo convolute.

1 T. Madagascarie'nsis (Poir. suppl. 5. p. 367.) ♄. ◠. S. Native of Madagascar. This is a twining shrub, with the lower

leaves disposed 4 in a whorl, upper ones opposite, bearing glands at their base, entire. Flowers disposed in racemes, yellow.

Madagascar Tristellateia. Shrub tw.

Cult. This beautiful twining shrub will grow in a mixture of loam and peat, and ripened cuttings will strike root in sand under a hand-glass, in heat.

VIII. THRYA'LLIS (a name given by the Greeks to *Verbáscum*, which comes from θραυω, *thrauo*, to divide. The present plant has nothing to do with the plant of the Greeks unless in having yellow flowers). Lin. gen. 533. D. C. prod. 1. p. 583.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted, permanent. Petals roundish, unguiculate. Stamens 10, awl-shaped, monadelphous at the base. Styles 3, connate at the base. Capsules inclosed within the large calyx, divisible into 3, triangular, 1-seeded nuts; cells opening by the exterior angle.

1 T. Brasilie'nsis (Lin. spec. 554.) branches jointed; leaves ovate, stalked; racemes of flowers terminal, ♄. S. Native of Brazil.—Marcg. bras. p. 79. f. 3. Flowers small, yellow.

Brazilian Thryallis. Shrub 2 feet?

2 T. longifòlia (Mart. fl. bras. 3. p. 78. t. 230.) leaves oblong-lanceolate, acutish, canescent beneath; petioles glandular towards the base; glands oblong. ♄. ◡. S. Native of Brazil in the province of Bahia. Petals yellow.

Long-leaved Thryallis. Shrub cl.

3 T. latifòlia (Mart. fl. bras. 3. p. 79. t. 231.) leaves broad, ovate, obtuse or emarginate, cordate at the base, white from tomentum beneath; petioles biglandular at the top; glands globose ♄. ◡. S. Native of Brazil. Petals yellow.

Broad-leaved Thryallis. Shrub cl.

4 T.? brachysta'chya (Lindl. bot. reg. 1162.) leaves ovate-lanceolate, glaucous-green above, white beneath; racemes short, panicled; petioles biglandular at the apex. ♄. ◡. S. Native of Brazil about Rio Janeiro. Petals yellow, on long claws.

Short-spiked Thryallis. Shrub 4 feet.

Cult. A mixture of loam and peat will suit these plants, and ripened cuttings will root in sand under a hand-glass, in heat.

IX. ASPICA'RPA (from ασπις, *aspis*, a shield, and καρπος, *karpos*, a fruit; form of fruit). Rich. in mem. mus. 2. p. 399. t. 12. D. C. prod. 1. p. 583.—Acósmus, Desv.

Lin. syst. *Monándria, Monogýnia.* Calyx 5-parted, connivent. Petals wanting. Stamen 1, enclosed. Ovary roundish, half-cleft, 2-celled. Style 1, very short, seated in the fissure of the ovary. Fruit dry, indehiscent, 1-celled from abortion, 1-seeded. Seeds orbicular, without albumen. Embryo recurved, with a basilar radicle, pointing to the hilum.

1 A. u'rens (Lag. nov. gen. et spec. 1. no. 5.) ♄. ◠. S. Native of New Spain. Stem somewhat shrubby, twining, filiform. Leaves cordate-oval, beset with stinging, hair-like bristles, which are fixed by their centre, and lie very close. Flowers disposed in axillary bundles, almost sessile, without petals.

Stinging Aspicarpa. Fl. June, July. Clt. 1821. Sh. tw.

Cult. This plant is hardly worth cultivating except in a botanic garden. It will thrive well in a mixture of loam and peat, and cuttings will strike root in sand under a hand-glass, in heat.

X. GAUDICHAU'DIA (in honour of Charles Gaudichaud, who accompanied Freycinet as naturalist in his voyage round the world). H. B. et Kunth, nov. gen. amer. 5. p. 156. t. 445. St. Hil. bull. philom. 1823. p. 132. D. C. prod. 1. p. 584.

Lin. syst. *Monadélphia, Pentándria.* Calyx 5-parted, or 5-cleft, furnished with 10, but usually with 8, glands on the outside. Petals 5, sometimes perigynous, roundish, spreading. Stamens 5, inserted with the petals; filaments flattened and connate at the base, unequal, two of them bearing smaller anthers than the others, or abortive. Style 1. Carpels 3, free, or connected at the very base, 1-seeded, one of them usually abortive. Samaræ 2, each drawn out at the base into a spur-like membrane, and winged on the back. Seeds erect at the top of a pendulous funicle. Albumen wanting. Embryo straight.—Shrubs with opposite entire leaves and yellow flowers.

1 G. cynanchoìdes (H. B. et Kunth, l. c.) stem twining; leaves stalked; racemes crowded with flowers, axillary or terminal. ♄. ◠. S. Native of Mexico near Valladolid.

Cynanchum-like Gaudichaudia. Shrub twining.

2 G. Guarani'tica (St. Hil. bull. philom. 1823. p. 132.) stem twining, shrubby; leaves stalked, ovate-oblong, obtuse, with a short mucrone; petioles with 2 glands at the top of each; umbels axillary, 2-3-flowered. ♄. ◠. S. Native of Brazil.

Guaranitic Gaudichaudia. Shrub tw.

3 G. linearifòlia (St. Hil. l. c.) stem suffruticose, erect; leaves linear, almost sessile, distant; umbels terminal. ♄. S. Native of Brazil.

Linear-leaved Gaudichaudia. Shrub 3 feet.

4 G. seríCea (St. Hil. l. c.) stem suffruticose, erect; leaves on short stalks, silky beneath, intermediate ones ovate-lanceolate; peduncles filiform, 1-flowered, rarely 2-flowered. ♄. S. Native of Brazil.

Silky-leaved Gaudichaudia. Shrub 3 feet.

5 G. a'lbida (Schlecht. et Cham. in Linnæa. 5. p. 217.) stem shrubby, climbing; leaves stalked, ovate, oblong, obtuse, silky-canescent beneath from adpressed pili; petioles glandless; umbels 2-4-flowered, terminal. ♄. ◡. S. Native of Mexico. Banistèria álbida, Schiede, mss. Sterile filaments longer than the fertile ones.

Whitened-leaved Gaudichaudia. Shrub cl.

Cult. Rather handsome flowering shrubs. They will thrive in a mixture of loam, peat, and sand, and ripened cuttings will strike root in sand under a hand-glass, in heat.

XI. CAMA'REA (καμαρα, *camara*, an arch?). St. Hil. bull. philom. 1823. p. 133. D. C. prod. 1. p. 584.

Lin. syst. *Hexándria, Monogýnia.* Calyx 5-parted or 5-cleft, with 2 glands at the base of each lobe, but sometimes naked. Petals 5, somewhat perigynous, rather unequal. Stamens 6, 3 of which are fertile, with the filaments of these almost joined to the top and bearing round anthers, the other 3 are hardly connected at the base, the middle one of these is fertile, the 2 lateral ones are sterile, but bearing petal-like twisted masses instead of anthers. Style 1. Carpels 3, or from abortion only 2, somewhat connate, 1-seeded, indehiscent, crested on the back and with a wrinkled crest on the sides. Seeds pendulous at the extremity of an erect funicle. Albumen wanting. Embryo straight, inverted.—Erect shrubs, all natives of Brazil. Flowers of all yellow.

1 C. hirsu'ta (St. Hil. l. c.) leaves lanceolate or oblong, or ovate-lanceolate, hairy, with silky margins; umbels terminal. ♄. S. Native of Brazil.

Hairy Camarea. Shrub.

2 C. axilla'ris (St. Hil. l. c.) leaves lanceolate, acute, cordate at the base, villous, spreading; flowers solitary, axillary. ♄. S. Native of Brazil.

Axillary-flowered Camarea. Shrub.

3 C. seri'cea (St. Hil. l. c.) leaves long, linear-lanceolate, acute, silky; umbels terminal. ♄. S. Native of Brazil.

Silky-leaved Camarea. Shrub.

4 C. ericoìdes (St. Hil. l. c.) leaves small, linear, narrow, crowded; flowers in umbels. ♄. S. Native of Brazil.

Heath-like Camarea. Shrub.

5 C. linearifòlia (St. Hil. l. c.) leaves linear, rather distant; flowers in umbels. ♄. S. Native of Brazil.

Linear-leaved Camarea. Shrub.

Cult. Shrubs with rather shewy flowers. They will thrive

well in a mixture of loam, sand, and peat, and ripened cuttings will strike root in sand under a hand-glass, in heat.

Tribe III.

BANISTERIE'Æ (plants agreeing with *Banistèria* in many important characters). D. C. prod. 1. p. 584. Styles 3, distinct. Fruit of 2-3 dry, indehiscent, 1-seeded carpels, which are variously expanded into wings.—Leaves opposite, very rarely in whorles.

XII. HIRÆ'A (in honour of John Nicholas de la Hire, a French physician, member of the Academy of Sciences, who discovered an exudation resembling manna on the leaves of orange trees; he died in 1727.) H. B. et Kunth, nov. gen. amer. 5. p. 167. D. C. prod. 1. p. 585.

Lin. syst. *Monadélphia, Decándria.* Calyx of 5 sepals, either bearing glands or without. Petals 5, roundish, unguiculate. Stamens 10, with awl-shaped filaments, which are a little connected at the base, the 5 alternate ones longest. Styles 3. Carpels 3, samaræform, rarely 2, 1-seeded, crested or naked on the back, and surrounded by a membranous wing, usually emarginate, at both extremities.—Climbing shrubs, all probably with panicles of white, yellow or reddish flowers.

§ 1. *Hiræ'a (see genus). Jacq. am.* 137. *D. C. prod.* 1. *p.* 585. *Calyxes destitute of glands.*

* *Carpels roundish.*

1 H. reclina'ta (Jacq. amer. p. 137. t. 176. f. 42. pict. p. 68. t. 260. f. 37.) leaves obovate, blunt at both ends, pubescent above and smooth beneath. ♄ . ◡ . S. Native of South America in the woods of Carthagena in New Spain, where it flowers in June. This small tree divides into many bending and reclining branches, by which it supports itself on the neighbouring trees. Flowers yellow, an inch in diameter.

Reclined-branched Hiræ'a. Fl. July, Aug. Clt.? Tree cl.

2 H. odora'ta (Willd. spec. 2. p. 743.) leaves ovate, acute, smooth above but downy beneath. ♄ . S. Native of Guinea. The fruit of *Flabellària paniculàta*, Cav. diss. 9. p. 436. t. 264. probably belongs to this plant, but the leaves, according to R. Brown, are probably referable to a species of *Pterocárpus*. A reclining shrub with yellow sweet-scented flowers.

Sweet-scented-flowered Hiræa. Clt. 1822. Shrub reclining.

3 H. gla'bra (Spreng. neue. entd. 2. p. 154.) leaves ovate-oblong, smooth on both surfaces, shining; panicle terminal, trichotomous; branchlets and calyxes clothed with pressed hairs. ♄. ◡ . S. Native of Brazil. Flowers yellow?

Smooth-leaved Hiræa. Shrub cl.

4 H. conca'va (Wall. pl. rar. asiat. 1. p. 13.) leaves oblong, tapering, obtuse, rounded at the base, smooth on both surfaces; samaræ nearly orbicular, crested on the back. ♄ . ◡ . S. Native of the East Indies in the province of Martaban.

Concave Hiræa. Shrub cl.

5 H. orbicula'ta (Roxb. hort. beng. app. p. 90.) leaves orbicular, villous beneath as well as the panicles; samaræ orbicular, crested on the back. ♄ . ◡ . S. Native of Chittagong.

Orbicular-leaved Hiræa. Shrub cl.

6 H. hypericoìdes (Burch. cat. no. 2486 and 2531.) leaves linear, smooth on both surfaces. ♄ . G. Native of the Cape of Good Hope. Wings of fruit roundish, half orbicular.

St. John's-wort-like Hiræa. Shrub.

* * *Carpels ovate or oblong.*

7 H. nu'tans (Roxb. hort. beng. p. 34.) leaves ovate, acuminated, smooth above, but clothed with close-pressed hairs beneath, which are fixed by their centre. ♄ . ◠ . S. Native of the East Indies in Bengal. Samaræ 2 or 3, oval-oblong. Flowers white.

Nodding Hiræa. Fl. June, Aug. Clt. 1820. Shrub cl.

8 H. I'ndica (Roxb. hort. beng. p. 90.) leaves ovate, acuminated, shining, smooth; panicles axillary and terminal. ♄ . ◡ . S. Native of the East Indies on the Circar mountains. Triópteris I'ndica, Willd. spec. 2. p. 744. Roxb. cor. 2. p. 31. t. 160. Samaræ 3, oblong. Calyxes pubescent. Flowers white.

Indian Hiræa. Fl. July, Aug. Clt. 1820. Shrub cl.

9 H. rotundifòlia (Roxb. hort. beng. p. 90.) leaves round. ♄ . ◡ . S. Native of the East Indies at Chittagong. Flowers white. The carpels are not known.

Round-leaved Hiræa. Shrub cl.

10 H. hirsu'ta (Wall. pl. rar. asiat. 1. p. 13. t. 13.) leaves obovate, short-acuminated, retusely obcordate at the base, hairy as well as the panicle; samaræ oblong, naked on the back, emarginate at the apex. ♄ . ◡ . S. Native of the Burman empire on mountains about Prome and at the bottom of Mount Taong Dong. Flowers white. This species is easily distinguished by the long and rust-coloured hairs, which cover all its parts, and nowhere, except on the partial peduncles, mixed with those decumbent centrally fixed hairs, so remarkable in the rest of the species.

Hairy Hiræa. Fl. Aug. Shrub cl.

11 H. lanugino'sa (Wall. pl. asiat. rar. 1. p. 13.) leaves ovate-cordate, attenuated, acuminated, smooth above, but clothed with adnate wool beneath; samaræ ovate, retuse, naked on the back. ♄ . ◡ . S. Native of Nipaul.

Woolly Hiræa. Fl. June. Shrub cl.

12 H. corda'ta (Heyne, ex Wall. l. c.) leaves cordate, drawn out at the apex into a broad, elongated acumen, woolly beneath. ♄ . ◡ . S. Native of the peninsula of India? Perhaps only a variety of *H. lanuginòsa* or *H. nùtans.*

Cordate-leaved Hiræa. Shrub cl.

§ 2. *Mascágnia (probably the name of some botanist known to Bertero). Bert. mss. D. C. prod.* 1. *p.* 585. *Calyxes bearing glands on the outside.*

13 H. macrade'na (D. C. prod. 1. p. 585.) leaves ovate, acuminated, smooth above, beneath as well as the branchlets and petioles without glands, but are clothed with close-pressed, silky villi; flowers racemose; pedicels jointed at the base. ♄ . ◡ . S. Native of South America at St. Martha. Mascágnia Americàna, Bert. Wings of fruit orbicular and emarginate at both ends. Calyx furnished with large glands. Flowers yellow.

Large-glanded Hiræa. Shrub cl.

14 H. oblongifòlia (D. C. prod. 1. p. 585.) leaves ovate-oblong, acuminated, smooth, with the nerves and petioles as well as the branchlets clothed with velvety pubescence; flowers panicled; pedicels jointed at the base. ♄ . ◡ . S. Native of St. Martha with the preceding species, to which it is very nearly allied. Mascágnia oblongifòlia, Bert. ined.

Oblong-leaved Hiræa. Shrub cl.

15 H. divarica'ta (H. B. et Kunth, nov. gen. amer. 5. p. 169.) leaves oblong, acuminated, acute at the base, somewhat quintuple-nerved, smooth; petioles bearing 3-7 glands; panicles axillary, composed of from 5-7 racemes, which are twice as long as the leaves; calyx clothed with close-pressed hairs. ♄ . ◡ . S. Native of South America near Cumana. Flowers pale violet.

Divaricate-branched Hiræa. Shrub cl.

16 H. ovatifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 169.) leaves ovate, acuminated, rounded at the base, smooth and shining above; petioles glandless; panicles axillary, about equal in length with the leaves; fruit orbicular. ♄ . ◡ . S. Native of South America in shady woods near Cumana. Flowers probably white.

Ovate-leaved Hiræa. Shrub cl.

† *Species doubtful, the fruit being unknown.*

17 H.? prunifòlia (H. B. et Kunth, l. c.) leaves elliptical,

acute at both ends, smooth, with glandular margins; younger ones clothed with close-pressed hairs; petioles with 2 glands in the middle of each; racemes terminal; calyxes pubescent and bearing 8 glands. ♄. ◡. S. Native of South America in the province of Caraccas near La Victoria. Flowers white.

Plum-leaved Hiræa. Shrub cl.

18 H.? complica'ta (H. B. et Kunth, l. c.) leaves elliptical, acute, rounded at the base, somewhat cordate, complicated, smooth; petioles bearing 2-4 glands; racemes terminal and axillary; calyx silky brown and furnished with 10 glands; petals concave, keeled on the back. ♄. ◡? S. Native on the banks of the river Orinoco near Carichana.

Complicated-leaved Hiræa. Shrub cl.?

19 H.? ni'tida (H. B. et Kunth, l. c.) leaves ovate-elliptical, acutish, rounded at the base, somewhat coriaceous, smooth, shining above; racemes axillary, solitary, and terminal, usually in fives, panicled; calyxes clothed with rusty hairs, and furnished with 8 glands; petals concave, keeled on the back. ♄. ◡. S. Native of South America near St. Barbara at the head of the river Orinoco. Flowers white or reddish.

Shining-leaved Hiræa. Shrub cl.

†† *Mexican species not sufficiently known, but probably belonging to section Mascágnia.*

20 H.? mucrona'ta (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 586.) leaves oval, acutely mucronated at the apex, hardly cordate at the base; petioles longish, without glands; pedicels numerous, axillary, 1-flowered. ♄. ◡. S. Native of Mexico. This plant has the habit of *Banistèria*, fruit of *Hiræ'a*, and calyx of *Triópteris*.

Mucronate-leaved Hiræa. Shrub cl.

21 H.? cyclo'ptera (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 586.) leaves oval-oblong, acuminated at both ends, rather villous; petioles without glands; peduncles villous, axillary, somewhat corymbose. ♄. ◡. S. Native of Mexico. Wings of fruit large, orbicular, as in *Hiræ'a*, but the calyx is biglandular.

Round-winged-fruited Hiræa. Shrub cl.

22 H.? oxy'ota (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 586.) leaves oval-oblong, acute, villous, cordate at the base, with very small, acute auricles; petioles without glands, but are as well as the peduncles villous. ♄. ◡. S. Native of Mexico. Carpels 3, winged, on a pedicel within the calyx. Calyx biglandular.

Sharp-eared-leaved Hiræa. Shrub cl.

23 H. podoca'rpa (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 586.) leaves lanceolate, smooth, on short footstalks; peduncles trifid. ♄. ◡? S. Native of Mexico. Carpels 3, winged, on a pedicel within the calyx. Calyx probably without glands.

Foot-fruited Hiræa. Shrub cl.?

24 H. acumina'ta (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 586.) leaves oval, acuminate-mucronate, villous; petioles without glands; peduncles villous, twice as long as leaves, corymbiferous at the top. ♄. ◡. S. Native of Mexico. Samaræ 2-winged, emarginate at both ends. Calyx biglandular.

Acuminated-leaved Hiræa. Shrub cl.

25 H.? macro'ptera (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 586.) leaves oval, oblong, acuminated at both ends, smooth; petioles bearing 2 glands at the top; racemes axillary. ♄. ◡. S. Native of Mexico. Fruit exactly of *Hiræ'a*, as painted in Cavanilles, diss. 9. t. 264., but the fruit is 3-times larger. Lobes of calyx coarsely biglandular.

Long-winged-fruited Hiræ'a. Shrub cl.

Cult. *Hiræ'a* is a genus of climbing or reclining shrubs, with yellow, white or reddish flowers. They will thrive well in a mixture of loam and peat; and cuttings taken from ripe wood will strike root in sand under a hand-glass, in heat. All the species are extremely difficult to bring into flower in this country.

XIII. TRIO'PTERIS (from τρεις, *treis*, three, and πτερον, *pteron*, a wing; in allusion to the carpels being each furnished with 3 wings). Lin. gen. no. 574. Cav. diss. 9. p. 431. D. C. prod. 1. p. 586.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted, each segment bearing 2 glands on the outside at the base. Petals 5, roundish, unguiculate. Stamens 10, with awl-shaped filaments, which are somewhat connected at the very base, each alternate one larger than the others. Styles 3. Carpels rather connected at the base, 1-seeded, expanded into 3 wings, especially 2 superior and 1 inferior, and sometimes into a small dorsal crest.—Twining shrubs with yellow flowers.

1 T. ri'gida (Swartz, fl. ind. occ. 2. p. 859.) leaves roundish, acuminated, marginated, lined, coriaceous, stiff, very smooth; petioles without glands. ♄. ◠. S. Native of St. Domingo on the mountains among bushes. Branches rather twining. Younger fruit puberulous. Racemes compound, axillary.

Stiff-leaved Triopteris. Shrub tw.

2 T. ova'ta (Cav. diss. 9. p. 431. t. 259.) leaves ovate, bluntish, somewhat cordate, smooth; petioles bearing 2 glands at the top. ♄. ◠. S. Native of St. Domingo. Panicle terminal.

Ovate-leaved Triopteris. Shrub tw.

3 T. lu'cida (H. B. et Kunth, nov. gen. amer. 5. p. 167. t. 451.) leaves roundish-elliptical, acute at both ends, coriaceous, smooth, shining; petioles without glands; panicles axillary, and terminal, simple. ♄. ◠. S. Native of Cuba in shady places. Flowers pale-rose coloured.

Shining-leaved Triopteris. Shrub tw.

4 T. Havane'nsis (H. B. et Kunth, l. c.) leaves oblong, rather mucronate, acute at the base, coriaceous, smooth, shining; petioles without glands. ♄. ◠. S. Native of Cuba near Havannah. Flowers and fruit unknown.

Havannah Triopteris. Shrub tw.

5 T. Jamaice'nsis (Lin. spec. 612.) leaves oblong, acuminated, veiny, smooth, shining; petioles without glands; flowers in 3-parted panicles, rising from the upper axils of the leaves and the tops of the branches. ♄. ◠. S. Native of Jamaica in hedges as well as of Hispaniola. Branches twining.

Jamaica Triopteris. Clt. 1822. Shrub tw.

6 T. Brasilie'nsis (Poir. dict. 8. p. 105.) leaves ovate-lanceolate, acute, coriaceous, smooth, shining; petioles short, without glands. ♄. ◠. S. Native of Brazil.

Brazilian Triopteris. Shrub tw.

7 T. lingula'ta (Poir. dict. 8. p. 104.) leaves linear-lingulate, obtuse, mucronate, smooth on both surfaces, shining above. ♄. ◠. S. Native of St. Domingo. Panicle terminal, with very long divaricating branches.

Tongue-leaved Triopteris. Shrub tw.

8 T. floribu'nda (Bilberg. in flora. 1821. p. 331.) leaves oblong, blunt, smooth. ♄. ◠. S. Native of Brazil. Panicle terminal.

Bundle-flowered Triopteris. Shrub tw.

9 T. serícea (Lodd. cat. Loud. hort. brit. p. 182.) leaves silky. ♄. ◠. S. Native of South America. This plant is hardly known.

Silky-leaved Triopteris. Clt. 1823. Shrub tw.

Cult. *Triópteris* is a genus of beautiful twining shrubs, but are extremely difficult to bring into flower in this country. They will thrive well in a mixture of loam and peat; and cuttings taken from ripened wood will strike root in sand under a hand-glass, in heat.

XIV. VARGA'SIA (probably an alteration from the vernacular name of one of the species in St. Domingo). Bert. ined. Spreng. syst. 2. p. 283. no. 1707.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted, without glands. Petals almost sessile. Styles joined at the base, but revolute at the top. Samaræ winged at the apex. Shrubs with 3 leaves in a whorl.

1 V. gla'bra (Bert. ined. in Spreng. syst. 2. p. 388.) leaves tern, obovate, acute, serrated, very smooth on both surfaces, veiny; racemes spiked, aggregate, reflexed. ♄. ◡. S. Native of St. Domingo. Flowers yellow.

Smooth Vargasia. Shrub cl.

2 V. tomentòsa (Bert. ined. in Spreng. syst. 2. p. 388.) leaves tern, spatulate-oblong, serrulated, clothed with white down beneath; racemes aggregate, erect. ♄. ◡. S. Native of St. Domingo.

Downy Vargasia. Shrub cl.?

Cult. These climbing shrubs will thrive well in a mixture of loam and peat; and ripened cuttings will strike root in sand under a hand-glass, in heat.

XV. TETRA'PTERIS (from τετρα, *tetra*, four, and πτερον, *pteron*, a wing; in allusion to the carpels being each expanded into 4 wings). Cav. diss. 9. p. 433. D. C. prod. 1. p. 587.—Triópteris, Willd. spec. 2. p. 743.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted; each segment furnished with 2 glands at the base. Petals roundish, unguiculate. Stamens 10, with awl-shaped filaments, which are a little joined together at the base, each alternate one longer than the others. Carpels expanded each into 4 oblong wings, 2 superior, 2 inferior; these last are usually smaller. Petioles without glands. Flowers of all yellow.—Shrubs twining or climbing.

1 T. buxifòlia (Cav. diss. 9. p. 434. t. 262. f. 1.) leaves ovate, obtuse, almost sessile, small, very smooth; flowers in umbels, terminal. ♄. ◡. S. Native of St. Domingo. Triópteris buxifòlia, Willd. spec. 2. p. 745. Leaves 8 or 9 lines long and 5 or 6 broad. Wings of fruit purplish.

Box-leaved Tetrapteris. Clt. 1822. Shrub cl.

2 T. Acapulce'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 168.) leaves ovate-elliptical, obtuse, on very short stalks, cordate, coriaceous, shining, smooth; umbels axillary, solitary, 4-flowered. ♄. ◡. S. Native of Mexico near Acapulca on the sea-shore. Flowers unknown, but probably yellow.

Acapulca Tetrapteris. Shrub cl.

3 T. mucrona'ta (Cav. diss. 9. t. 262. f. 2.) leaves ovate, mucronately acuminated, on short footstalks, very smooth; panicles axillary, somewhat umbellate at the tops of the branches. ♄. ◡. S. Native of Cayenne. Triópteris acuminàta, Willd. spec. 2. p. 745. Petioles 3 lines long. Leaves 4 inches long and 2 broad.

Mucronate-leaved Tetrapteris. Shrub cl.

4 T. acutifòlia (Cav. diss. 9. t. 261.) leaves ovate-lanceolate, acuminated, with the middle nerve beneath clothed with close-pressed hairs which are fixed by their centre; panicles terminal. ♄. ◡. S. Native of Cayenne. Triópteris acutifòlia, Willd. spec. 2. p. 744. Cavanilles says that his plant is smooth. It is therefore perhaps distinct, or the hairs are omitted in the description, or they may be deciduous.

Acute-leaved Tetrapteris. Shrub cl.

5 T. Schiedia'na (Schlecht. et Cham. in Linnæa. 5. p. 218.) leaves lanceolate, acuminate, acute, on short petioles, smoothish, middle nerve strigose; umbels usually 4-flowered, panicled at the apex; fruit with equal sides. ♄. ◡. S. Native of Mexico near Jalapa. Flowers orange-coloured. Differs from *T. acutifòlia* in the leaves being one-half smaller.

Schiede's Tetrapteris. Shrub cl.

6 T. citrifòlia (Pers. ench. 1. p. 505.) leaves ovate-oblong, acute, smooth; umbels axillary, stalked; wings of fruit twin, lower ones one-half shorter than the others. ♄. ◡. S. Native of Jamaica in the woods on the mountains. Tetrápteris inæquàlis, Cav. diss. 9. t. 260. Triópteris bifúrca, Gært. fruct. 2. p. 163. t. 116. Triópteris citrifòlia, Swartz, fl. ind. occ. 2. p. 857. Flowers small. Leaves cordate at the base.

Citron-leaved Tetrapteris. Clt. 1818. Shrub cl.

7 T. di'scolor (Meyer. esseq. prim. 182. under *Triópteris,*) leaves oblong, acuminated, smooth on both surfaces, discoloured beneath; umbels panicled, terminal, and axillary. ♄. S. Native of Guiana near the Essequebo in sandy woods. Exterior wings of fruit 3-times larger than the rest.

Discoloured-leaved Tetrapteris. Shrub 6 feet.

8 T.? pauciflòra (Meyer. prim. esseq. p. 183. under *Triópteris,*) leaves oblong-lanceolate, smooth on both surfaces, on very short footstalks; umbels axillary, shorter than the leaves. ♄. ◡. S. Native of Guiana in bushy places near the Essequebo.

Few-flowered Tetrapteris. Shrub cl.

Cult. This is a genus of rather ornamental shrubs, but extremely difficult to bring into flower in this country. They will all thrive in a mixture of sand, loam, and peat; and cuttings, taken from ripened wood, will strike root in sand under a hand-glass, in heat.

XVI. BANISTE'RIA (in honour of John Baptist Banister, a traveller in Virginia in the 17th century, author of a catalogue of Virginian plants, inserted in Ray's Historia Plantarum). H. B. et Kunth, nov. gen. amer. 5. p. 161. D. C. prod. 1. p. 587.—Banistèria with unconnected fruit, Lin. gen. no. 573. Cav. diss. 9. p. 421.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-parted (f. 109. *a.*) furnished with 8 or 10 glands on the outside at the base. Petals roundish, unguiculate (f. 109. *b.*). Stamens 10 (f. 109. *c.*), with awl-shaped filaments, which are a little joined at the base (f. 109. *c.*) Styles 3 (f. 109. *d.*), usually expanded into a leaflet at the apex. Carpels 3, indehiscent (f. 109. *f.*), 1-seeded, somewhat distinct, and are at length separable, each ending in a membranous wing (f. 109. *a.*), thickened on the upper part (f. 109. *d.*) Seed pendulous, 1 in each cell. Cotyledons thick, unequal. Radicle pointing towards the hilum.—Trees or shrubs, usually climbing. Flowers of all yellow.

* *Leaves cordate at the base, lobed, or angularly toothed.*

1 B. palma'ta (Cav. diss. 9. p. 430. t. 257. f. 2.) leaves palmately cleft, downy beneath, with acuminated lobes; petioles biglandular at the top. ♄. ◠. S. Native of St. Domingo and Cayenne. Perhaps only a variety of *B. angulòsa.* Flowers sulphur-coloured.

Palmate-leaved Banisteria. Shrub tw.

2 B. angulòsa (Lin. spec. 611.) leaves cordate, bluntly angular, rather fiddle-shaped, downy or silky-pubescent beneath; petioles biglandular at the apex. ♄. ◠. S. Native of St. Domingo and Cayenne.—Plum. ed. Burm. t. 92. Cav. diss. 9. t. 252. Flowers sulphur-coloured.

Angular-leaved Banisteria. Shrub cl.

3 B. sinua'ta (D. C. prod. 1. p. 588.) leaves cordate, ovate-roundish, very bluntly sinuated, smooth above, and scarcely pubescent beneath; petioles biglandular at the apex. ♄. ◠. S. Native of Guiana. Flowers yellow. Carpels on the inner side have a larger appendage than in *B. angulòsa,* with the lateral wings almost reduced to a crest.

Scolloped-leaved Banisteria. Shrub cl.

4 B. variifòlia (D. C. prod. 1. p. 588.) leaves cordate, clothed with hoary down beneath, some of which are ovate and undivided, others are 3-lobed, and acute at the apex; petioles

biglandular at the top. ♄. ⌒. S. Native of South America at St. Martha. B. diversifòlia, Bert. ined. but not of Kunth. B. vitifòlia, Moc. et Sesse, fl. mex. icon. ined. is probably the same. B. vària, Spreng. syst. 2. p. 386.

Various-leaved Banisteria. Shrub cl.

5 B. sagitta'ta (Cav. diss. 9. t. 257. f. 3.) leaves hastately sagittate, downy beneath, acutely angular; petioles biglandular at the apex; auricles truncate. ♄. ⌒. S. Native of St. Domingo. Flowers yellow.

Arrow-leaved Banisteria. Shrub cl.

* * *Leaves cordate, entire.*

6 B. auricula'ta (Cav. diss. 9. p. 428. t. 255.) leaves profoundly cordate, somewhat sagittate, smooth, with rounded lobes; petioles glandular at the apex; flowers umbellate. ♄. ⌒. S. Native of Brazil near Rio Janeiro. Flowers orange-coloured.

Eared-leaved Banisteria. Clt. 1820. Shrub cl.

7 B. cilia'ta (Cav. diss. 9. t. 254. Lam. dict. 1. p. 369.) leaves cordate, orbicular, smooth, ciliated; petioles biglandular at the apex; flowers umbellate. ♄. ⌒. S. Native of Brazil. Flowers large, orange-coloured. Leaves glaucous.

Ciliated-leaved Banisteria. Clt. 1796. Shrub cl.

8 B. sple'ndens (D. C. prod. 1. p. 588.) leaves cordate, kidney-shaped, orbicular, clothed with silky down beneath; petioles each with 2 glands near the leaf; racemes axillary, dichotomous, umbellate. ♄. ⌒. S. Native of South America, particularly of the West India islands.—Sloan. hist. 2. t. 162. f. 2. B. fúlgens, Lam. dict. 1. p. 368. Cav. diss. 9. p. 426. t. 253. B. heterophýlla, Willd. spec, 2. p. 742. Floral leaves orbicular and nearly sessile. Flowers yellow.

Shining-leaved Banisteria. Clt. 1812. Shrub cl.

9 B. Humboldtia'na (D. C. prod. 1. p. 588.) leaves roundish-ovate, cordate, rather acuminated, mucronate, membranaceous, smoothish above, clothed beneath with soft hoary down as well as the branchlets, with 2 glands at the base of each leaf; umbels lateral and terminal, sessile. ♄. ⌒. S. Native of South America between Carthagena and Cerro de la Popa. B. tiliæfòlia, H. B. et Kunth, nov. gen. amer. 5. p. 162. but not of Vent. Flowers yellow. Carpels 2.

Humboldt's Banisteria. Clt. 1824. Shrub cl.

10 B. dichótoma (Lin. spec. 612.) leaves cordate or somewhat ovate, acuminated, smooth on both surfaces; petioles each bearing 2 glands near the leaf; umbels axillary, longer than the leaves, dichotomous, somewhat divaricating. ♄. ⌒. S. Native of South America.—Plum. ed. Burm. t. 13. B. convolvulifòlia, Cav. diss. 9. p. 428. t. 256. Flowers of a golden-yellow colour.

Dichotomous-racemed Banisteria. Shrub cl.

11 B. Timorie'nsis (D. C. prod. 1. p. 588.) leaves cordate, rarely subovate, acuminated, smooth on both surfaces; petioles biglandular at the apex; racemes axillary, shorter than the leaves, dichotomous, somewhat umbellate. ♄. ⌒. S. Native of the Island of Timor. Very like the preceding species. Flowers golden-yellow.

Timor Banisteria. Shrub cl.

12 B. emargina'ta (Cav. diss. 9. p. 425. t. 249.) leaves elliptical, cordate at the base, mucronated at the apex and emarginate, downy beneath; petioles short, each bearing 2 glands near the leaf; racemes terminal and axillary. ♄. ⌒. S. Native of Guadaloupe. Flowers yellow.

Emarginate-leaved Banisteria. Shrub cl.

* * * *Leaves ovate or oblong.*

13 B. microphy'lla (Jacq. obs. 3. p. 7. t. 56.) leaves elliptical, rounded at both ends, smooth on both surfaces, stiff, on short footstalks; racemes terminal. ♄. ⌒. S. Native of Carolina? Flowers yellow.

Small-leaved Banisteria. Shrub cl.

14 B.? umbelluta'ta (D. C. prod. 1. p. 588.) leaves elliptical, rounded at the base, emarginate at the apex, smooth on both surfaces, stiffish; petioles short, each bearing 2 glands near the leaf; umbels rather corymbose, terminal. ♄. ⌒. S. Native of St. Domingo. This plant is probably the same as the preceding, but differs in the disposition of the flowers, and the fruit is unknown.

Umbellutate-flowered Banisteria. Shrub cl.

15 B.? floribu'nda (D. C. prod. 1. p. 589.) leaves oval, obtuse, coriaceous and emarginate, smooth; petioles pubescent, without glands; racemes corymbose, stalked, length of leaves. ♄. ⌒. S. Native of Porto-Rico. Flowers large, numerous, yellow.

Bundle-flowered Banisteria. Shrub cl.

16 B. seri'cea (Cav. diss. 9. p. 429. t. 258.) leaves ovate, obtuse, with a mucrone, younger ones downy on both surfaces, adult ones only on the under surface; petioles biglandular in the middle; branches 2-edged; flowers racemose. ♄. ⌒. S. Native of Brazil. The down on the leaves is of a golden-shining colour. Flowers yellow.

Silky-leaved Banisteria. Clt. 1810. Shrub cl.

17 B.? tomento'sa (Desf. cat. 160.) leaves ovate, obtuse, with a mucrone, clothed with branched down beneath; petioles each bearing 2 glands near the leaf; corymbs rather panicled. ♄. ⌒. S. Native of the Antilles. Stamens 15, monadelphous at the base, the 5 in front of the petals are larger than the rest, which are nearly abortive. Flowers yellow.

Downy-leaved Banisteria. Clt. 1820. Shrub cl.

18 B. tiliæfòlia (Vent. choix. t. 50.) leaves orbicular, acuminated, downy beneath; petioles elongated, each bearing 2 glands near the leaf; umbels axillary, stalked, compound; petals nearly sessile. ♄. ⌒? S. Native of Java. Flowers purple.

Lime-tree-leaved Banisteria. Shrub cl.?

19 B. Quapa'ra (Aubl. guian. 1. p. 464. t. 186.) leaves ovate, acute, downy beneath, as well as the petioles, but beset with hairs above, which are fixed by their centre, and drawn out at both ends, which are close-pressed to the leaf; umbels axillary, stalked; wings of fruit erect. ♄. ⌒. S. Native of Guiana, on margins of fields, where it is called *Quapara*. Flowers yellow. This is a shrub 6 feet in height, putting out many rambling branches.

Var. β, mucronulàta (D. C. prod. 1. p. 589.) leaves smaller, mucronate. ♄. ⌒. S. Native of South America.

Quapara Banisteria. Fl. Aug. Shrub cl.

20 B. Sinemarie'nsis (Aubl. guian. 1. p. 462. t. 185.) leaves ovate, acuminated, smooth above, but covered with close-pressed bristles beneath, which are fixed by their centre, as well as the petioles, which also bear 2 glands near the leaf; corymbs racemose, axillary, on long stalks. ♄. ⌒. S. Native of Guiana on the margins of meadows, and of St. Domingo. Cav. diss. 9. t. 251. Flowers yellow.

Sinemarian Banisteria. Shrub cl.

21 B.? laurifo'lia (Lin. spec. 611.) leaves ovate-oblong, acute, somewhat coriaceous, smooth; petioles without glands; racemes panicled, terminal, clothed with rusty down; stigmas halved. ♄. ⌒. S. Native of Jamaica and St. Domingo among bushes on the mountains. Ker, bot. reg. 937. Perhaps a species of *Heterópteris*. Flowers yellow.

Laurel-leaved Banisteria. Fl. July, Aug. Clt. 1733. Shrub climbing.

22 B. murica'ta (Cav. diss. 9. p. 423. t. 246. f. 2.) leaves ovate, downy beneath, on short footstalks; racemes panicled,

terminal; carpels armed with a short prickle on the inside of each. ♄. S. Native of Peru. Flowers yellow.

Prickly-carpelled Banisteria. Shrub ?

23 B. LEÒNA (Cav. diss. 9. p. 424. t. 247. exclusive of the fruit and American species,) leaves ovate-oblong, acuminated, coriaceous, netted with veins, smooth, somewhat glaucescent beneath; petioles without glands, short; panicles clothed with rufous down, terminal. ♄. S. Native of Sierra Leone among bushes near the river side. Flowers yellow. Fruit brown when ripe.

FIG. 109.

Sierra *Leone* Banisteria. Fl. Jan. March. Shrub 6 to 8 feet.

24 B. MULTIFLÒRA (D. C. prod. 1. p. 589.) leaves ovate-oblong, acuminated, coriaceous, netted with veins, smooth, shining above, glaucous beneath; petioles without glands, short; panicles terminal, clothed with rufous down, longer than the leaves; young fruit velvety. ♄. S. Native of Cayenne. Very like *B. Leòna*. Flowers yellow.

Many-flowered Banisteria. Shrub 6 feet.

25 B. MUCRONA'TA (D. C. prod. 1. p. 589.) leaves oval, acuminated-mucronate, smooth on both surfaces, membranous; petioles short, each bearing 2 glands at the apex, and are, as well as the nerves of the leaves, clothed with close-pressed down; corymbs axillary, few-flowered. ♄. ◠. S. Native of New Spain. Flowers yellow.

Mucronate-leaved Banisteria. Shrub cl.

26 B. FERRUGÍNEA (Cav. diss. 9. p. 424. t. 248.) leaves ovate, acuminated, smooth above, and shining, rusty beneath, and are, as well as the petioles, clothed with close-pressed hairs; glands situated on the lower part of the limb of the leaf; racemes panicled; fruit pubescent, with erect wings. ♄. ◠. S. Native of Brazil. Leaves 2 inches long. Flowers yellow.

Var. β, *fúlgens* (Meyer. prim. esseq. p. 181.) leaves 5 or 6 inches long. ♄. ◠. S. Native of Guiana in woods. Flowers yellow.

Rusty-leaved Banisteria. Clt. 1820. Shrub cl.

27 B. PERIPLOCÆFÒLIA (Desf. cat. hort. par. ed. 2. p. 160.) leaves ovate or oblong, mucronated, somewhat coriaceous, smooth on both surfaces; petioles each bearing 2 glands at the apex; corymbs terminal; carpels hairy, and crested at the base. ♄. ◠. S. Native of Porto-Rico. Flowers yellow.

Var. α, *subovàta* (D. C. prod. 1. p. 589.) leaves ovate-oblong.

Var. β, *angustifòlia* (D. C. prod. 1. p. 590.) leaves oblong-linear.

Periploca-leaved Banisteria. Fl. June, Aug. Clt. 1818. Shrub cl.

28 B. FU'LGENS (Lin. spec. 612. but not of Cav.) leaves ovate, acuminated, smooth above, and clothed with silky pubescence beneath, as well as the petioles, each of which bear 2 glands at the apex; branches dichotomous; flowers in umbellate corymbs; fruit pubescent; wings furnished on the inside with a smaller wing. ♄. ◠. S. Native of Guadaloupe. Flowers yellow.

Fulgent Banisteria. Clt. 1759. Shrub cl.

29 B.? BRACHIA'TA (D. C. prod. 1. p. 590.) leaves oval, acuminated, smooth on both surfaces; petioles without glands; panicles terminal, furnished with round, opposite bracteas; ovaries pubescent. ♄. S. Native of Porto-Rico. Flowers yellow.

Armed Banisteria. Shrub ?

30 B.? FAGIFÒLIA (D. C. prod. 1. p. 590.) leaves oval-oblong, acuminated, smooth, with the middle nerve clothed beneath with close-pressed villi; petioles biligulate at the apex; corymbs axillary, dichotomous. ♄. S. Native of Cayenne. Flowers yellow.

Beach-leaved Banisteria. Shrub ?

31 B. ELLI'PTICA (H. B. et Kunth, nov. gen. amer. 5. p. 161.) leaves elliptical, rounded at both ends, pointed, membranous, smooth above, but clothed with adpressed hairs beneath, as well as the branches, and bearing 2 sessile glands at the base of each leaf; umbels axillary, few-flowered. ♄. ◠. S. Native of Peru near Loxa. Flowers probably yellow.

Elliptical-leaved Banisteria. Shrub cl.

32 B. LONGIFÒLIA (Swartz, fl. ind. occ. 2. p. 856.) leaves oblong, rounded at the base, acuminated at the apex, stiff, shining, on short footstalks; panicles terminal, with very wide-spreading branches. ♄. S. Native of the Caribbee Islands. Flowers yellow.

Long-leaved Banisteria. Shrub cl.?

33 B. PI'CTA (H. B. et Kunth, nov. gen. amer. 5. p. 160.) leaves oblong, narrowed, and acute at the apex, but rounded at the base, thickish, smooth above, but clothed with adpressed hairs beneath, each bearing 2 pea-like glands at the base; flowers terminal, umbellately-crowded. ♄. ◠. S. Native of New Spain between Carthagena and Panama in humid places. Flowers yellow.

Painted Banisteria. Shrub cl.

34 B. MACROCA'RPA (Pers. ench. 1. p. 507.) leaves oblong, acuminated; spikes of flowers compound; wings of fruit very broad, obliquely rounded. ♄. S. Native of Martinico.

Large-fruited Banisteria. Shrub.

35 B. LEDIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 159.) leaves oblong-linear, rounded at both ends, somewhat mucronate, coriaceous, smooth, shining above; petioles clothed with silky down; peduncles terminal and axillary, many-flowered. ♄. ◠. S. Native of Cuba near Havannah. Flowers yellow.

Ledum-leaved Banisteria. Shrub cl.

36 B. SALICIFÒLIA (D. C. prod. 1. p. 390.) leaves oblong, acute at both ends, clothed with silky down beneath, bearing 2 glands at the top of each petiole; racemes axillary, somewhat compound, length of leaves. ♄. ◠. S. Native of Brazil. Leaves irregularly opposite, therefore somewhat alternate. Flowers yellow.

Willow-leaved Banisteria. Shrub cl.

37 B. DIVERSIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 159.) leaves elliptical-oblong, ovate-lanceolate or lanceolate, somewhat mucronate, rounded at the base, coriaceous, smooth and shining above, puberulous beneath, each with 2 sessile glands at the base; peduncles terminal, twin, many-flowered. ♄. ◠. S. Native of Cuba in dry places near Havannah.

Diverse-leaved Banisteria. Shrub cl.

38 B. PAUCIFLÒRA (H. B. et Kunth, nov. gen. amer. 5. p. 159.) leaves elliptical-oblong, somewhat pointed, mucronate, rounded at the base, coriaceous, puberulous above, and pubescent beneath, each furnished with 2 stipitate glands towards the base; umbels terminal. ♄. S. Native of Cuba near Havannah. Flowers yellow.

Few-flowered Banisteria. Shrub cl. ?

39 B. OVA'TA (Cav. diss. 9. p. 429. t. 257. f. 1.) leaves ovate-lanceolate, acute, pubescent beneath; petioles each bearing 2 glands at the apex; umbels terminal; fruit hemispherical, with very short wings. ♄. S. Native of the Island of Dominique. Vent. choix. in a note, no. 51. t. 51. A. Flowers of a reddish-sulphur colour, with yellow anthers.

Ovate-leaved Banisteria. Fl. June, Aug. Clt. 1810. Shrub cl.

40 B. macrade'na (D. C. prod. 1. p. 590.) leaves oval, bluntly acuminated, coriaceous, smooth on both surfaces; petioles without glands; racemes numerous, disposed in a panicle, and clothed with rufous down; glands of calyx very large. ♄. S. Native of Cayenne or French Guiana. Flowers yellow.

Var. β, Guadalupénsis (D. C. prod. 1. p. 590.) racemes large, elongated; leaves larger, adult fruit also velvety. ♄. S. Native of Guadaloupe. Flowers yellow.

Large-glanded Banisteria. Shrub cl.?

41 B. eglandulòsa (D. C. prod. 1. p. 590.) leaves oval-oblong, acuminated, smooth and shining above; petioles and calyxes without glands; racemes panicled, terminal, rusty-velvety. ♄. ⌒. S. Native of Cayenne or French Guiana. Flowers yellow. Ovary hairy. Styles scarcely dilated at the apex. Fruit unknown.

Glandless Banisteria. Shrub cl.

42 B.? Orinoce'nsis (H. B. et Kunth, nov. gen. amer. 5. p. 162.) leaves oblong, acute, rounded at the base, coriaceous, smooth, as well as the branchlets; racemes about 5, seated on a common, terminal peduncle. ♄. ⌒. S. Native of South America on the banks of the river Orinoco near St. Borga. This plant is probably a species of *Hiræ'a*. Flowers yellow.

Orinoco Banisteria. Shrub cl.

43 B.? brachy'ptera (D. C. prod. 1. p. 591.) leaves oblong-lanceolate, acuminated, smooth; petioles without glands; branchlets compressed; umbels terminal, 4-flowered; carpels 2-3, each terminated by a thick, short wing. ♄. S. Native of Cayenne. This plant will probably constitute a distinct genus. Flowers yellow.

Short-winged-carpelled Banisteria. Shrub.

44 B.? paniculà'ta (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 591.) leaves oblong, acuminated; petioles without glands; peduncles and nerves of leaves clothed with rusty down; panicle terminal, branched from the base; wings of fruit divaricating, somewhat concave, and spreading horizontally. ♄. S. Native of Mexico. Flowers yellow? This plant will probably constitute a distinct genus from the wings of the fruit.

Panicled Banisteria. Shrub.

45 B.? pubiflòra (D. C. prod. 1. p. 591.) leaves oval-oblong, acuminated, coriaceous, smooth; petioles without glands; panicle terminal, much-branched, many-flowered, and are, as well as the calyxes, clothed with brown-velvety down. ♄. S. Native of Porto-Rico and Guadaloupe. Flowers yellow.

Downy-flowered Banisteria. Shrub?

† *Species little known, with whorled leaves; these belong most probably to Vargàsia of Bert.*

46 B.? bre'vipes (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 591.) leaves 3 in a whorl, ovate, mucronate, rather cordate at the base, villous, 8 times longer than the petiole; corymbs axillary, few-flowered. ♄. ⌒. S. Native of Mexico. Fruit unknown. Flowers yellow.

Short-stalked Banisteria. Shrub cl.

47 B.? terna'ta (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 591.) leaves 3 in a whorl, ovate, rather cordate at the base, mucronately-acuminated, smooth, 3 times longer than the petiole; umbels axillary, trichotomous. ♄. ⌒. S. Native of Mexico. Fruit unknown. Flowers yellow.

Ternate-leaved Banisteria. Shrub cl.

N. B. *B. aculeàta* of Mill. which has pinnated leaves and axillary prickles, should be removed from this order, but the plant is hardly known.

Cult. This genus of shrubs bear for the most part rather ornamental flowers and leaves, but they are extremely difficult to bring into flower in this country. They will grow in sandy loam, or a mixture of loam and peat, and cuttings taken from ripened wood will strike root freely in sand under a hand-glass, in heat.

XVII. HETERO'PTERIS (from ἕτερος, *heteros*, various, and πτερον, *pteron*, a wing; wings of carpels various in size and shape). H. B. et Kunth, nov. gen. amer. 5. p. 163. D. C. prod. 1. p. 591.—Banistèrias, with inverted seeds, Cav.

Lin. syst. *Monadélphia, Decándria.* The character of this genus is the same as that of *Banistèria*, but the styles are less dilated at the apex, and the wings of the carpels are thickened on the lower side (as in *A'cer*,), not on the upper side.

1 H. purpu'rea (H. B. et Kunth, l. c.) leaves roundish-ovate, obtuse, somewhat emarginate, smooth, as well as the branches; petioles biglandular; racemes axillary and terminal, few-flowered; calyxes clothed with adpressed hairs. ♄. ⌒. S. Native of St. Domingo, Porto-Rico, and near Cumana. Banistèria purpùrea, Lin. spec. 611. Cav. diss. t. 246. f. 1.—Plum. ed. burm. t. 15. Flowers purple.

Purple-flowered Heteropteris. Clt. 1759. Shrub cl.

2 H.? parvifòlia (D. C. prod. 1. p. 591.) leaves roundish, stiff, pubescent; petioles without glands; corymbs few-flowered, terminal; fruit pubescent. ♄. ⌒. S. Native of the Island of St. Thomas. Flowers purple. Very like *H. purpùrea* in habit. Banistèria parvifòlia, Vent. choix. t. 51.

Small-leaved Heteropteris. Clt. 1820. Shrub cl.

3 H. brachia'ta (H. B. et Kunth, l. c.) leaves obovate, obtuse; branches armed; flowering branches panicled. ♄. ⌒. S. Native of South America. Banistèria brachiàta, Lin. spec. 612. Lin. hort. cliff. 169? Flowers golden, but at length fade to scarlet.

Armed-panicled Heteropteris. Clt. 1759. Shrub cl.

4 H. chrysophy'lla (H. B. et Kunth, l. c.) leaves ovate, oblong, acutish, somewhat sinuated towards the top, clothed beneath with golden, shining down; petioles very short, each bearing 2 glands at the apex; flowers axillary, corymbose. ♄. ⌒. S. Native of Brazil and of the Caraccas. Banistèria chrysophýlla, Lam. dict. 1. p. 368. Cav. diss. 9. t. 245. Jacq. schœnb. t. 105. Galphìmia chrysophýlla, Spreng. Flowers deep-orange.

Golden-leaved Heteropteris. Clt. 1793. Shrub cl.

5 H. arge'ntea (H. B. et Kunth, l. c.) leaves elliptical-oblong, acuminated, acute at the base, membranous, pubescent above, silvery beneath, as well as the calyxes; petioles without glands; panicles axillary and terminal; flowers in crowded fascicles. ♄. ⌒. S. Native of New Granada. Banistèria argéntea, Spreng. syst. 2. p. 388. Flowers rose-colour.

Silvery-leaved Heteropteris. Shrub cl.

6 H. cæru'lea (H. B. et Kunth, l. c.) leaves ovate, acute, coriaceous, glaucous, on short stalks; branches tubercled; racemes axillary; fruit rather velvety at the base. ♄. ⌒. S. Native of Jamaica, Cuba, and St. Domingo. Banistèria cærùlea, Lam. dict. 1. p. 367. Cav. diss. 9. p. 421. t. 243.—Plum. ed. Burm. t. 14. Flowers bluish.

Blue-flowered Heteropteris. Clt. 1823. Shrub cl.

7 H. ni'tida (H. B. et Kunth, l. c.) leaves ovate-oblong, acuminated, shining above, silvery beneath; petioles without glands; panicle terminal, leafy. ♄. S. Native of Brazil. Banistèria nítida, Lam. dict. 1. p. 369. Cav. diss. 9. t. 244. Flowers yellow.

Var. β, rúfa (Lindl. bot. reg. t. 950.) leaves rufous beneath. Native of Brazil.

Shining-leaved Heteropteris. Fl. July, Aug. Clt. 1809. Shrub 6 to 10 feet.

8 H.? cornifòlia (H. B. et Kunth, l. c.) leaves elliptical, acute at both ends, smooth and shining above, but clothed with

adpressed hairs beneath, and rather glaucous; petioles without glands; panicles axillary and terminal; flowers in racemose corymbs; calyxes silky. ♄. S. Native of New Granada near Ibague. Banistèria cornifòlia, Spreng. syst. 2. p. 388. Flowers rose-coloured.

Dogwood-leaved Heteropteris. Shrub.

9 H. platy'ptera (D. C. prod. 1. p. 592.) leaves ovate-oblong, blunt at both ends, coriaceous, smooth; petioles very short, without glands; panicles terminal; wings of fruit broad. ♄. S. Native of Guadaloupe. Leaves 7-8 inches long, and about 3 in breadth. Flowers yellow.

Broad-winged-fruited Heteropteris. Shrub.

10 H. appendicula'ta (D. C. prod. 1. p. 592.) leaves oval, lengthened into a blunt acumen, somewhat coriaceous, smooth above, and pale beneath, with the nerves clothed with adpressed hairs; petioles very short, without glands; corymbs axillary; carpels each with a wing-like appendage on the inside at the base. ♄. ◠? S. Native of the Island of St. Vincent, where it is probably cultivated. Banistèria appendiculàta, Lamb. herb. Flowers yellow?

Appendiculate-carpelled Heteropteris. Clt. 1820. Shrub cl.?

11 H.? floribu'nda (H. B. et Kunth, nov. gen. amer. 5. p. 166.) leaves oblong, acute at both ends, somewhat coriaceous, smooth; branches and petioles clothed with rusty down, as well as the axillary and terminal panicles; petioles without glands. ♄. S. Native of Mexico on the mountains. Very like *H. cærùlea*, but the fruit is unknown. Flowers bluish?

Bundle-flowered Heteropteris. Clt. 1824. Shrub.

12 H.? longifo'lia (H. B. et Kunth, l. c.) leaves oblong, acute at both ends, rather coriaceous, smooth; petioles without glands; panicles axillary, and are, as well as the calyxes, clothed with rusty down, glandular; flowers racemose. ♄. S. Native near the city of Mexico. Flowers yellow?

Long-leaved Heteropteris. Shrub.

Cult. These shrubs will thrive well in sandy loam, or a mixture of loam, peat, and sand; and cuttings taken from ripened wood will root in sand under a hand-glass, in heat.

XVIII. ANOMALO'PTERIS (from *ανομος, anomos*, singular, and *πτερον, pteron*, a wing; fruit with unequal wings.)

Lin. syst. *Decándria, Digýnia.* Calyx 5-parted. Petals 5, unguiculate, with roundish, fringed limbs, upper one largest. Stamens 10. Anthers sagittate, obtuse. Styles 2, filiform. Samaræ 2, 1-seeded, each ending in a wing at the apex, thickened on the outer side.—Shrubs with alternate leaves, by which it differs from all the rest of the genera in this order, and yellow flowers.

1 A. spica'ta; leaves oval-oblong, acuminated, smooth, entire; racemes simple, spike-formed, terminal. ♄. S. Native of Sierra Leone. Heterópteris Smeathmánni, D. C. prod. 1. p. 592. (v. s. herb. Lamb.)

Spiked-flowered Anomalopteris. Shrub 8 feet.

2 A. obova'ta; leaves obovate, entire, rounded at the top, veiny, smooth; petioles covered with rusty down, as well as the racemes, which are simple and lateral. ♄. S. Native of Sierra Leone. (v. s. herb. Lamb.)

Obovate-leaved Anomalopteris. Shrub 6 to 8 feet.

3 A. longifòlia; leaves oblong-lanceolate, entire, with repand margins; flowers in terminal spicate racemes. ♄. S. Native of Guinea. Flowers pale-yellow.

Long-leaved Anomalopteris. Shrub 8 feet.

Cult. See *Heterópteris* for cultivation and propagation.

† *A genus allied to Malpighiàceæ.*

XIX. NIO'TA (*Karin njotti* is the name of one of the *N. pentapétala* in Malabar). Lam. ill. t. 299. D. C. prod. 1. p. 592.—Samadèra, Gært. fruct. 2. p. 352. t. 156.—Biporièia, Pet. Th. gen. mad. p. 14.

Lin. syst. *Octo-Decándria, Monogýnia.* Calyx 4-5-parted, permanent, with the 2 outer lobes glandular. Petals 4-5, obtuse, much longer than the calyx. Stamens 8-10, free, hypogynous, furnished with a scale at the base. Ovary turbinate, 4 or 5-lobed at the apex. Style 1, filiform, rising from between the lobes. Capsules 4-5, or from abortion only 1-3, compressed, 1-celled, 1-seeded.—Shrubs, with alternate leaves. Perhaps this genus is allied to *Banistèria* or *Balanópteris*. But according to Jussieu the fruit is referable to *Ochnàceæ* or *Simarubàceæ*.

1 N. tetrape'tala (Lam. ill. t. 299.) flowers 4-petalled, octandrous. ♄. S. Native of Madagascar. Mauduìta penduliflòra, Comm. ined. Vittmánnia ellíptica, Vahl. symb. 3. p. 51. t. 62. Leaves oval, rather coriaceous, veiny. Lateral peduncles nodding, bearing 5-7 1-flowered pedicels at the top. Flowers with the petals yellow, red, and white mixed.

Four-petalled Niota. Clt. 1820. Tree 30 feet.

2 N. pentape'tala (Poir. dict. 4. p. 490.) flowers of 5 petals, pentandrous. ♄. S. Native of Malabar.—Karin njòtti, Rheed. mal. 6, t. 18. Peduncles long, pendulous, nodding, umbellately many-flowered. Perhaps only a variety of the preceding. Flowers variegated. Fruit intensely bitter.

Five-petalled Niota. Tree 36 feet.

Cult. These trees will thrive well in a mixture of loam and peat, and cuttings taken from ripened wood will root in sand under a hand-glass, in heat.

Order XLVI. ACERI'NEÆ. D. C. Theor. ed. 2. p. 477.—A'cera, Juss. gen. 50. ann. mus. 18. p. 477. exclusive of sections 1 and 3. D. C. prod. 1. p. 593.—A'cer, Tourn. inst. 386. Lin. gen. no. 1115. Gært. fruct. 2. p. 166. t. 116.

Calyx 5, rarely 4-9-parted. Petals about the same number, inserted round the hypogynous disk, alternating with the calycine lobes, usually self-coloured, rarely wanting. Stamens inserted in the hypogynous disk, usually 8 in number, rarely 5-12; anthers oblong. Ovary twin. Style 1. Stigmas 2. Fruit constantly of 2 carpels (rarely 3), which are at length separable, indehiscent, samara-like, 1-celled, 1-2-seeded, compressed, ending at top in a membranous, diverging wing, which is thickened on the outer side. Seeds oblong, fixed to the base of the cell. Seed-cover rather fleshy. Albumen wanting. Embryo curved or convolute, with leafy, irregularly-wrinkled cotyledons and a roundish radicle, which is directed to the base of the cell.—Valuable timber-trees, with opposite, usually simple leaves, as in *Malpighiàceæ*, rarely compound, as in *Hippocastàneæ* and *Sapindàceæ*. Flowers inconspicuous, racemose or corymbose, axillary, usually dioecious or polygamous from abortion, and sometimes without petals. All the species abound in saccharine sap, from which sugar may be prepared. This order is truly intermediate between the two preceding and the two following, but is easily distinguished from them in the flowers being monoecious, dioecious or polygamous, never hermaphrodite.

Synopsis of the Genera.

1 A'cer. Flowers polygamous. Calyx 5-lobed. Stamens 7-9, rarely 5. Leaves simple, usually lobed.

2 Negu'ndo. Flowers dioecious. Calyx unequally 4-5-toothed. Anthers 4-5, linear, sessile. Leaves pinnate.

3 DOBI'NEA. Flowers monoecious. Calyx campanulate, 4-toothed. Stamens 8, connate into a column around the sterile style. Leaves simple.

I. A'CER (*acer*, in Latin, signifies hard or sharp, which comes from *ac*, a point, in Celtic. The name is applied to this genus because the wood is extremely hard, and was formerly much sought after for the purpose of making pikes and lances, &c.). Mœnch. meth. 334. and Nutt. gen. amer. 1. p. 253. —A'cer, spec. Lin. gen. no. 1115. D. C. prod. 1. p. 593.

LIN. SYST. *Polygàmia, Monoècia.* Flowers polygamous. Calyx 5-lobed, sometimes 5-parted. Stamens rarely 5, but usually 7-9. Leaves simple, usually lobed. Flowers of all greenish or greenish-yellow.

§ 1. *Flowers racemose.*

* *Leaves simple.*

1 A. OBLÓNGUM (Wall. in litt. D. C. prod. 1. p. 593.) leaves oblong-lanceolate, acuminated, quite entire, coriaceous, smooth, rounded at the base; racemes compound; wings of fruit parallel, smooth, separated. ♄. H. Native of Nipaul at Narainhetty. Leaves rather glaucous on the under surface. Young fruit hairy on the disk, with smooth short wings. A. laurifòlium, D. Don, prod. fl. nep. p. 249. A. Buzimpàla, Hamilt. mss. Flowers pale-yellow. This tree is called in Nipaul *Moogila* and *Buzimpala*.

Oblong-leaved Maple. Fl. Feb. Clt. 1824. Tree 20 feet.

2 A. LÆVIGA'TUM (Wall. pl. rar. asiat. 2. p. 3. t. 104.) leaves oblong, acuminated, serrulated, shining, smooth; corymbs terminal; petals cuneated; wings of fruit diverging, cultriform. ♄. H. Native of Nipaul on high mountains. Flowers white.

Smoothed-leaved Maple. Tree 40 feet.

3 A. TATA'RICUM (Lin. spec. 1495.) leaves cordate, undivided, serrated, with obsolete lobes; racemes compound, crowded, erect; wings of fruit parallel, young ones puberulous. ♄. H. Native of Tartary.—Pall. fl. ross. t. 3. Tratt. arch. 1. no. 1. with a figure. Wats. dend. brit. 160. Corolla white.

Tartarian Maple. Fl. May, June. Clt. 1759. Tr. 20 ft.

** *Leaves 3-lobed or trifid, very rarely 5-lobed.*

4 A. STRIA'TUM (Lam. dict. 2. p. 381.) leaves cordate, 3-lobed, acuminated, finely and acutely serrated; racemes simple, pendulous; petals oval; fruit smooth, with the wings rather diverging. ♄. H. Native of North America from Canada to Carolina. Mich. fil. arb. 2. t. 17. A. Pennsylvánicum, Lin. spec. 1496. Tratt. arch. 1. no. 11. with a figure. A. Canadénse, Duh. arb. 1. t. 12. Mill. t. 7. Trunk elegantly striped with white lines. Flowers greenish-yellow. There is a variety of this tree with undivided leaves, but it is extremely rare.

Striped-barked Maple. Fl. May. Ju. Clt. 1755. Tr. 20 ft.

5 A. SPICA'TUM (Lam. dict. 2. p. 381.) leaves cordate, 3 or slightly 5-lobed, acuminated, pubescent beneath, unequally and coarsely serrated; racemes compound, erect; petals linear; fruit smooth, with the wings rather diverging. ♄. H. Native of Canada and the Alleghany mountains. A. montànum, Ait. hort. kew. 3. p. 435. Tratt. arch. 1. no. 13. with a figure. A. Pennsylvánicum, Duroi. harbk. t. 2. A. parviflòrum, Ehrh. Flowers very small, greenish-yellow.

Spiked-flowered Maple. Fl. April, May. Clt. 1750. Tree 25 feet.

6 A. HY'BRIDUM (Bosc. dict. agr. 5. p. 251.) leaves rather cordate, somewhat coriaceous, smooth, profoundly trifid, with the lobes unequally and coarsely toothed; racemes pendulous; fruit smooth with diverging wings. ♄. H. Native of? Flowers greenish-yellow.

Hybrid Maple. Fl. May, June. Clt.? Tree 20 feet.

*** *Leaves 5-lobed.*

7 A. PSEU'DO-PLA'TANUS (Lin. spec. 1469.) leaves cordate, smooth, with 5 acuminated, unequally-toothed lobes; racemes pendulous, rather compound, with the rachis as well as the filaments of stamens hairy; fruit smooth, with the wings rather diverging. ♄. H. Native of Europe, particularly in Switzerland, Germany, Austria, and Italy in wooded mountainous situations. Duh. arb. 1. t. 36. Tratt. arch. 1. no. 2. with a figure. Schm. arb. 1. p. 3. 4. Flowers yellowish-green. A large tree, usually clear of branches to a considerable height. It was formerly much planted for walks and avenues, but has given way to better and more sightly trees. However this tree with some other species are peculiarly proper for making plantations near the sea, or to shelter other trees in that situation, for they resist the spray better than most trees. It grows sometimes to 13 or 14 feet in girth. Before earthenware came into use at the table, the wood of the *Sycamore*, which is soft and white, was in much request for trenchers. It is still used by turners for bowls, dishes, &c., by saddlers for saddle-trees, and is recommended as excellent for cart and plough-timber, being light and tough. It is, however, inferior to the ash for these purposes. It is a quick growing tree. In spring and autumn this tree will pour forth, from the wounded stem, in the same manner as the birch, abundance of saccharine juice, from which sugar and good wine may be made, as Ray affirms from the information of Dr. Martin Lister. The tree in England is vulgarly called *Sycamore-tree* and by some *Mock-plane*. In Scotland it is known by the appellation of *Plane-tree*.

Var. β, *variegàta*; leaves variegated.

Var. γ, *subobtùsum* (D. C. prod. 1. p. 594.) lobes of leaves blunter; fruit and wings larger. A. opulifòlium. Thuil. fl. par. 538. A. vitifòlium, Opiz.

Var. ε, *laciniàtum* (Loud. hort. brit. p. 412.) lobes of leaves jagged. Schm. arb. 1. 5.

Mock-plane-tree, Sycamore, or Great Maple. Fl. May, June. Clt. 1683. Tree 30 to 60 feet.

8 A. VILLÒSUM (Wall. pl. rar. asiat. 2. p. 4.) leaves cordate, 5-lobed, villous beneath as well as the petioles; lobes ovate, acute; racemes lateral; buds and young leaves silky-villous; petals bearded at the apex; fruit villous, with straightish cultriform, crenulated wings. ♄. H. Native of the high Alps near to perpetual snow in Sirmore and Kamaoon. Flowers fragrant.

Villous Maple. Tree 50 feet.

9 A. CAUDA'TUM (Wall. pl. rar. asiat. 2. p. 4.) leaves cordate, 5-lobed, pubescent beneath, and villous in the axils of the veins and nerves, but when aged smooth; lobes ovate, acuminated, doubly serrated; serratures awned; racemes smooth; wings of fruit diverging. ♄. H. Native of Nipaul towards Gosaingsthan. A. pectinàtum, Wall. mss.

Tailed-lobed-leaved Maple. Tree 50 feet.

10 A. MACROPHY'LLUM (Pursh. fl. amer. sept. 1. p. 267.) leaves digitately 5-lobed, with roundish recesses; lobes somewhat 3-lobed, repandly-toothed, pubescent beneath; racemes compound, erect; stamens 9, with hairy filaments; ovaries very hairy. ♄. H. Native of North America on the great rapids of the Columbia river, and of northern California. Flowers greenish-yellow.

Long or *Large-leaved* Maple. Fl. May, June? Clt. 1812. Tree 60 feet.

11 A. STERCÚLIA'CEUM (Wall. pl. rar. asiat. 2. p. 3. t. 105.) leaves cordate, puberulous beneath, 5-lobed; lobes ovate, acuminated, serrated, outer ones very short, and quite entire; racemes lateral; petals smooth. ♄. H. Native of Nipaul on Mount Shiapore. Flowers white. Tree 3 feet in diameter.

Sterculia-like Maple. Tree 50 feet.

12 A. CAMPE'STRE (Lin. spec. 1497.) leaves cordate, with 5 toothed lobes; racemes erect; wings of fruit much divaricated. ♄. H. Native of Europe in hedges and coppices; plentiful in Britain and Tauria. Smith, engl. bot. t. 304. The leaves are small. The flowers are greenish. We meet with high encomiums on the wood of this tree among the ancients; and Virgil introduces Evander sitting on a maple throne. It was chiefly valued among them for the firmness of its grain. The timber is far superior to that of the Beech for all the uses of the turner; particularly for dishes, trenchers, and bowls, and when it abounds in knots, as it very frequently does, it is highly esteemed by the joiners for inlaying, &c. On account also of the lightness of the wood, it is often used by musical instrument makers; from its hardness for gun-stocks; formerly in great request for tables; but the principal value of the tree is for underwood, it is of quick growth and affords good fuel.

Var. α, hebecárpum (D. C. prod. 1. p. 594.) fruit clothed with velvety pubescence. A. campéstre, Wallr. in litt. Tratt. arch. 1. no. 7. with a figure. A. mólle, Opiz.

Var. β, collìnum (Wallr. in litt. D. C. prod. 1. p. 594.) fruit smooth; lobes of leaves obtuse; flowers smaller. ♄. H. Native of France. A. affíne and A. macrocárpum, Opiz.

Var. γ, Austrìacum (Tratt. arch. 1. no. 6. with a figure) fruit smooth; lobes of leaves somewhat acuminated; flowers larger. ♄. H. Native of Austria, Podolia, and Tauria.

Common or *Field* Maple. Fl. May, July. Brit. Tr. 20 ft.

§ 2. *Flowers corymbose or in fascicles.*

* *Leaves 3-lobed.*

13 A. OBTUSIFÒLIUM (Sibth. et Smith, fl. græc. t. 361.) leaves rounded, bluntly 3-lobed, crenately toothletted, about the length of the petioles; fruit smooth, with the wings parallel and connivent. ♄. H. Native of Crete on the Sphaciotic mountains. A. Crética, Tourn. cor. 43. Flowers greenish-yellow, drooping.

Obtuse-leaved Maple. Fl. May, June. Clt.? Tree 15 ft.

14 A. CRE'TICUM (Lin. spec. 1497.) leaves permanent, cuneated at the base, acutely 3-lobed at the top; lobes entire or toothletted, lateral ones shortest; corymbs few-flowered, erect; fruit smooth, with the wings hardly diverging. ♄. H. Native of Candia on the mountains, as well as in the islands of the Grecian Archipelago. Tratt. arch. 1. no. 19. with a figure. Duh. arb. 1. p. 28. t. 10. f. 9.—Alp. exot. 9. t. 8.—Pocock. orient. 197. t. 85. An evergreen shrub, with small, dark-green leaves shaped like those of the ivy. Flowers greenish-yellow.

Cretan Maple. Fl. May, June. Clt. 1752. Shrub 4 feet.

15 A. MONSPESSULA'NUM (Lin. spec. 1497.) leaves cordate, 3-lobed; lobes almost quite entire, equal; corymbs few-flowered, erect; fruit smooth, with the wings hardly diverging. ♄. H. Native of south and middle Europe in exposed stony places, particularly in France and Italy. Tratt. arch. 1. no. 20. with a figure. A. trifòlium, Duh. arb. 1. t. 10. f. 8.—Pluk. alm. t. 251. f. 3. The leaves much resemble those of the common *maple*, but differ in being 3-lobed, and they are retained on the tree much longer in the autumn. Flowers greenish-yellow. It is sometimes seen only in the shape of a shrub about 10 feet high, sometimes a tree of 20 feet high, but at last attains a great height.

Montpelier Maple. Fl. May. Clt. 1739. Tree 20 feet.

16 A. IBE'RICUM (Bieb. fl. taur. 2. p. 447.) leaves shining, glaucous beneath, bluntly 3-lobed; lobes furnished with 1 or 2 teeth, lateral ones marked with the middle nerve to the insertion of the petiole; petioles a little shorter than the leaves. ♄. H. Native of Iberia. Flowers greenish-yellow.

Iberian Maple. Tree 20 feet.

17 A. HETEROPHY'LLUM (Willd. arb. 10. t. 1, f. 1.) leaves evergreen, ovate, entire, and 3-lobed, obsoletely serrated, smooth. ♄. H. Native of the Levant. A. sempervírens, Lin. mant. 128. Leaves small, dark-green. Flowers greenish-yellow.

Variable-leaved Maple. Fl. May, June. Clt. 1759. Sh. 4 ft.

18 A. BARBA'TUM (Mich. fl. bor. amer. 2. p. 252.) leaves ovate, somewhat cordate, with 3 short, unequal, serrated lobes, glaucous beneath; corymbs sessile, those of the female flowers with simple pedicels, those of the male flowers with branched pedicels; calyxes bearded on the inside; fruit smooth, with the wings hardly diverging. ♄. H. Native of North America from New York to Carolina in humid pine-barrens. A. Caroliniànum, Walt. fl. car. 251. Flowers greenish-yellow.

Bearded-calyxed Maple. Tree 20 feet.

19 A. PARVIFÒLIUM (Tauch. in flora. 1829. p. 545.) leaves somewhat 5-lobed and 3-lobed, obtusely toothed, same colour on both sides; corymbs many-flowered, nodding; wings of fruit erectly diverging. ♄. S. Native of the south of Europe. A. Créticum, Hort. vind. Usually confounded with *A. Monspessulànum*.

Small-leaved Maple. Tree 20 feet.

** *Leaves 5, rarely 7, lobed.*

20 A. O'PALUS (Ait. hort. kew. 3. p. 436.) leaves cordate, roundish, 5-lobed; lobes obtuse, bluntly and coarsely toothed; corymbs stalked, erect; ovaries hairy; fruit smooth, with the wings rather diverging. ♄. H. Native of Italy; plentiful about Rome. A. I'talum, Lauth. ac. no. 8. A. rotundifòlium, Lam. dict. 3. p. 382. A. villòsum, Presl. A beautiful tree with large leaves, deserving the attention of ornamental planters. Flowers yellowish.

Opulus or Italian Maple. Fl. May, June. Clt. 1752. Tree 20 to 50 feet.

21 A. OPULIFÒLIUM (Vill. dauph. 4. p. 802.) leaves cordate, roundish, 5-lobed; lobes obtuse, bluntly and coarsely toothed; corymbs almost sessile; ovaries and fruit smooth, with the wings rather diverging. ♄. H. Native of Valais, Dauphiny, Piedmont, and Catalonia in stony places. Tratt. arch. 1. no. 13. with a figure. A. Hispánicum, Pourr. act. toul. 3. p. 305. A. vérnum, Reyn. A. montànum, C. Bauh. pin. 431. Flowers greenish-yellow.

Guelder-rose-leaved Maple. Fl. May, Ju. Clt. 1823. Sh. 8 ft.

22 A. OBTUSA'TUM (Kit. in Willd. spec. 4. p. 984.) leaves cordate, roundish, 5-lobed; lobes bluntish, repandly-toothed, velvety beneath; corymbs pendulous; pedicels hairy; fruit rather hairy, with the wings somewhat diverging. ♄. H. Native of Hungary and Croatia. Tratt. arch. 1. no. 14. with a figure. Flowers greenish-yellow.

Var. β, Neapolitànum (Ten. att. act. neap. 1819. p. 121. with a figure). ♄. H. Native about Naples.

Blunt-lobed-leaved Maple. Fl. May, Ju. Clt. 1825. Sh. 10 ft.

23 A. CORIA'CEUM (Bosc. ex Tauch. in bot. zeit. flora. p. 545.) leaves coriaceous, the same length as breadth, 3-5-lobed, denticulated, smooth; corymbs loose; wings of fruit erectly diverging. ♄. H. Native of?

Coriaceous-leaved Maple. Tree 20 feet.

24 A. PLATANOÌDES (Lin. spec. 1496.) leaves cordate, smooth, 5-lobed; lobes acuminated, with a few coarse acute teeth; corymbs stalked, erectish, and are as well as the fruit smooth, with divaricated wings. ♄. H. Native of Europe in woods, particularly inGermany, Switzerland, Carniolia, Styria, and Savoy. Duh. arb. 1. t. 10. f. 1. Tratt. arch. 1. t. 4. Mill. ill. t. 8. f. 1. Trew. sel. t. 81. A. Lobèlii, Tenore. The scales of the leaf-bud are spreading and reflexed. This tree grows to a large size. The leaves are of a shining green, and are even larger than those of the *Sycamore*, they are seldom eaten or defaced by insects, because the tree abounds in a sharp milky juice dis-

liked by them, and when the flowers are out, which are of a yellow colour, this tree has great beauty. The leaves die to a golden-yellow colour in autumn, which produces a good effect at that season.—Linnæus recommends it for walks and plantations, as yielding a juice from which sugar may be made, if it be wounded in the winter, and as cutting out into a fine white wood, fit for the stocks of guns, the joiner, and the turner, and answers all the purposes of the *Sycamore*. The raising of this tree for use and ornament should not be neglected.

Var. β, variegàtum ; leaves variegated.

Var. γ, laciniàtum (Ait. hort. kew. 3. p. 435.) lobes of leaves deeply jagged, with acuminated, bristle-like teeth. A. críspum, Lauth. acer. no. 4. A. palmàtum, hort. Tratt. arch. 1. no. 5. with a figure. The bark of this tree is grey, with large white spots.

Platanus-like or Norway Maple. Fl. May, June. Clt. 1683. Tree 50 feet.

25 A. gla'brum (Torrey. in ann. lyc. nat. hist. new york, vol. 2. p. 163.) leaves roundish, 5-7-lobed, acutely toothed, smooth on both surfaces ; corymbs stalked ; fruit smooth ; wings diverging, broad-ovate. ♄. S. Native of North America on the Rocky Mountains.

Smooth Maple. Tree.

26 A. saccharìnum (Lin. spec. 1496.) leaves cordate, smooth, glaucous beneath, palmately 5-lobed ; lobes acuminated, sinuately toothed ; corymbs drooping, on short peduncles ; pedicels pilose ; fruit smooth, with the wings diverging. ♄. H. Native of North America from Canada to Pennsylvania in rich valleys. Michx. fil. arb. 2. t. 15. Tratt. arch. 1. no. 3. with a figure. The American sugar-maple will grow to the height of 40 feet. It has some resemblance to the Norway maple when the plants are young. The flowers are yellow, disposed in short compound corymbs, composed of imperfect hermaphrodite and perfect male flowers, the anthers being abortive in the first and perfect in the last. From this tree the inhabitants of North America make a very good sort of sugar in large quantities. It is very probable that the Americans make sugar from many species of maple, particularly *A. rùbrum* and *Negúndo fraxinifòlium*. The juice is obtained by tapping the trees ; warm days and frosty nights are most favorable to the plentiful discharge of the sap. A hole is made in the tree in an ascending direction by an augur, and a spout is introduced about half an inch, which projects from 3 to 12 inches ; it is generally of sumach or elder. The sap will sometimes flow 6 weeks, according to the temperature of the weather. Troughs are placed under the spouts to receive the sap, which is carried every day to a large receiver, from which it is conveyed, after being strained, to the boiler. Lime, eggs, or new milk is added to the sap in order to clarify it, but clear sugar may be made without any of these ingredients. The sugar, after being sufficiently boiled, is grained, clayed, and refined in the same manner as the cane sugar in the West Indies. The sooner the sap is boiled the better. It should never be kept more than 24 hours. The quality of maple sugar is superior to that which is made in the West Indies from the cane, and it deposits less sediment when dissolved in water. It has more the appearance of sugar-candy. "The sugar prepared from the sap of this tree is one of the greatest conveniences to the inhabitants of the Western Counties, is equal to any other sugar, and procured with little trouble." (Pursh.)

American *Sugar* Maple. Fl. Apr. May. Clt. 1735. Tr. 40 ft.

27 A. nìgrum (Michx. fil. arb. 2. p. 238. t. 16.) leaves cordate, with the recess closed ; palmately 5-lobed, pubescent beneath ; corymbs sessile, nodding ; fruit smooth, turgid at the base, with the wings diverging. ♄. H. Native of North America from New York to Carolina, on mountain lands. Flowers yellowish. This large tree produces sugar similar to the foregoing species, and occupies the same situation where the other is not found.

Black Maple. Fl. April, May. Clt. 1812. Tree 40 feet.

28 A. erioca'rpum (Mich. fl. amer. bor. 2. p. 253.) leaves truncate at the base, smooth and glaucous beneath, palmately 5-lobed, with blunt recesses, and unequally and deeply-toothed lobes ; flowers conglomerate, on short pedicels, apetalous, pentandrous ; ovaries downy. ♄. H. Native of North America on the banks of rivers from New England to Georgia. Desf. ann. mus. 7. p. 412. t. 25. A. dasycárpum, Willd. spec. 4. p. 985. Tratt. arch. 1. no. 8. with a figure. A. tomentòsum, Hort. par. A. glaúcum, Marsh. A. Virginiànum, Duh. A large tree with greenish-yellow seeds and flowers. It is known by the name of *White* or *Soft Maple*.

Hairy-fruited or White Maple. Fl. April, May. Clt. 1725. Tree 40 feet.

29 A. ru'brum (Lin. spec. 1496.) leaves cordate at the base, glaucous beneath, deeply and unequally toothed, palmately 5-lobed, with acute recesses ; flowers conglomerate, 5-petalled, pentandrous ; ovaries smooth. ♄. H. Native of North America in low woods from Canada to Florida. Mich. fil. arb. 2. t. 14. Desf. ann. mus. 7. p. 413. t. 25. Tratt. arch. 1. no. 9. with a figure. Schmidt. arb. 1. t. 6. A. Virginiànum, Herm. par. t. 1. Mill. ill. t. 8. f. 4. Trew. sel. t. 85, 86. A. floridànum, Hortul. Flowers and seeds red as well as the branches. A small tree, commonly known by the name of *Red, Scarlet*, or *Swamp Maple*. In Pennsylvania the natives use the wood for all sorts of wood-work ; with the bark they dye a dark blue, and make a good black ink. The Canadians tap the tree for the juice, of which they make sugar and treacle. With us it is grown for the sake of its red flowers, which are very shewy.

Red, Scarlet, or Swamp Maple. Fl. April, May. Clt. 1656. Tree 20 feet.

30 A. acumina'tum (Wall. mss. D. Don. prod. fl. nep. p. 249.) leaves cordate, smooth, 3-5-lobed ; lobes doubly serrated, long-acuminated ; corymbs few-flowered, erect, somewhat racemose, shorter than the leaves ; pedicels nearly opposite, elongated, smooth. ♄. H. Native of Nipaul in Sirinagur, where it is called *Khaunsing*. Flowers greenish-white ?

Acuminated-lobed Maple. Tree.

31 A. cultra'tum (Wall. pl. asiat. rar. 2. p. 4.) leaves cordate, 7-lobed, villous in the axils of the veins beneath, the rest smooth ; lobes acuminated, quite entire ; corymbs stalked, smooth ; flowers subumbellate ; petals wedge-shaped ; wings of fruit divaricate, cultriform. ♄. H. Native of the regions towards Himalaya in Kamaon and Sirinagur.

Cultrate-winged-fruited Maple. Tree.

§ 3. *Umbels stalked. Species not sufficiently known.*

* *Leaves 5 or 7-lobed, rarely 9-10-11-13.*

32 A. disse'ctum (Thunb. fl. jap. p. 160.) leaves 9-10-parted ; lobes oblong, acuminated, deeply serrated or pinnatifid ; umbels 4-6-flowered. ♄. H. Native of Japan.—Tratt. arch. 1. no. 18. with a figure. Corolla small, red.

Dissected-leaved Maple. Fl. May. Tree 30 feet.

33 A. Japo'nicum (Thunb. fl. jap. p. 161.) leaves roundish, villous, palmately multifid ; lobes 11-13, acuminated, serrated ; umbels many-flowered. ♄. H. Native of Japan. Trat. arch. 1. no. 16. with a figure. Branches and corollas purple. Fruit woolly.

Japan Maple. Fl. April, May. Tree 20 feet.

34 A. palma'tum (Thumb. fl. jap. p. 161.) leaves smooth, palmately divided into 5-7 lobes beyond the middle ; lobes

oblong, acuminated, serrated; umbels 5-7-flowered. ♄. H. Native of Japan. Tratt. arch. 1. no. 17. with a figure. Flowers greenish-yellow ?

Palmate-leaved Maple. Fl. May. Clt. 1820. Tree 20 ft.

35 A. SEPTE'MLOBUM (Thunb. fl. jap. p. 162.) leaves smooth, 7-lobed; lobes acuminated, equally and acutely serrated. ♄. H. Native of Japan.

Seven-lobed-leaved Maple. Fl. May. Tree 40 feet.

36 A. PI'CTUM (Thunb. fl. jap. p. 162.) leaves smooth, palmately 7-lobed; lobes acuminated, entire. ♄. H. Native of Japan. Tratt. arch. 1. no. 15. with a figure. Branches ash-coloured. Leaves variegated with white.

Painted-leaved Maple. Tree 30 feet.

37 A. CIRCINA'TUM (Pursh. fl. amer. sept. 1. p. 267.) leaves orbicular, rather cordate at the base, 7-lobed, smooth on both surfaces; lobes acutely toothed; nerves and veins hairy at their origin. ♄. H. Native of North America on the great rapids of the Columbia river and of Northern California. This beautiful species has leaves the size of *A. rùbrum*. The disposition of the flowers is unknown, therefore it is doubtful whether it belongs to this section.

Round-leaved Maple. Tree 56 feet.

38 A. LOBA'TUM (Fish. mss. Loud. hort. brit. p. 412.) leaves 7-lobed. ♄. H. Native of Siberia. This species is extremely doubtful. Disposition of flowers unknown.

Lobed-leaved Maple. Clt. 1820. Tree.

* * *Leaves trifid or undivided.*

39 A. TRI'FIDUM (Thunb. fl. jap. p. 163.) leaves undivided and trifid, entire. ♄. H. Native of Japan. The twigs are smooth and purplish.

Trifid-leaved Maple. Tree 20 feet.

Cult. Maples are for the most part trees of considerable size and beauty, and are chiefly used for plantations or avenues or the backs of shrubberies. Most of them will grow from cuttings, which should be taken off at a joint, and planted in a sheltered situation in the open air, the earlier in autumn this is done the better, particularly if the weather be moist; Mr. Sweet recommends the cuttings of most hardy trees and shrubs to be planted about the same time, as they succeed much better than if they are planted in spring, the usual time; the ground should be well fastened about them, so that the worms and frost may not loosen them. They may be also increased by layers put down in the autumn. The seeds of this genus should be sown if possible soon after they are gathered from the tree, because if sown then they will vegetate next spring, but if kept till spring few of them will vegetate the first year; these should be sown in a bed prepared for the purpose, and they should be covered over about an inch thick of mould; this bed should be dressed in spring before the plants make their appearance, and when the trees are of a sufficient size, which is generally after a year's growth, they should be planted out in rows, there they may remain until they are of sufficient size to be planted out into plantations or shrubberies.

II. NEGU'NDO (meaning unknown). Mœnch. meth. 334. D. C. prod. 1. p. 596.—Negúndium, Rafin.—A'cer. spec. Lin.

LIN. SYST. *Dioècia, Pentándria.* Flowers dioecious. Calyx small, unequally 4-5-toothed. Petals wanting. Male flowers in fascicles, on filiform pedicels. Anthers 4 or 5, linear, sessile. Female flowers in racemes.—Trees with impari-pinnate or trifoliate leaves.

1 N. FRAXINIFÒLIUM (Nut. gen. amer. 1. p. 253.) leaves pinnate, with 3 or 5 opposite, coarsely and deeply-toothed leaflets, with the odd one usually 3-lobed. ♄. H. Native of North America on the banks of rivers from Pennsylvania to Carolina. A'cer Negúndo, Lin. spec. 1497. Mich. fil. arb. 2. t. 16. Tratt. arch. 1. no. 10. with a figure. Wangh. amer. t. 12. f. 20. N. aceroìdes, Mœnch. meth. 334. Flowers green. The tree is commonly called *Box-elder* or *Ash-leaved Maple.*

Var. β, crìspa; leaflets curled.

Ash-leaved Negundo. Fl. May, June. Clt. 1688. Tr. 40 ft.

2 N. MEXICA'NUM (D. C. prod. 1. p. 596.) leaves all trifoliate. ♄. H. Native of Mexico. A'cer ternàtum, Moc. et Sesse, fl. mex. icon. ined. Perhaps this is only a variety of the preceding species. Flowers green.

Mexican Negundo. Tree 40 feet.

3 N. COCHINCHINE'NSE (D. C. prod. 1. p. 596.) leaves pinnate, usually with 4 pairs of alternate quite entire leaflets, and an odd one. ♄. H. Native of Cochin-china in woods. A'cer pinnàtum, Lour. fl. coch. 649. Petals 5, white. Wings of fruit fleshy. This may probably form a separate genus of *Sapindàceæ*, the stamens being 8. The wood is very hard.

Cochin-china Negundo. Tree 25 feet.

Cult. These trees are well adapted for the backs of shrubberies. Cuttings taken off at a joint, and planted in a sheltered situation early in autumn will strike root. They may be also increased by layers put down at the same time, or by seeds.

III. DOBI'NEA (an alteration from the Nipaulese name of the shrub). Hamilt. mss. D. Don, prod. fl. nep. p. 249.

LIN. SYST. *Monoècia, Monadélphia.* Flowers monoecious. Male flowers with a 1-leaved, 4-toothed, campanulate calyx. Stamens 8, joined into a column about the sterile style, 4 of which are shorter than the rest. Petals 4, oblong, unguiculate. Female flowers without a calyx or corolla. Ovary 1-seeded. Style crowned by a blunt stigma. Capsule compressed, with a winged margin, 1-celled, 1-seeded, sitting on the middle of a leafy pedicel. Seed flat. Albumen wanting. Shrub with simple leaves.

1 D. VULGA'RIS (Hamilt. mss. in D. Don, prod. fl. nep. p. 249.) ♄. H. Native of Nipaul at Narainhetty. Shrub branched; branches pubescent. Leaves elliptical, oblong, acutely serrated, hairy on both surfaces, acuminated and entire at the apex, 4-6 inches long, and about 2 in breadth. Flowers minute, loosely panicled, terminal, with pilose peduncles; female ones on leafy coloured pedicels.

Common Dobinea. Fl. Aug. Shrub 6 feet.

Cult. It is probable that the treatment and manner of propagation recommended for *Negúndo* will answer this shrub.

ORDER XLVII. HIPPOCASTA'NEÆ (this order only contains the horse-chesnut). D. C. theor. ed. 2. p. 244. prod. 1. p. 597.—Castaneàceæ, Link, enum. 1. p. 354.—Æ'sculus, Lin. gen. no. 462.

Calyx campanulate, 5-lobed. Petals 4 or 5, unequal, hypogynous. Stamens 7-8, inserted in the hypogynous disk, free, unequal. Anthers rather incumbent. Ovary roundish-trigonal. Style 1, filiform, conical, acute. Younger capsules 3-celled, 3-valved, each cell containing 2 ovulæ, with a dissepiment in the middle of each valve, which the ovulæ are fixed to; adult capsules coriaceous, rather globose, 2-3-celled, 2-3-valved, 2-4-seeded. Seeds large, somewhat globose, variously compressed and angled, covered by a very smooth, shining, ferrugineous shell, with a broad, cinereous-brown, basilar hilum. Albumen wanting. Embryo curved, inverted, with fleshy, thick, gibbous cotyledons, which are soldered together, through germination, within the seed cover. Plumule large, 2-leaved. Radicle

conical, curved, directed towards the hilum.—Trees and shrubs, with opposite, compound, palmate leaves, composed of 5 or 7 feather-nerved leaflets, and terminal, rather panicled racemes of flowers, with jointed pedicels. This order is much valued for the grandeur of the foliage and flowers of most of the species. Their bitter fruit has sometimes been used as a sternutary; it contains a large quantity of potash, and abundance of starch. The bark is astringent and febrifugal.

Synopsis of the Genera.

1 Æ'sculus. Capsule echinated.

2 Pa'via. Capsule smooth.

I. Æ'SCULUS (a name given by Pliny to a kind of oak, which had an eatable nut, derived from *esca*, nourishment). Lin. gen. no. 462. exclusive of some species. D. C. prod. 1. p. 597. —Hippocástanum, Tourn. inst. t. 612.

Lin. syst. *Heptándria, Monogýnia.* Calyx campanulate. Petals 4-5, expanded, with an ovate border. Stamens with the filaments recurved inwardly. Capsules echinated. Leaflets sessile or almost sessile.

1 Æ. Hippoca'stanum (Lin. spec. 488.) capsules echinated; petals 5; stamens 7; leaflets 7, obovately-cuneated, acute, toothed. ♄. H. Native of the north of India. Mill. ill. icon. Woodv. med. bot. t. 128.—Plenck. icon. t. 293.—Riv. pentap. irr. t. 123.—H. vulgàre, Gært. fruct. 2. t. 111. Petals white, and spotted with red and yellow. The common horse-chesnut is well known by the beautiful parabolic form in which it grows, and during the period of its flowering no tree possesses greater beauty, for the extremity of each branch is terminated by a raceme of shewy, variegated flowers, so that every part of the tree seems clothed with them. This tree, if grown singly in parks or lawns, has a more sightly appearance than if grown in avenues. The timber, though of inferior quality, is said to be used by the turner; however, its chief use is for fuel. In Turkey the nuts are ground and mixed with the provender for their horses, especially those which are troubled with coughs or are broken-winded. It is said that deer, sheep, and swine will fatten on them, and poultry have been kept with them boiled. The bark of this tree has been given in Italy, not without success, in intermittent fevers; it has also been used with good success in dyeing several sorts of yellow colours. The horse-chesnut was brought originally from the northern parts of Asia into Europe about the year 1550, and was sent to Vienna about the year 1558; from Vienna it migrated into Italy and France; but it came to us from the Levant. Gerard in his herbal speaks of it only as a foreign tree. In Johnson's edition of the same work it is said, "horse-chesnut groweth in Italy, and in sundry places of the East countries; it is now growing with Mr. Tradescant at South Lambeth." Parkinson says, "our Christian world had first the knowledge of it from Constantinople." The same author places the *horse-chesnut* in his orchard as a fruit-tree between the *walnut* and the *mulberry*. How little it was then (1629) known, may be inferred from his saying, not only that it is of greater and more pleasant aspect for the fair leaves, but also of as good use for the fruit, which is of a sweet taste, roasted and eaten as the ordinary sort. He also describes and figures the corolla with 4 petals. The tree does not appear to have been common even in the beginning of 1700.

Var. β, *flòre-plèno*; flowers double. This variety is rather of rare occurrence.

Var. γ, *variegàta*; leaves variegated.

Common *Horse-chesnut*. Fl. April, May. Clt. 1629. Tree 40 to 60 feet.

2 Æ. ca'rnea (Lindl. bot. reg. 1056.) capsules echinated; petals 5; stamens 7; flowers pubescent; leaflets 5, oblong, acuminated, serrated. ♄. H. Native of North America? This is one of the most beautiful of all hardy trees, resembling in general appearance the common horse-chesnut, but being small, and bearing a profusion of panicled racemes of rich flesh-coloured flowers, is more ornamental.

Flesh-coloured-flowered Horse-chesnut. Fl. July. Clt.? Tree 20 feet.

3 Æ. rubicu'nda (Lois. herb. amat. t. 367.) capsules echinated; petals 4, with the claws of the petals shorter than the calyx; stamens 8; leaflets 5-7, obovately-cuneated, acute, unequally serrated. ♄. H. Native of North America? Æ. cárnea, Hort. Wats. dend. brit. t. 121. This tree is very ornamental when in flower, the branches being terminated by racemes of fine scarlet flowers.

Reddish-flowered Horse-chesnut. Fl. June. Clt. 1820. Tree 20 feet.

4 Æ. gla'bra (Willd. enum. 405.) capsules echinated; corolla of 4 spreading petals, with their claws about the length of the calyx; stamens longer than the corolla; leaflets 5, very smooth. ♄. H. Native of North America in the western counties of Pennsylvania and Virginia. Flowers greenish-yellow.

Smooth Horse-chesnut. Fl. June. Clt. 1822. Tree 20 feet.

5 Æ. Ohioe'nsis (Mich. arb. 3. p. 242.) capsules echinated; corolla? leaflets 5, smooth, oval, acuminated, irregularly toothed. ♄. H. Native of North America on the banks of the river Ohio. Flowers white, numerous, racemose. Fruit about half the size of those of the common horse-chesnut.

Ohio Horse-chesnut. Fl. April, May. Clt.? Tree 30 feet.

6 Æ. pa'llida (Willd. enum. 406.) capsules echinated; corolla of 4 spreading petals, with their claws shorter than the calyx; stamens twice as long as the corolla; leaflets 5. ♄. H. Native of North America in the forests of Kentucky. Flowers greenish-yellow or whitish.

Pale Horse-chesnut. Fl. June. Clt. 1812. Tree 40 feet.

Cult. This is a genus of very shewy trees, well adapted for lawns or parks, having a beautiful effect when in flower. They will do well in any soil, but the deeper and more loamy the better. They may be either increased by layers put down in the spring, or by grafting or budding on the common horse-chesnut. Seeds of such species as can be procured should be sown singly in rows in spring, where they may remain until they are of sufficient size to be planted out permanently.

II. Pa'via (in honour of Peter Paw, a Dutch botanist, once professor of botany at Leyden). Boerh. lugd. 6. t. 260. D. C. prod. 1. p. 598.

Lin. syst. *Heptándria, Monogýnia.* Calyx tubular. Petals 4, erect, narrow. Stamens straight. Capsules unarmed. Leaves palmate, with stalked leaflets.

1 P. macrosta'chya (Lois. herb. amat. t. 212.) capsules unarmed; stamens much longer than the 4-petalled corolla; racemes very long; leaflets 5, downy beneath. ♄. H. Native of North America on the banks of rivers, particularly in Georgia near St. Augustin. Æ'sculus macrostàchya, Michx. fl. bor. amer. 1. p. 220. Jacq. eclog. 1. t. 9. Æ. parviflòra, Walt. car. 128. Pàvia álba, Poir. dict. 5. p. 95. Pàvia édulis, Poit. abr. fr. t. 88.—Coll. hort. rip. t. 19. A small shrub, with long racemes of small, very ornamental, white flowers. Roots stoloniferous. The whole of the North American species of this genus, as well

as those of the preceding, are known in their places of natural growth under the name of *Buck's-eye tree*.

Long-spiked Pavia. Fl. May, June. Clt. 1820. Shrub 6 ft.

2 P. RU'BRA (Lam. illus. t. 273.) capsules unarmed; stamens shorter than the 4-petalled corolla; leaflets 5, elliptical-oblong, acute at both ends, and are, as well as the petioles, smooth, but pilose at the origin of the nerves beneath. ♄. H. Native of North America in fertile valleys on the mountains of Virginia and Carolina; said also to be a native of Brazil and Japan. Æ'sculus Pàvia, Lin. spec. 488. Wats. dend. brit. t. 120. Duham. arb. 2. t. 19. Flowers of a dirty-scarlet colour in loose racemes. Usually a shrub, but sometimes a small tree.

Red-flowered Pavia. Fl. May, June. Clt. 1711. Shrub 4 feet. Tree 12 feet.

3 P. DI'SCOLOR; capsule unarmed; leaflets 5, acuminate at both ends, tomentose beneath, unequally serrulated; raceme thyrsoid, many-flowered; corolla of 4 conniving petals, with their claws the length of the calyx; stamens 7, shorter than the corolla. ♄. H. Native of North America, principally in the western territory of Georgia. *Æ'sculus díscolor*, Pursh. fl. amer. sept. 1. p. 255. Ker, bot. reg. 310. Flowers variegated with white, yellow, and purple.

Two-coloured-leaved Pavia. Fl. May. Clt. 1812. Sh. 4 ft.

4 P. HY'BRIDA (D. C. prod. 1. p. 598.) capsules unarmed; stamens shorter than the 4-petalled corolla; petioles smooth; leaflets 5, elliptical-oblong, acuminated at both ends, and clothed with velvety pubescence beneath. ♄. H. Native of North America, principally in the western territory of Georgia. *Æ'sculus hýbrida*, D. C. hort. monsp. 1813. p. 75. Flowers variegated with yellow, white and purple, disposed in thyrsoid racemes. Truly an intermediate plant between *P. rùbra* and *P. flàva*.

Hybrid Pavia. Fl. May, June. Clt. 1812. Shrub 4 feet.

5 P. HU'MILIS (G. Don, in Loud. hort. brit. p. 143.) capsules unarmed; stem decumbent; leaflets 5, lanceolate, stalked, unequally serrated, pubescent beneath; calyx cylindrically-funnel-shaped and pubescent, as well as the convolute corolla; stamens inclosed, a little longer than the calyx. ♄. H. Native of North America. *Æ'sculus hùmilis*, Lodd. cat. Lindl. bot. reg. t. 1018. Flowers blood-coloured, in loose terminal racemes. This plant is propagated by suckers.

Humble Pavia. Fl. May, June. Shrub 2 to 3 feet.

6 P. FLA'VA (D. C. prod. 1. p. 598.) capsules unarmed; stamens shorter than the 4-petalled corolla; petioles pubescent, flattish above; leaflets 5-7, elliptical-oblong, acute at both ends, pubescent beneath, as well as the nerves on the upper surface. ♄. H. Native of North America in the mountains of Virginia and Carolina, and the woods of Kentucky. *Æ'sculus flàva*, Ait. hort. kew, 1. p. 494. *Æ. lùtea*, Wangh. in act. nat. scrut. berl. 8. p. 133. t. 6. *Pàvia lùtea*, Poir. dict. 5. p. 94. Flowers pale-yellow disposed in thyrsoid racemes.

Yellow-flowered Pavia. Fl. May, June. Clt. 1764. Tree 20 to 30 feet.

7 P. NEGLE'CTA (G. Don, in Loud. hort. brit. p. 143.) capsules unarmed, but the ovary is tomentose; leaflets 5, lanceolate, serrulated, tapering to the base, flat, rather plicate, smooth beneath, but pilose in the axils of the veins; calyx campanulate, obtusely 5-toothed, about the length of the pedicel; stamens rather longer than the corolla; superior petal veined. ♄. H. Native of North America. *Æ'sculus neglécta*, Lindl. bot. reg. 1009. Leaves with rufous down on the veins on the upper side. Flowers pale-yellow, veined with red disposed in thyrsoid racemes.

Neglected Pavia. Fl. May, June. Tree 20 feet.

Cult. This genus is composed of shewy flowering shrubs and trees, well adapted for shrubberies. They will thrive well in any soil, but the more loamy the better. They may be increased by layers put down in the spring, or by grafting or budding on the common horse-chesnut. Seeds, when they can be procured, should be sown singly in rows, in the month of March or April, about an inch under ground; and when the plants are of sufficient size, they should be planted out where they are intended to remain.

ORDER XLVIII. RHIZOBO'LEÆ. D. C. prod. 1. p. 599.

Calyx usually of 5 sepals (f. 110. *a.*), rarely of 6, more or less connected at the base, therefore it is commonly called 5-6-parted or 5-6-cleft. Petals unequal, usually 5 (f. 110. *b.*), rarely 8, alternating with the sepals when the same number, inserted into the hypogynous disk with the stamens, and adnate to their tube. Stamens very numerous, disposed in a double order on the disk, inner series usually shortest, with sterile anthers, with the filaments monadelphous at the base, the rest filiform, awl-shaped, with round anthers. Ovary free, subglobose (f. 110. *e.*), somewhat tetragonal, 4-celled, 4-seeded. Styles 4 (f. 110. *d.*) 5-6. Stigmas simple. Fruit containing 4 adglutinated nuts, but usually fewer from abortion (f. 110. *f.*). Nuts indehiscent, 1-celled, covered with a hard shell, which is beset with bristles outside. Almonds or seeds kidney-shaped, keeled on the back, exalbuminous, tapering to both ends. Funicle dilated into a spongy 2-lobed caruncle. Embryo with a very large ascending radicle, which is the substance of the almond eaten, and with very small, ovate-lanceolate, leafy cotyledons, lying in the furrow of the radicle.—Trees with opposite, stalked, palmate, stipulate leaves, composed of 3-5 leaflets, and racemose bractless flowers. This is a very distinct order, approaching on one hand the *Terebinthàceæ*, and especially with *Mangífera*, but from the hypogynous insertion of the petals and stamens and form of fruit it comes more near to *Sapindàceæ*. It agrees also with *Hippocastàneæ* in the leaves being opposite, as well as being palmately compound, but in *Hippocastàneæ* the radicle is small and the cotyledons are large, but on the contrary in *Rhizobòleæ* the radicle is large and the cotyledons are small, but it differs also in the large regular flowers, and in the number of stamens. In both these orders the substance of the albumen appears as if it was consumed by various parts of the embryo. The order is remarkable for containing the *Soari Saouari* or *Suwarrow-nut* and *Butter-nut*. The first is not unfrequent in fruiterers' shops. It is sweet and palatable.

I. CARYO'CAR (from καρυον, *caryon*, a nut. The species bear large fruit containing eatable nuts). Lin. mant. 247. D. C. prod. 1. p. 599.—Rhizóbolus, Gært. fruct. 2. p. 93.—Pèkea and Saouári, Aubl. guian. 1. p. 594 and 599.

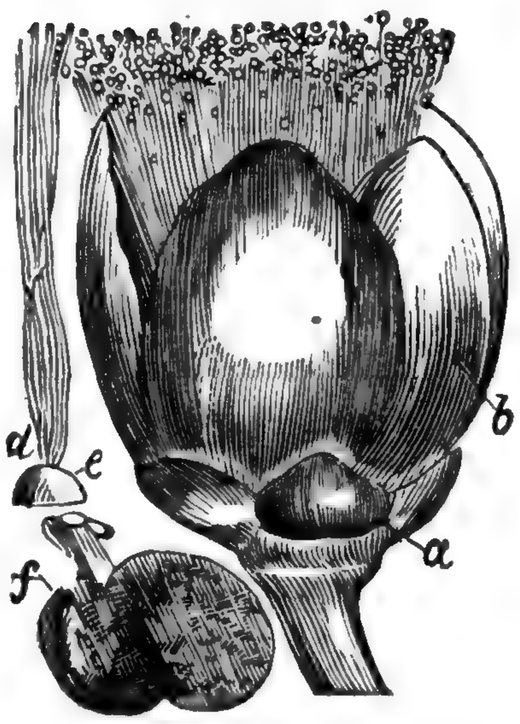
LIN. SYST. *Polyándria, Tetra-Hexagýnia.* Calyx 5 (f. 110. *a.*) -6-parted. Petals 5 (f. 110. *b.*) -8. Stamens numerous, monadelphous at the base. Styles 4 (f. 110. *d.*) 5-6. Ovary 5-6-celled; cells 1-ovulate. Drupe containing 4-5 reticulated hispid nuts, or from abortion 1-2 (f. 110. *b.*) or 3.

§ 1. *Saouári (the name of C. glàbrum in Guiana). Aubl. guian. 1. p. 599. D. C. prod. 1. l. c. Leaves trifoliate.*

1 C. NUCÍFERUM (Lin. mant. 247.) leaves trifoliate; leaflets

elliptical-lanceolate, obscurely serrated, smooth; calyx and corolla purple; petals 5; stamens very numerous, white; anthers oblong, yellow; drupe about the size of a man's head. ♄. S. Native of South America, Berbice, Essequibo. Hook, bot. mag. t. 2727 and 2728. Rhizóbolus Pèkea, Gærtn. fruct. p. 93. t. 98. f. 1. R. tuberculòsus, Smith, in Rees' cycl. Amýgdala Guianénsis, Clus. exot. p. 276. f. 1. The nuts of this tree are sold in fruit-shops under the name of *Saouari Suwarrow*, or *Suwarra-nut*, or *Butter-nut*. The fruit is 4-celled, containing 1 nut in each, embedded in white pulp; they are of a round kidney-shaped figure, compressed on one side. The shell of the nut is very hard and tubercled. The kernel or seed, which is the part eaten, is covered by a red-brown membrane, internally pure white, soft, and fleshy, and rather oily, which is of a very agreeable flavour.

FIG. 110.



Nut-bearing or Common Suwarrow-nut. Clt. 1825. Tree 100 feet.

2 C. gla'brum (Pers. ench. 2. p. 84.) leaves trifoliate, smooth; leaflets ovate, acuminated, a little toothed; drupe about the size of a hen's egg. ♄. S. Native of Guiana in the woods. Saouári glàbra, Aubl. guian. 1. p. 599. t. 241. Rhizóbolus Saouári, Corr. ann. mus. 8. p. 394. t. 5. f. 2. Flowers whitish. Kernels of nuts eatable. The fruit of this tree is sold in the markets of Cayenne under the name of *Saouari*.

Smooth Suwarrow-nut. Tree 100 feet.

3 C. villòsum (Pers. ench. 2. p. 84.) leaves trifoliate; leaflets ovate, roundish, rather acute, tomentose beneath. ♄. S. Native of Guiana in woods. Saouári villòsa, Aubl. guian. 1. p. 599. t. 241. Flowers and fruit unknown.

Villous-leaved Butter-nut. Tree 100 feet.

4 C. Brasilie'nse (St. Hil. fl. bras. 1. p. 322. t. 67.) leaves trifoliate; leaflets obovate-oblong, sinuately-toothed, tomentose beneath. ♄. S. Native of Brazil in the provinces of St. Paul and Minas Geraes, where it is called by the inhabitants *Pequi*. A small tree with a twisted stem. Petals coloured with saffron and rose-colour on the outside.

Brazilian Butter-nut. Tree 20 feet.

5 C. amygdalíferum (Cav. icon. 4. p. 37. t. 361 and 362.) leaves trifoliate, smooth; leaflets lanceolate, serrated, with a fascicle of hairs at the origin of each nerve beneath; anthers roundish. ♄. S. Native of South America in the woods of Maraquita in Santa Fe de Bogota. This tree grows to the height of 180 to 240 feet. Flowers greenish-yellow. Styles 2. Kernels of nuts eatable, with the taste of almonds.

Almond-bearing Butter-nut. Tree 240 feet.

6 C. amydalifo'rme (Ruiz et Pav. fl. per. 5. t. 570.) leaves trifoliate; leaflets oblong, acuminated, sinuately toothed; flowers corymbose, terminal; styles 3; fruit globose; nuts muricated. ♄. S. Native of Peru. The kernels of the nuts taste like almonds.

Almond-like Butter-nut. Tree 100 feet.

§ 2. Pe'kea (the name of *C. butyròsum* in Guiana). Aubl. guian. 1. p. 594. D. C. prod. 1. c. Leaves of 5 leaflets.

7 C. butyro'sum (Willd. spec. 2. p. 1243.) leaves of 5 smooth, oval-lanceolate, acuminated, entire leaflets; drupe smooth. ♄. S. Native of Guiana in woods. Pèkea butyròsa, Aubl. guian. 1. p. 594. t. 238. Lam. ill. t. 486. Flowers in terminal corymbs, with 5 white petals, 6-parted calyx, and yellow anthers. This tree is cultivated for its nuts in Cayenne, which are esculent, and taste somewhat like a Brazil-nut. The wood is useful.

Butter-nut. Tree 80 feet.

8 C. tomento'sum (Willd. spec. 2. p. 1244.) leaves of 5 oval, acuminated, entire leaflets, which are tomentose beneath; drupes clothed with blunt tubercles. ♄. S. Native of Guiana in woods. Pèkea tuberculòsa, Aubl. guian. 1. p. 397. t. 239. Flowers white, in terminal bunches. Kernels of nuts sweet and eatable, but not so buttery as those of the preceding.

Tomentose-leaved Butter-nut. Clt. 1820. Tree 100 feet.

Cult. These fine fruit-trees are of easy culture when once introduced, but they are truly difficult to import. The way to succeed is by planting the seeds in boxes of mould in the countries of their natural growth, and when these seeds have vegetated, and the plants arrived at a proper strength, they should then be sent off, at a time when they will arrive in the summer in this country. They will all thrive well in a mixture of loam, peat, and sand, and ripened cuttings will root in sand under a hand-glass, in a moist heat. Seeds soon become rancid.

Order XLIX. SAPINDA'CEÆ (plants agreeing with *Sapíndus* in important characters). Juss. ann. mus. 18. p. 476.—Sapíndi, Juss. gen. 246.

Flowers polygamous. Male ones with the calyx more or less profoundly 4-5-parted or 4-5-sepalled (f. 111. *a.*); imbricate in æstivation. Petals 4 (f. 111. *b.*) -5, rarely wanting, alternating with the sepals, inserted in the receptacle, sometimes naked, sometimes furnished with an appendage on the inside, imbricate in æstivation. Disk fleshy, sometimes occupying the bottom of the calyx, regular, nearly entire, expanded at the apex between the petals and stamens, sometimes glandular, incomplete, with the glands situated between the petals and the stamens. Stamens 8 (f. 111. *c.*) -10, rarely 5-6-7, but very rarely 20, sometimes inserted in the disk, sometimes in the receptacle, between the glands and the pistil; filaments free, or connected at the very base; anthers bursting inwards lengthwise. Rudiment of a pistil small or wanting. Hermaphrodite flowers with the calyx, petals, stamens, and disk, as in the male flowers. Ovary 3-celled, rarely 2-4-celled; cells 1-2-3, rarely many-ovulate. Style undivided (f. 111. *d.*), or more or less profoundly 3-cleft, rarely 2-cleft. Ovulæ erect or ascending when there is only one in each cell, rarely, as in *Hypelàte*, suspended; when there are 2 in each cell the superior one is erect or ascending, the inferior one suspended. Fruit sometimes capsular, opening at the cells or dissepiments, 2-3-valved, sometimes samaroid, sometimes fleshy and indehiscent. Seeds usually arillate. Outer covering crustaceous or membranous, inner one pellucid. Albumen wanting. Embryo rarely straight, usually curved or spirally convolute. Radicle pointing towards the hilum. Cotyledons incumbent, joined together into a thick mass. Plumule 2-leaved.—This order is composed of trees and shrubs, often climbing, and furnished with tendrils, rarely climbing herbs. The leaves are alternate, usually compound, rarely simple, stipulate or exstipulate, usually marked with pellucid lines or dots. The flowers are disposed in racemes or racemed panicles; they are small, white, or rose-coloured, rarely yellow. The most prominent distinctive peculiarity of this order con-

sists in the petals being each furnished on the inside with an additional scale or a tuft of hairs instead. The only plant in this order which will bear the climate of England is *Kœlreutèria paniculàta*, a beautiful tree, with panicles of yellow flowers. Many of the species of *Nephèlium* bear excellent fruit, as well as the *Blighia sápida* and *Melicócca bijùga*. The rind of the fruit of many species of *Sapíndus* is used instead of soap, in the places of their natural growth.

Synopsis of the Genera.

SECTION I.

SAPI'NDEÆ *(Cambess. in mem. mus.* 19. *p.* 18.*)* *Ovary containing one ovula in each cell. Embryo curved, rarely straight.*

* *Climbing shrubs or herbs, furnished with tendrils. The upper or fifth petal absent, and with its seat vacant.*

1 CARDIOSPE'RMUM. Sepals 4, unequal. Petals 4, furnished each with a scale on the inside, and with 2 glands on the disk, opposite the lower petals. Stamens 8, unequal. Style profoundly trifid. Capsule trigonal, membranous, bladdery, 3-celled, 3-seeded. Seeds fixed to the central placenta.

2 URVI'LLEA. Sepals 5, unequal. Petals 4, furnished with scales above the base inside, and with 4 glands opposite the petals. Stamens 8. Style trifid. Capsule membranous, 3-winged, bladdery, 3-celled, or composed of 3 indehiscent, 1-seeded carpels, fixed to the central axis.

3 SERJA'NIA. Sepals 4 (f. 111. *a.*) -5, unequal. Petals 4 (f. 111. *b*,), furnished each with a scale above the base on the inside, and with 2-4 glands at the base of the petals. Stamens 8. Style trifid (f. 111. *d.*). Capsule membranous, 3-winged (f. 111. *f.*), composed of 3 carpels, fixed to the filiform axis, which are drawn out each at the base into a wing, but 1-celled and 1-seeded at the apex.

4 PAULLI'NIA. Sepals 4-5, unequal. Petals 4, furnished each with a scale above the base, with 2-4 glands at the base of the petals. Stamens 8. Style trifid. Capsule pear-shaped, trigonal, usually with 3 short wings at the apex, 3-celled, 3-valved. Seeds fixed to the central axis at the bottom of the cells, half covered by a 2-lobed aril.

5 ENOU'REA. Calyx 4-parted, unequal. Petals 4, inserted in the calyx? furnished each with a scale on the inside at the claws, with 2 glands at the base of the larger petals. Stamens 13, connate at the base. Stigmas 3. Capsule spherical, 3-valved, 1-celled, 1-seeded. Seed enwrapped in mealy pulp.

* * *Upright trees and shrubs.*

6 TOULI'CIA. Calyx 5-parted, unequal. Petals 5, furnished each with a long, 2-parted, pilose appendage at the base inside. Stamens 8. Style trifid. Fruit 3-winged, composed of 3 carpels, adnate to the central axis, each drawn out in a wing at the base, and 1-celled, 1-seeded at the apex.

7 SCHMIDE'LIA. Calyx 4-parted, unequal. Petals 4, naked, or furnished each with a scale above the claw, with 4 glands on the disk, opposite the petals. Stamens 8. Style bifid or trifid, seated between the lobes of the ovary. Fruit indehiscent, 1-2, rarely 3-lobed; lobes roundish, fleshy or dry.

8 IRI'NA. Calyx 5-parted. Petals 5, naked. Disk emarginate. Stamens 5. Style crowned by an obtuse stigma. Carpel solitary from abortion, dry, indehiscent. Seed solitary, without aril.

9 PRO'STEA. Calyx 5-parted, unequal. Petals 5, furnished each with a small scale on the inside at the base. Stamens 20. Style undivided, seated between the lobes of the ovary. Ovary 3-lobed; lobes of 3, 1-ovulate cells. Fruit indehiscent, fleshy, 1-lobed from abortion, as well as 1-celled.

10 LEPISA'NTHES. Sepals 4, unequal. Petals 4-5, furnished each with a scale on the inside. Disk emarginate. Stamens 8. Ovary trigonal, 3-celled; cells 1-seeded. Style almost wanting, crowned by an obtuse stigma. Drupe tetragonal, containing a 3-celled, 3-seeded nut.

11 SAPI'NDUS. Calyx 5-parted. Petals 5, naked or furnished each with a scale. Stamens 8-10. Style undivided. Stigma terminal, 3, rarely 2-lobed. Fruit fleshy, 1-2-lobed from abortion, rarely 3-lobed; lobes 1-2, rarely 3-seeded.

12 ERIOGLO'SSUM. Sepals 5, unequal. Petals 4, furnished each with a strap-like, bifid, villous appendage inside. Stamens 8, unequal, villous. Style crowned by an obtuse stigma. Ovaries 3, 1-seeded. Carpels 3, elliptical, baccate, connate at the base, but usually solitary from abortion.

13 MOULI'NSIA. Calyx 5-parted. Petals 4, furnished each with a cucullate scale on the inside. Disk 4-lobed. Stamens 8. Style crowned by a 3-lobed stigma, seated between the lobes of the ovary. Fruit 3-lobed, or from abortion only 2-lobed, 2-3-celled.

14 CUPA'NIA. Calyx 5-cleft or 5-parted. Petals 5, furnished each with a small scale above the base. Stamens 10, or 5-9 from abortion. Style trifid or undivided. Capsule pear-shaped, 2-3-angled, 2-3-valved, 2-3-celled, 2-3-seeded. Seeds arillate.

15 HARPU'LIA. Calyx 5-cleft. Petals 5. Stamens 5, alternating with the petals. Style short, crowned by a 2-lobed stigma. Capsule 2-celled. Seeds solitary, arillate. Disk fleshy, villous.

16 BLIGHIA. Calyx 5-parted. Petals 5, hardly appendiculate at the base. Style trifid. Fruit 3-lobed, fleshy. Seeds solitary, seated on a thick fleshy aril.

17 TALÍSIA. Calyx 5-cleft. Petals 5, furnished each with a pilose scale above the base, nearly equalling the limb. Disk very fleshy. Stamens 8. Stigma nearly sessile, obsoletely 3-toothed. Ovary 3-4-celled, 3-4-seeded. Seeds fixed to the bottom of the cells.

18 STADMA'NNIA. Calyx 5-toothed. Petals wanting. Stamens 8. Style short, crowned by a trigonal stigma. Berry globose, 1-celled, 1-seeded from abortion.

19 MATA'YBA. Calyx deeply 5-cleft, with short appendages on the inside at the base. Stamens 8. Stigma subsessile, somewhat 3-toothed. Ovary 2-celled, 2-ovulate. Ovulæ fixed to the central axis at the middle of the cells, ascending.

20 NEPHE'LIUM. Calyx 5-6-toothed. Petals 5-6, rarely wanting, densely pilose inside. Stamens 8-10, rarely 6. Style crowned by a 2-3-lobed stigma. Ovary obcordate, didymous,

2-celled. Fruit indehiscent, usually 1-lobed from abortion, the other one being abortive, tubercled or muricated, rarely smooth. Seeds thick, covered by a thick fleshy aril.

21 THOUI'NIA. Calyx 4-5-parted. Petals 4-5, naked. Stamens 8-10. Style crowned by a trifid stigma, seated between the lobes of the ovary. Fruit of 3 carpels, adnate to the central axis, each drawn out into a wing both at the top and the back, 1-celled, 1-seeded.

22 HYPELA'TE. Calyx 5-parted. Petals 5, and wanting, naked inside. Stamens 8-10. Style short, crowned by a 2-3-lobed stigma. Ovary 2-3-celled, 2-3-ovulate; ovulæ pendulous. Fruit dry, indehiscent, 1-2-celled from abortion.

23 APHA'NIA. Calyx 4-parted, unequal. Petals 4, ciliated, with 2 little scales at the base of each on the inside. Stamens 5. Ovary ovate, compressed, 2-celled, 2-seeded. Style nearly wanting, crowned by an emarginate stigma.

24 MELICO'CCA. Calyx 4-5-parted. Petals 4-5, naked inside and wanting. Stamens 8-10. Style crowned by 2-3-lobed stigma. Ovary 2-3-lobed, 2-3-celled, 2-3-seeded. Fruit fleshy, 1-2-celled, 1-2-seeded from abortion. Seeds covered by a fleshy substance.

SECTION II.

DODONÆA'CEÆ *(Cambess. in mem. mus.* 19. *p.* 33.) *Cells of ovary containing* 2-3-*ovulæ* (f. 112. *g.*). *Embryo spirally twisted.*

25 KŒLREUTE'RIA. Calyx 5-parted. Petals 3-4, furnished each with a small, 2-parted appendage at the base. Disk fleshy. Stamens 8, rarely 5-6-7. Style truncate or acutish at the apex. Capsule bladdery, 1-celled above, but 3-celled below, 3-valved; valves seminiferous beneath the middle.

26 COSSI'GNIA. Calyx 5-parted. Petals 4, naked inside. Stamens 5-6. Style crowned by a capitellate stigma. Ovary 3-celled; cells 3-ovulate. Capsule 3-valved, 3-celled; cells 2-3-seeded. Seeds fixed to the central receptacle.

27 LLAGUNÒA. Calyx 5-cleft. Petals wanting. Disk fleshy. Stamens 8, rarely 9-10. Style crowned by a 3-lobed stigma, Capsule 3-lobed, 3-celled, 3-valved; valves with a dissepiment in the middle of each; cells 1-2-seeded.

28 DODONÆ'A. Calyx 3-4 (f. 112. *a.*), rarely 5-parted. Petals wanting. Stamens 8, rarely 9-10. Style short, 2-3, rarely 4-cleft (f. 112. *d.*). Capsule 2 (f. 112. *f.*) -3-4-winged, 2-3-4-celled, 2-3-4-valved; valves keeled, winged on the back (f. 112. *f.*).

29 MAGO'NIA. Calyx 5-parted, unequal. Petals 5, naked inside. Stamens 8. Style curved, crowned by a somewhat 3-lobed stigma. Capsule large, woody, 3-valved, many-seeded. Seeds large, flat, girded by a wing. Embryo straight.

30 ALE'CTRYON. Berry coriaceous, globose, with a crest on one side, 1-celled, 1-seeded. Seed erect, girded by aril at the base. Embryo spirally convolute.

† *Genera allied to Sapindàceæ, but they are not sufficiently known.*

31 EYSTA'THES. Sepals 5. Petals 5, ovate, equal with the sepals. Stamens 8. Style filiform, crowned by an obtuse stigma. Berry globose, fleshy, 1-celled, 4-seeded. Leaves simple.

32 RACA'RIA. Drupe ovate, 1-celled, containing 3 oblong, trigonal nuts, covered with a fragile integument. Leaves abruptly pinnate. Trunk spinose.

33 VALENTI'NIA. Calyx 5-parted, coloured. Petals wanting. Capsule baccate, pulpy inside, opening by 3-4 revolute valves. Seeds 3-4, oblong. Leaves simple.

34 PEDICE'LLIA. Flowers polygamo-dioecious. Calyx 5-parted. Petals wanting. Stamens 8. Ovary pedicellate. Style almost wanting, crowned by 3 reflexed stigmas. Capsule 3-valved, containing 1 pedicellate seed. Leaves opposite, simple.

35 PIERA'RDIA. Flowers monoecious. Calyx 4-parted. Petals 4. Stamens 8. Style crowned by 3 stigmas. Berry globose, 3-celled, 3-seeded. Leaves simple.

Section I.

SAPI'NDEÆ (plants agreeing with *Sapíndus* in important characters). Ovary containing 1 ovula in each cell. Embryo curved, rarely straight.

* *Climbing herbs and shrubs, furnished with tendrils. The upper or fifth petal absent and with its seat vacant. Leaves decompound or pinnate.*

I. CARDIOSPE'RMUM (from καρδια, *cardia*, the heart, and σπερμα, *sperma*, a seed; in allusion to the form of the seeds) Lin. gen. no. 498. D. C. prod. 1. p. 601. Cambess. in mem. mus. 19. p. 18. t. 1. A and B.—Corindum, Tour. inst. t. 246.

LIN. SYST. *Octándria, Monogýnia.* Calyx of 4 sepals, 2 outer ones smallest. Petals 4, 2 lateral ones usually adhering to the sepals, furnished each with an emarginate scale above the base, 2 lower ones remote from the stamens, with their scales furnished with a glandular crest at the apex, and ending in an inflexed appendage beneath the apex. Glands 2 on the disk, opposite the lower petals; they are either round or linear. Stamens 8, around the base of the ovary, the 4 which are nearest the glands are shortest. Style trifid, with the segments longitudinally stigmatose inside. Fruit a membranous, bladdery capsule, which is 3-celled, 3-valved, with a thin dissepiment opposite the valves, adnate to the central axis. Seeds globose, with a thick funicle, usually expanded into a 2-lobed aril.—Twining and climbing, tendrilled herbs or shrubs, with biternate or supra-decompound, exstipulate leaves, and the flowers disposed in short, compound racemes, with the common peduncle furnished with 2 opposite tendrils under the flowers.

* *Species with 2 short, rounded, hypogynous glands at the base of the lower petals.*

1 C. HALICA'CABUM (Lin. spec. 925.) stem, petioles, and leaves smooth; leaves biternate; leaflets stalked, deeply toothed. ☉. S. Native of the East Indies, and perhaps of the Caribbee Islands. Sims, bot. mag. t. 1049.—Rumph. amb. 6. t. 24. f. 2. Lam. ill. t. 317. Flowers white, on long, axillary peduncles.

Winter-cherry or Common Heart-seed, or Heart-pea. Fl. July. Clt. 1594. Pl. cl.

2 C. MICROCA'RPUM (H. B. et Kunth, nov. gen. amer. 5. p. 104.) branches smooth; leaves biternate; leaflets deeply-serrated, and clothed on both surfaces with close-pressed down; capsules rather turbinate, and clothed with hairy-pubescence.

4. ◡. S. Native of South America in humid places in the province of Orinoco. Flowers white.

Small-fruited Heart-seed. Pl. cl.

3 C. mo'lle (H. B. et Kunth, nov. gen. amer. 5. p. 104.) branches villous; leaves supra-decompound; leaflets sharply and deeply serrated, trifid, covered on both surfaces with long, close-pressed hairs, hoary beneath; capsules somewhat globose, and clothed with soft hairs. 4. ◡. S. Native of Mexico near Guanaxuata. Flowers white.

Soft Heart-seed. Pl. cl.

4 C. Loxe'nse (H. B. et Kunth, l. c.) branches clothed with white wool; leaves subternate; leaflets coarsely crenate-serrated, clothed with close-pressed hairs on the upper surface, but with silky hairs on the under, and hoary; capsules somewhat globose, and covered with hairy-pubescence. 4. ◡. S. Native of Peru near Loxa. Flowers white.

Loxa Heart-seed. Pl. cl.

5 C. Cori'ndum (Lin. spec. 526.) leaves tomentose beneath, biternate; leaflets on very short stalks, somewhat cordate, cut, obtuse; seeds marked with a black spot in the shape of a heart. ⊙. ◡. S. Native of Brazil. C. villòsum, Mill. dict. no. 3. Flowers white.

Indian-heart-seed. Fl. July, Aug. Clt. 1750. Pl. cl.

** *Species with 2 elongated, linear, hypogynous glands between the lower petals and the stamens.*

6 C. cane'scens (Wall. pl. rar. asiat. 1. t. 14.) hoary-villous; leaves biternate; leaflets cuneately obovate, coarsely serrated, intermediate one stalked, and entire at the base, lateral ones sessile; capsule nearly globose, glaucous, pubescent. ⊙. ◡. S. Native of Ava on the Irawaddi, also at Martaban. Flowers greenish-white.

Canescent Heart-seed. Shrub cl.

7 C. grandiflòrum (Swartz, fl. ind. occ. 2. p. 698.) stem rather shrubby at the base; petioles and leaves pubescent; leaves triternate; capsules acuminated, large, tomentose. ♄. ◡. S. Native of Jamaica in hedges and among bushes. Flowers white.

Great-flowered Heart-seed. Fl. July, Aug. Clt. 1817. Sh. cl.

8 C. Leuarttia'num (St. Hil. fl. bras. 1. p. 349.) stem twining, puberulous; leaves biternate; leaflets oblong, acute, dentately-serrated, smoothish, terminal one cuneated; glands on the receptacle elongated and linear. ⊙. ◡. S. Native of Brazil in the province of Minas Geraes. Panicle short, axillary. Allied to *C. élegans*.

Leuartt's Heart-seed. Pl. cl.

9 C. e'legans (H. B. et Kunth, nov. gen. amer. 5. p. 99. t. 439.) stem shrubby at the base; branches puberulous; leaves biternate; leaflets coarsely serrated, smooth; capsules somewhat globosely-elliptical, smooth. ♄. ◠. S. Native of Peru. Flowers white.

Elegant Heart-seed. Shrub cl.

10 C. coluteoi'des (H. B. et Kunth, nov. gen. amer. 5. p. 100.) leaves biternate; leaflets coarsely and deeply crenated, puberulous above, clothed beneath with soft pubescence, as well as the branches; capsules elliptical-oblong, smooth. 4. ◡. S. Native of South America near Caraccas on mountains. C. vesicàrium, Humb. rel. hist. 1. p. 39. Flowers whitish.

Colutea-like Heart-seed. Fl. July, Aug. Clt. 1822. Pl. cl.

11 C. macrophy'llum (H. B. et Kunth, nov. gen. amer. 5. p. 100.) leaves biternate; leaflets sharply and deeply serrated, clothed beneath, as well as the branches, with soft pubescence, and hoary. 4. ◠. S. Native of South America near Atures in the province of Orinoco. Fruit unknown. Flowers whitish.

Long-leaved Heart-seed. Pl. cl.

12 C. parviflòrum (St. Hil. fl. bras. 1. p. 351.) stem twining, pubescent; leaves biternate; leaflets deeply toothed, puberulous, terminal ones ovate-oblong, acutish, lateral ones oblong, obtuse; glands on the receptacle short. ⊙. ◡. S. Native of Brazil in the province of Rio Janeiro. Panicles short, corymbose.

Small-flowered Heart-seed. Pl. cl.

13 C. ano'malum (St. Hil. fl. bras. 1. p. 351. t. 73.) stem erect, hispid; leaves biternate; leaflets pinnate-lobed, acutish, cuneated, hispid; glands on the receptacle round, short. ♄. S. Native of Brazil in the province of Minas Geraes. Root fusiform. Tendrils wanting.

Anomalous Heart-seed. Shrub 1 foot.

14 C. hi'spidum (H. B. et Kunth, l. c.) branches and petioles covered with hispid hairs; leaves biternate; leaflets deeply crenate-serrated, smooth. 4. ◠. S. Native of South America on the banks of the river Amazon near Tomependa. Flowers whitish. Fruit unknown.

Hispid Heart-seed. Pl. cl.

15 C. hirsu'tum (Willd. spec. 3. p. 467.) stem and petioles hairy; leaves biternate; leaflets stalked, ovate, acuminated, smooth, but downy beneath at the origin of the veins. ⊙. ◠. S. Native of Guinea. Flowers white.

Hairy Heart-seed. Fl. July, Aug. Clt. 1822. Pl. cl.

† *Species not sufficiently known.*

16 C. pube'scens (Lag. gen. et spec. 14.) shrubby pubescent; capsules obtuse. ♄. ◠. S. Native of New Spain. Corolla blood-coloured, twice as large as that of *C. Halicácabum*.

Pubescent Heart-seed. Fl. July, Aug. Clt. 1823. Shrub cl.

Cult. The species of this genus are climbing plants hardly worth cultivating except in general collections. They are all of easy culture, but they will thrive best in a mixture of loam and peat; and cuttings will strike root readily in sand under a hand-glass, in heat. The annual species may be sown thinly in pots in spring, and then placed in a hot-bed, and when the plants are of considerable size they may be thinned, and the pots removed to the stove, where they may stand until the plants have ripened their seed.

II. URVI'LLEA (in honour of Captain Dumont D'Urville, of the French navy, who was sent out to ascertain the fate of La Perouse, an acute botanist, author of a paper on the plants of the Island of Melos). H. B. et Kunth, nov. gen. amer. 5. p. 105. t. 440. D. C. prod. 1. p. 602. Cambess. in mem. mus. 18. p. 19.

Lin. syst. *Octándria, Monogýnia.* Calyx of 5 sepals, 2 outer ones smallest. Petals 4, each furnished with a scale above the base, 2 lower ones remote from the stamens, the scales of the 2 lower petals, ending in inflexed appendages. Glands 4 on the disk, opposite the petals, 2 lowest ones largest. Stamens 8, connate around the base of the ovary. Style trifid, with the segments longitudinally stigmatose on the inside. Capsule membranous, 3-winged, a little inflated in the middle, 3-celled, or composed of 3 1-celled, indehiscent carpels, which are winged on the back. Seeds globose, with a thick funicle, expanded into a small, 2-lobed aril. Embryo hardly curved.—Climbing or twining-tendrilled shrubs, with ternate leaves, and with the flowers disposed in spike-formed racemes, the common peduncle usually furnished with 2 opposite tendrils under the flowers. Flowers white.

1 U. ulma'cea (H. B. et Kunth, l. c.) leaves ternate; leaflets ovate, acuminated, regularly serrated, pubescent beneath, as well as the petioles and branches. ♄. ◠. S. Native of South America on mountains near Caraccas. Kœlreutèria triphýlla, Pers. ench. 1. p. 414.

Elm-like Urvillea. Fl. May, July. Clt. 1824. Shrub cl.

2 U. Berteria'na (D. C. prod. 1. p. 602.) leaves ternate; leaflets ovate, coarsely and irregularly toothed, middle one cu-

neated at the base, smoothish beneath, as well as the branches and petioles. ♄ . ◠. S. Native of St. Martha. Paullìnia Berteriàna, Balb. mss.

Bertero's Urvillea. Shrub cl.

3 U. GLA'BRA (St. Hil. fl. bras. 1. p. 353. t. 74.) stem smooth; leaflets ovate-oblong, acutish, mucronulate, nearly entire, smooth. ♄ . ◡. S. Native of Brazil near Rio Janeiro. Leaves ternate. Racemes twin or solitary.

Smooth Urvillea. Shrub cl.

4 U. RUFE'SCENS (St. Hil. fl. bras. 1. p. 354.) stem tomentose; leaflets ovate, acutish, mucronulate, toothed, smoothish above, but pubescently-tomentose beneath, and rufescent. ♄ . ◡. S. Native of Brazil. Leaves ternate. Racemes solitary.

Rufescent Urvillea. Shrub cl.

5 U. FERRUGI'NEA (Lindl. bot. reg. 1077.) branches triquetrous, with the angles covered with long rufous hairs; leaflets cordate, toothed, somewhat lobed, villous; fruit villous. ♄ . ◡. S. Native of Brazil. Leaves ternate. Racemes solitary. Flowers white; anthers reddish.

Rusty Urvillea. Fl. May. Clt. 1823. Shrub cl.

Cult. Climbing shrubs hardly worth cultivating, except in botanic gardens. They will thrive well in a mixture of loam and peat, and large cuttings will strike root readily in sand under a hand-glass, in heat.

III. SERJA'NIA (in honour of Philip Serjeant, a French friar, and botanist). Plum. gen. 34. t. 35. D. C. prod. 1. p. 602.—Seriàna, Schum. act. soc. nat. hafn. 3. pt. 2. Cambess. in mem. mus. 18. p. 20.

LIN. SYST. *Octándria, Monogýnia.* Calyx 4-5 sepalled, 2 outer ones smallest. Petals 4, each furnished with a scale above the base, the 2 lower ones remote from the stamens, the scales of the lower petals ending in an inflexed appendage. Glands 2-4 on the disk at the base of the petals, the 2 upper ones usually abortive. Stamens 8, inserted in the receptacle, connate around the ovary at the base. Style trifid, with the segments longitudinally stigmatose inside. Capsule 3-winged, or composed of 3 carpels, adnate to the central, filiform axis. Carpels membranous, drawn out into a wing at the base, 1-celled and 1-seeded at the apex. Seeds fixed to the inner angle, with a very thick funicle, usually dilated into a small 2-lobed aril.—Climbing or twining-tendrilled shrubs, with ternate, biternate, rarely triternate, or impari-pinnate, stipulate leaves. Flowers white in racemes, with the common peduncle usually furnished with 2 opposite tendrils beneath the flowers.

* *Leaves ternate.*

1 S. SINUA'TA (Schum. l. c. p. 126. t. 12. f. 1.) leaves ternate; leaflets ovate-lanceolate, sinuately-toothed; wings of carpels dilated behind. ♄ . ◠. S. Native of the Caribbee Islands.—Plum. icon. ed. Burm. t. 113. f. 2. Paullínia Seriàna, Lin. spec. 524. Jacq. obs. 3. p. 11. t. 61. f. 2. Seriàna Plumeriàna, Spreng. syst. 1. p. 247.

Sinuated-leafletted Serjania. Shrub cl.

2 S. MO'LLIS (H. B. et Kunth, nov. gen. amer. 5. p. 108.) leaves ternate; leaflets ovate, crenate-serrated, rounded at the base, clothed with silky hairs above, but with silky tomentum beneath, terminal one 3-lobed; fruit hairy. ♄ . ◠. S. Native of Peru on the Andes between Querocotillo and Montan.

Soft Serjania. Shrub cl.

3 S. ACAPULCE'NSIS (H. B. et Kunth, l. c.) leaves ternate; leaflets oblong, rounded at the base, somewhat auricled on the sides, obsoletely crenated at the apex. ♄ . ◠. S. Native of Mexico between Acapulca and La Venta del Exido. Perhaps this plant is only a variety of *S. emarginàta.*

Acapulca Serjania. Shrub cl.

4 S. CUSPIDA'TA (St. Hil. fl. bras. 1. p. 356.) branches hairy; leaves ternate; leaflets ovate, somewhat 3-lobed, cordate, grossly and dentately serrated, cuspidate at the apex, densely clothed with silky pili; sepals 4; fruit pubescent. ♄ . ◡. S. Native of Brazil near Rio Janeiro.

Cuspidate-leaved Serjania. Shrub cl.

5 S. LANCEOLA'TA (St. Hil. fl. bras. 1. p. 356.) branches smoothish; leaves ternate; leaflets lanceolate, acuminated, dentately-serrated, smooth; sepals 5. ♄ . ◡. S. Native of Brazil in the province of Minas Geraes.

Lanceolate-leaved Serjania. Shrub cl.

6 S. EMARGINA'TA (H. B. et Kunth, l. c.) leaves rather biternate; leaflets quite entire, smooth, rounded at the apex and emarginate, with the sides somewhat auricled, intermediate one 3-lobed or 3-cut; fruit smooth. ♄ . ◠. S. Native of Mexico on the mountains.

Emarginate-leaved Serjania. Shrub cl.

* * *Leaves biternate.*

7 S. DIVARICA'TA (Schum. l. c. p. 126. t. 12. f. 2.) leaves biternate; leaflets ovate, quite entire, rather acute, shining, stalked; petioles naked; wings of carpels dilated and rounded behind. ♄ . ◠. S. Native of Jamaica in woods. Paullínia divaricàta, Swartz, fl. ind. occ. 2. p. 696.

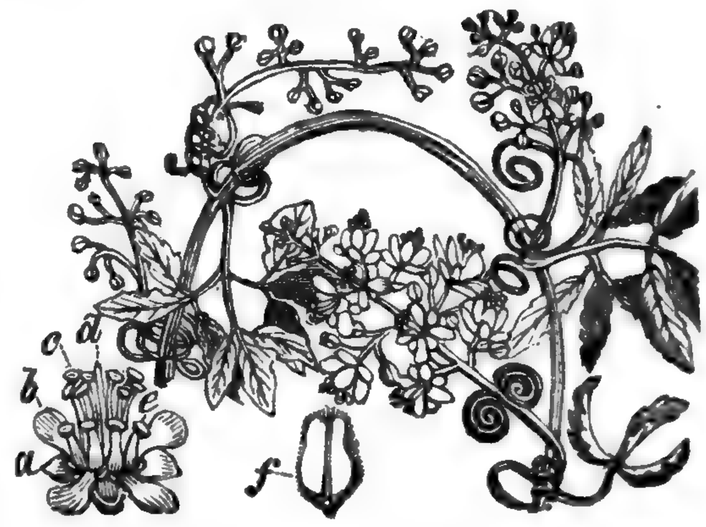
Divaricate Serjania. Clt. 1824. Shrub cl.

8 S. VELUTI'NA (St. Hil. fl. bras. 1. p. 357. t. 75.) branches tomentose; leaves biternate; leaflets ovate-oblong, grossly and deeply toothed, velvety above, and brownish tomentose beneath; sepals 5; fruit pubescent. ♄ . ◡. S. Native of Brazil in the province of Goyaz.

Velvety Serjania. Shrub cl.

9 S. CARACCASA'NA (Willd. spec. 3. p. 465.) leaves biternate; leaflets oblong, acute at both ends, very remotely toothed, very smooth; petioles naked; wings of carpels rounded behind. ♄ . ◠. S. Native of New Spain in Caraccas, as well as of Guadaloupe. Paullínia Caraccasàna, Jacq. hort. Schœnbr. 1. p. 52. t. 99.

FIG. 111.



Caraccas Serjania. Clt. 1816. Shrub cl.

10 S. GLABRA'TA (H. B. et Kunth, nov. gen. amer. 5. p. 110.) leaves biternate, smooth; leaflets elliptic-oblong, acuminated, cuneated at the base, coarsely crenate-serrated; petioles naked; wings of carpels rounded behind. ♄ . ◠. S. Native of the temperate parts of Peru. Very like the preceding species.

Smoothish Serjania. Shrub cl.

11 S. RACEMÒSA (Schum. l. c. p. 127. t. 12. f. 5.) leaves biternate; leaflets ovate, acute, profoundly serrated; petioles nearly naked; wings of carpels dilated behind, and somewhat sinuated in front. ♄ . ◠. S. Native of Vera Cruz.

Racemose-flowered Serjania. Shrub cl.

12 S. SPECTA'BILIS (Schum. l. c. p. 127. t. 12. f. 4.) leaves biternate; leaflets obovate, entire, terminal one retusely emarginate; petioles winged; wings of carpels dilated behind. ♄ . ◠. S. Native of South America.

Shewy Serjania. Shrub cl.

13 S. CLEMATIDIFÒLIA (St. Hil. fl. bras. 1. p. 361.) branches puberulous; leaves biternate; leaflets oblong, narrowed at both ends, acutish, deeply toothed, coriaceous, pale-green above and scabrous, pale and puberulous beneath; sepals 5; fruit densely-puberulous at the apex. ♄ . ◡. S. Native of Brazil.

Clematis-leaved Serjania. Shrub cl.

14 S. COMMU'NIS (St. Hil. fl. bras. 1. p. 362.) branches puberulous; leaves biternate; leaflets oblong, tapering to both ends, acute or bluntly mucronulate, deeply toothed, puberulous; sepals 4; fruit smooth. ♄. ◡. S. Native of Brazil in the province of Rio Janeiro.

Common Serjania. Shrub cl.

15 S. NÓXIA (St. Hil. fl. bras. 1. p. 363.) branches clothed with rusty tomentum; leaves biternate; leaflets elliptic-oblong, tapering to both ends, mucronulate, nearly entire, smoothish; sepals 4. ♄. ◡. S. Native of Brazil in the province of Rio Janeiro. This plant is hurtful to cattle.

Hurtful Serjania. Shrub cl.

16 S. DOMBEYA'NA (Juss. herb. St. Hil. fl. bras. 1. p. 364.) branches puberulous; leaves biternate; leaflets elliptic-oblong, tapering to both ends, acute or shortly acuminated, dentately serrated, smooth; sepals 5; fruit smooth. ♄. ◡. S. Native of Brazil near Rio Janeiro, and in the province of Minas Geraes.

Dombey's Serjania. Shrub cl.

17 S. PAUCIDENTA'TA (D. C. prod. 1. p. 603.) leaves biternate; leaflets oval, tapering to both ends, furnished on each side with 1 or 2 large teeth; petioles slightly winged; wings of carpels rounded and dilated behind. ♄. ◡. S. Native of Cayenne or French Guiana.

Few-toothed-leafletted Serjania. Shrub cl.

18 S. OSSA'NA (D. C. prod. 1. p. 603.) leaves biternate, smooth, dark-green, and somewhat shining above, but pale beneath; leaflets ovate, a little toothed at the apex, blunt, mucronulate; petioles naked; wings of carpels blunt behind. ♄. ◠. S. Native of Cuba near Havannah.

De la Ossa's Serjania. Shrub cl.

19 S. PUBE'SCENS (H. B. et Kunth, l. c.) branches villously pubescent; leaves biternate; leaflets ovate-oblong, obtuse, somewhat mucronated, quite entire or coarsely-crenated at the apex, smoothish above, and pubescent beneath. ♄. ◠. S. Native of South America in the province of Caraccas, in the valleys of Araguen.

Pubescent Serjania. Shrub cl.

20 S. MEXICA'NA (Willd. spec. 3. p. 465.) leaves biternate; leaflets obovate, entire or toothed, usually emarginate; petioles slightly winged; stem prickly; racemes compound; wings of carpels rounded and somewhat dilated. ♄. ◠? S. Native of Mexico. Paullínia Mexicàna, Lin. spec. 527. Schum. l. c. p. 124. t. 11. f. 3.

Mexican Serjania. Clt. 1823. Shrub cl.

21 S. ANGUSTIFÒLIA (Willd. spec. 3. p. 466.) leaves biternate; leaflets linear-lanceolate, quite entire, acute; petioles winged. ♄. ◡. S. Native of South America.—Plum. icon. ed. Burm. t. 113. f. 1. Paullínia Mexicàna, Jacq. obs. 3. p. 11. t. 61. f. 5. a leaf only.

Narrow-leaved Serjania. Shrub cl.

22 S. E'LEGANS (St. Hil. fl. bras. 1. p. 358.) branches puberulous; leaves biternate; leaflets oblong or oblong-lanceolate, acute, quite entire, rather scabrous; sepals 5; fruit smooth. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers rose-coloured?

Var. β; leaves full of pellucid dots; leaflets narrower, long-acuminated. Flowers whitish-green.

Elegant Serjania. Shrub cl.

23 S. RETICULA'TA (St. Hil. fl. bras. 1. p. 359.) branches smooth; leaves biternate; leaflets oblong or elliptic-oblong, acuminated, dentately-serrated at the apex, reticulately-veined, quite smooth; sepals 5. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Reticulated-leaved Serjania. Shrub cl.

24 S. GRANDIFLÒRA (St. Hil. fl. bras. 1. p. 360.) branches smooth; leaves biternate; leaflets elliptic-oblong, acuminated, obsoletely-toothed, smooth; sepals 4. ♄. ◡. S. Native of Brazil in the province of Rio Janeiro. Racemes forming a panicle at the tops of the branches.

Great-flowered Serjania. Shrub cl.

25 S. PANICULA'TA (H. B. et Kunth, nov. gen. amer. 5. p. 111. t. 441.) branches pubescent; leaves biternate; leaflets ovate-elliptical, acuminated, coarsely crenated, smooth, but hairy at the origin of the veins beneath; racemes panicled; fruit pubescent at the apex. ♄. ◡. S. Native of South America in the province of Caraccas in hot places. This plant is very like *S. Caraccasàna*.

Panicled-flowered Serjania. Shrub cl.

26 S. LUPULI'NA (Schum. l. c. p. 127. t. 12. f. 5.) leaves biternate; leaflets crenated, rusty beneath, terminal one somewhat rhomboid, lateral ones ovate; petioles slightly winged; wings of carpels semi-oval. ♄. ◠. S. Native of South America.

Wolf Serjania. Shrub cl.

27 S. LU'CIDA (Schum. l. c. p. 128.) leaves biternate; leaflets ovate, acute, serrated; petioles almost naked; wings of carpels half-oval. ♄. ◠? S. Native of Santa Cruz?

Shining-leaved Serjania. Shrub cl.

28 S. MULTIFLÒRA (St. Hil. fl. bras. 1. p. 365.) branches smoothish; leaves biternate; leaflets oblong, rather cuneated, acuminate, usually mucronulate, grossly and deeply toothed, smooth; sepals 5; fruit hairy at the apex. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Many-flowered Serjania. Shrub cl.

29 S. MERIDIONA'LIS (St. Hil. fl. bras. 1. p. 366. t. 76.) branches smooth; leaves biternate; leaflets tapering to both ends, acute, and usually mucronate, smooth and dentately serrated, lateral ones oblong, terminal ones ovate, decurrent down the petiole; sepals 5; fruit smooth. ♄. ◡. S. Native of Brazil on the banks of the river Uruguay.

Meridional Serjania. Shrub cl.

30 S. LETHA'LIS (St. Hil. fl. bras. 1. p. 367. pl. rem. bras. p. 235.) branches smooth; leaves biternate; leaflets lanceolate-elliptic, tapering to both ends, quite smooth, shining above; sepals 5; fruit villous at the apex, and smooth at the base. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. This plant is very poisonous.

Poisonous Serjania. Shrub cl.

31 S. OXYPE'TALA (H. B. et Kunth, l. c.) branches smooth; leaves biternate; leaflets ovate-oblong, acuminately mucronate, remotely serrated, smooth, upper ones trifid; fruit smoothish. ♄. ◠. S. Native of Peru on the Andes.

Sharp-petalled Serjania. Shrub cl.

32 S. DU'BIA (Spreng. syst. 2. p. 247.) leaves biternate; leaflets obovate-oblong, shining, mucronately-toothed; petioles awl-shaped; racemes compound. ♄. ◠. S. Native of Porto-Rico.

Doubtful Serjania. Shrub cl.

33 S. HIRSU'TA (St. Hil. fl. bras. 1. p. 367.) branches hairy; leaves biternate; leaflets oblong, tapering to both ends, acute, mucronulate, deeply-toothed, hairy; sepals 4; fruit puberulous. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Hairy Serjania. Shrub cl.

34 S. LARUOTTEA'NA (St. Hil. fl. bras. 1. p. 368.) branches puberulous; leaves biternate; leaflets oblong, tapering to both ends, acute, serrated, smooth; sepals 4; fruit puberulous. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Laruott's Serjania. Shrub cl.

35 S. PALUDÒSA (St. Hil. fl. bras. 1. p. 368.) branches tomentose; leaves biternate or impari-pinnate; leaflets unequally toothed, puberulous above, and tomentose beneath, terminal one elliptic, lower ones oblong; sepals 5; fruit hairy above, and

pubescent beneath. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Marsh Serjania. Shrub cl.

* * * *Leaves triternate.*

36 S. TRITERNA'TA (Willd. spec. 3. p. 466.) leaves triternate; leaflets ovate, obtuse, repand; petioles winged; racemes panicled; wings of carpels rounded and dilated. ♄. ◡. S. Native of South America.—Plum. icon. ed. Burm. t. 112. Paullínia triternàta, Lin. mant. 236. Jacq. amer. p. 110. t. 180. f. 32. pict. p. 56. t. 260. f. 29. Paullínia polyphýlla, Lin. spec. 525. Jacq. obs. 3. p. 11. t. 61. f. 10? and f. 11.

Triternate-leaved Serjania or Supple-Jack. Fl. June, July. Clt. 1739. Shrub cl.

* * * * *Leaves impari-pinnate.*

37 S. PARVIFLÒRA (H. B. et Kunth, nov. gen. amer. 5. p. 113.) leaves pinnate, with 3 pairs of leaflets and an odd one; the lower pair trifoliate, ovate-oblong, crenate-serrated, sharply-mucronate at the apex, smooth above, puberulous beneath; fruit smooth. ♄. ◠. S. Native of South America on the banks of the river Amazon.

Small-flowered Serjania. Shrub cl.

38 S. CAMBESSEDIA'NA (Schlecht. et Cham. in Linnæa. 5. p. 214.) stem smooth, 6-furrowed; leaves bipinnate or somewhat tripinnate, 4 pairs, upper pinnæ ternate; leaflets nearly sessile, tapering into the petiole, mucronate, acuminate, grossly and unequally toothed, rather pilose on the nerves beneath, and with hairs in the axils of the veins; panicle raceme-formed, destitute of tendrils, pubescent; branches short, usually 5-flowered; flowers pedicellate, furnished with bracteas; wings of fruit dilated. ♄. ◡. S. Native of Mexico.

Cambessedes Serjania. Shrub cl.

39 S. HETEROPHY'LLA (D. C. prod. 1. p. 604.) lower leaves pinnate, with 2 pairs of leaflets, upper ones biternate; leaflets ovate, somewhat toothed, smooth, terminal one cuneated at the base; petioles subalate at the apex; racemes stalked; wings of carpels rounded behind. ♄. ◠. S. Native of St. Martha.

Variable-leaved Serjania. Shrub cl.

Cult. Climbing shrubs hardly worth cultivating unless in general collections. They will thrive well in a mixture of loam and peat. Large cuttings root more freely than small ones. These should be planted in a pot of sand and placed under a hand-glass, in a moderate heat.

IV. PAULLI'NIA (in honour of Simon Paulli, a Danish naturalist, author of Quadripartitum Botanicum; died in 1680). Schum. act. soc. hist. nat. hafn. 3. pt. 2. mss. ann. mus. 4. p. 340. D. C. prod. 1. p. 604. Cambess. in mem. mus. 18. p. 22. —Carùru, Plum. gen. p. 34. t. 35. Paullínia, spec. Lin.—Semarillària, Ruiz et Pav. fl. peru, vol. 4.

Lin. syst. *Octándria, Monogýnia.* Calyx of 4-5 sepals, 2 outer ones smallest. Petals 4, each furnished with a scale on the inside above the base, the 2 lower ones remote from the stamens, the scales of the lower petals ending in an inflexed appendage. Glands 2-4 on the disk, opposite the petals, the 2 superior ones usually abortive. Stamens 8, inserted in the receptacle and connate around the ovary at the base. Style trifid, with the segments longitudinally stigmatose on the inside. Capsule pear-shaped, trigonal, usually with 3 short wings at the apex, 3-celled, 3-valved; dissepiments membranous, adnate to the central axis. Seeds fixed to the inner angle at the base of the cells, half covered by a 2-lobed aril.—Climbing or twining-tendrilled shrubs, with ternate, biternate, triternate, pinnate, bipinnate, or decompound stipulate leaves, and axillary racemes of flowers, with the common peduncle usually furnished with 2 opposite twisted tendrils below the flowers. Flowers white.

* *Capsules pear-shaped, with wingless valves. Leaves ternate.*

1 P. TURBACE'NSIS (H. B. et Kunth, nov. gen. amer. 5. p. 114.) capsules obtuse, densely clothed with hairs; leaflets acuminated, coarsely serrate-toothed, smooth, shining; petioles naked. ♄. ◠. S. Native of New Granada in temperate places at Turbaco.

Turbaco Paullinia. Shrub cl.

2 P. CURU'RU (Lin. spec. ed. 1. p. 365.) capsules obtuse; leaflets oblong, serrate-toothed, somewhat acuminated; petioles winged. ♄. ◠. S. Native of the Antilles.—Plum. ed. Burm. t. 111. f. 2. Jacq. obs. 3. p. 11. t. 61. f. 4. *Cururu* is a Caribbean name.

Cururu Paullinia. Clt. 1824. Shrub cl.

3 P. NI'TIDA (H. B. et Kunth, l. c.) capsule pear-shaped; leaflets oblong, rather acuminated, coarsely serrate-crenate, smooth, shining; petioles naked. ♄. ◠. S. Native of South America on the banks of the river Orinoco, and in Peru. Semarillària nítida, Ruiz et Pav. fl. per. 4. t. 339.

Shining-leaved Paullinia. Shrub cl.

4 P. RIPA'RIA (H. B. et Kunth, l. c.) leaflets oblong, acute, coarsely-serrated, shining, smooth; petioles winged; racemes about equal in length with the leaves. ♄. ◡. S. Native of South America on the banks of the river Magdalena.

River-bank Paullinia. Shrub cl.

† *Capsules unknown; leaves ternate.*

5 P. NODÒSA (Jacq. enum. 35. obs. t. 61. f. 3.) petioles naked; leaflets ovate, a little toothed, smooth, middle one obovate; racemes knotted or thickened. ♄. ◠. S. Native of the Antilles.

Knotted-racemed Paullinia. Shrub cl.

6 P. DENSIFLÒRA (Smith, in Rees' cycl. no. 3.) petioles winged; leaflets obscurely serrated; racemes aggregate, much-branched, 4-times shorter than the petioles. ♄. ◠. S. Native of New Granada.

Dense-flowered Paullinia. Shrub cl.

* * *Capsules pear-shaped, wingless. Leaves pinnate.*

7 P. PINNA'TA (Lin. spec. ed. 1. p. 366.) young capsules with 3 tubercles at the apex; leaflets 5, ovate-lanceolate, sessile, crenated; petioles winged. ♄. ◠. S. Native of Brazil, Mexico, Guiana, Antilles, and equinoctial Africa. Jacq. obs. 3. p. 12. t. 62. f. 12.—Plum. ed. Burm. 76. t. 91.

Pinnate-leaved Paullinia. Fl. July, Sept. Clt. 1752. Sh. cl.

8 P. MACROPHY'LLA (H. B. et Kunth, l. c.) leaflets 5, oblong, obtuse, remotely and obsoletely toothed, membranaceous, smooth, but with the nerve and veins hairy; petioles and rachis winged. ♄. ◠. S. Native of South America on the banks of the river Magdalena.

Long-leaved Paullinia. Shrub cl.

9 P. ALA'TA; leaflets 5, oblong, distantly and deeply toothed, with winged petioles; branches qnadrangular; tendrils axillary, twisted and bifid; racemes short, crowded on the old wood. ♄. ◡. S. Native of Peru. Semarillària alàta, Ruiz et Pav. fl. per. 4. t. 340.

Winged-petioled Paullinia. Shrub cl.

10 P. CARPOPÒDEA (St. Hil. fl. bras. 1. p. 376. t. 78. B.) leaves with 3 pairs of oblong or oblong-lanceolate leaflets, which are narrowed at the base and puberulous beneath, acuminated, and mucronulate; lower pair trifoliate; petioles and rachis naked; capsule rather clavate, wingless. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Fruit-footed Paullinia. Shrub cl.

11 P. AFFÌNIS (St. Hil. fl. bras. 1. p. 377. t. 78. A.) leaves with 2-3 pairs of oblong or oblong-lanceolate, acuminated, mucronulate leaflets, which are narrowed at the base, and silky tomentose beneath, lower pair trifolate; petioles naked; capsule

subclavate, wingless. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Allied Paullinia. Sh. cl.

12 P. E'LEGANS (St. Hil. fl. bras. 1. p. 370.) leaves with 2 pairs of toothed, smooth leaflets; petioles and rachis naked; capsule pear-shaped, 3-lobed, wingless. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers greenish-white.

Elegant Paullinia. Shrub cl.

13 P. RUBIGINÒSA (St. Hil. fl. bras. 1. p. 371.) leaves with 2 pairs of oblong, acuminated, sharply serrated leaflets, which are rusty-tomentose on the nerves beneath; petioles and rachis naked; capsule obovate or triquetrous, wingless. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Rusted Paullinia. Shrub cl.

* * * *Capsules pear-shaped with winged and keeled valves. Leaves pinnate.*

14 P. TETRAGO'NA (Aubl. guian. 1. p. 355.) capsules 3-keeled, 3-horned; leaflets 5, ovate, rather serrated, acute, smooth; petioles naked; stem tetragonal. ♄. ◠. S. Native of Cayenne. Like *P. pinnàta*.

Tetragonal-stemmed Paullinia. Clt. 1825. Shrub cl.

15 P. VESPERTÍLIO (Swartz, fl. ind. occ. 2. p. 695.) capsules winged at the apex; wings horizontal; leaflets 5, ovate, remotely toothed, smooth; petioles naked. ♄. ◠. S. Native of the island of St. Christopher. Schum. act. soc. hist. nat. hafn. 3. p. 122. t. 11. f. 1.

Bat-capsuled Paullinia. Clt. 1823. Shrub cl.

16 P. AFRICA'NA; leaflets 5, ovate-lanceolate, acuminate, distantly toothed; petioles winged; racemes elongated, axillary; flowers nearly sessile. ♄. ◡. S. Native of Sierra Leone. Capsules winged?

African Paullinia. Shrub cl.

17 P. ACUTA'NGULA (Pers. ench. 1. p. 443.) plant hairy; capsules obovate, triangularly winged at the apex; leaflets 5, oblong-ovate or obovate, acuminated, serrate-toothed; racemes axillary, with 2 hooked tendrils at the base of each. ♄. ◡. S. Native of Peru in groves. Semarillària acutángula, Ruiz et Pav. fl. per. syst. p. 93. fl. per. 4. t. 337.

Acute-angled-capsuled Paullinia. Shrub cl.

18 P. AUSTRA'LIS (St. Hil. fl. bras. 1. p. 375. pl. rem. bras. p. 236. t. 24. B.) leaves with 3 pairs of oblong-cuneated, coarsely serrated, smoothish leaflets; lower pair trifoliate; rachis winged; common petiole naked; capsule pear-shaped, obtuse, winged. ♄. ◡. S. Native of Brazil on the banks of the Uruguay.

Southern Paullinia. Shrub cl.

19 P. MELIÆFÒLIA (Juss. ann. 4. p. 347. t. 66. f. 2.) capsules with 3 small wings at the apex, cohering with the style; leaves with 3 pairs of oblong-lanceolate, remotely toothed leaflets, pubescent beneath, lower pair trifoliate. ♄. ◠. S. Native of Brazil. Petioles naked; rachis winged. Shrub sarmentose, 6-7 feet.

Melia-leaved Paullinia. Clt. 1819. Shrub cl.

20 P. GRANDIFLÒRA (St. Hil. fl. bras. 1. p. 372.) leaves with 2 pairs of ovate, grossly-toothed, smooth leaflets; petioles and rachis winged. ♄. ◡. S. Native of Brazil in the province of Minas Geraes.

Great-flowered Paullinia. Shrub cl.

21 P. MICRA'NTHA (St. Hil. fl. bras. 1. p. 373.) leaves with 3 pairs of oblong-cuneated or subcuneated, bluntish, toothed, smoothish leaflets, lower pair trifoliate. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Petioles naked. Rachis winged. Fruit pear-shaped, 3-lobed, with 3 short wings.

Small-flowered Paullinia. Shrub cl.

22 P. SERI'CEA (St. Hil. fl. bras. 1. p. 374. t. 77. A.) leaves with 4-5 pairs of oblong-lanceolate, acuminated, toothed leaflets, which are smoothish above and silky-tomentose beneath, 2 or 4 of the lower ones trifoliate; petioles naked; rachis winged; capsule pear-shaped, with 3 short wings. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Calyx purple.

Silky Paullinia. Shrub cl.

* * * * *Capsules ovate, obovate or roundish. Leaves pinnate.*

23 P. OBOVA'TA (Pers. ench. 1. p. 443.) capsules obovate; leaflets 5, lanceolate, distantly serrated. ♄. ◠. S. Native of Peru in groves. Semarillària obovàta, Ruiz et Pav. fl. per. syst. 1. p. 93. fl. per. 4. t. 338.

Obovate-capsuled Paullinia. Shrub cl.

24 P. TOMENTÒSA (Jacq. amer. 37. obs. 3. t. 61. f. 13.) capsules obovate, and are as well as the leaves tomentose; leaflets 5, sessile, ovate, rhomboid, repand, obtuse; petioles marginate. ♄. ◠. S. Native of the Antilles. Old leaves almost smooth.

Tomentose Paullinia. Shrub cl.

25 P. SENEGALE'NSIS (Juss. ann. 4. p. 348.) capsules ovate, bluntly trigonal; leaflets 5, sessile, ovate, remotely crenated, the odd one largest; petioles marginate; stem angular, somewhat tomentose. ♄. ◠. S. Native of Guinea, particularly in Senegal.

Senegal Paullinia. Clt. 1822. Shrub cl.

26 P. CUPA'NA (H. B. et Kunth, nov. gen. amer. 5. p. 117.) capsules ovate, acute; leaflets 5, ovate-oblong, acuminated, coarsely crenate-serrated, coriaceous, smooth, but hairy on the nerves and veins beneath. ♄. ◠. S. Native of South America on the banks of the river Orinoco, and of Trinidad.

Cupana's Paullinia. Clt. 1818. Shrub cl.

27 P. SPHÆROCA'RPA (Rich. in Juss. ann. 4. p. 348.) capsules spherical, smooth; leaflets 5, almost sessile, ovate, smooth, remotely crenated, each ending in a blunt point. ♄. ◠. S. Native of Guinea.

Spherical-capsuled Paullinia. Clt. 1824. Shrub cl.

28 P. SUBROTU'NDA (Pers. ench. 1. p. 443.) capsules large, roundish; leaflets 5, oblong-obovate, serrated above. ♄. ◡. S. Native of Peru in groves. Semarillària subrotúnda, Ruiz et Pav. fl. per. syst. p. 92. fl. per. 4. t. 336. The aril which envelops the seeds is eatable.

Roundish-fruited Paullinia. Shrub cl.

29 P. PTERÓPODA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 605.) capsules somewhat spherical, 3-furrowed, and are as well as the leaves villous; leaflets 5, ovate, coarsely toothed, terminal one cuneated; petioles marginate. ♄. ◡. S. Native of Mexico.

Winged-petioled Paullinia. Shrub cl.

† *Capsules unknown. Leaves pinnate.*

30 P. CAULIFLÒRA (Jacq. icon. rar. 3. p. 458.) leaves pinnate, lower leaflets ternate; petioles naked at the base, but marginate at the top; flowers in capitate corymbs, axillary, and terminal. ♄. ◠. S. Native of Caraccas in South America.

Stem-flowered Paullinia. Fl. June, Aug. Clt. 1822. Sh. cl.

31 P.? JAPÓNICA (Thunb. fl. jap. 170.) leaflets 5, on marginate stalks, lower ones almost sessile, 3-lobed; stem herbaceous, unarmed. ♃. ◠. G. Native of Japan.

Japan Paullinia. Pl. cl.

32 P. CUPANIÆFÒLIA (Rich. in Juss. ann. mus. 4. p. 349.) leaflets 5, sessile, ovate-oblong, remotely crenated, very smooth; petioles naked at the base, but marginate between the leaflets. ♄. ◠. S. Native of Guiana in woods.

Cupania-leaved Paullinia. Shrub cl.

33 P. CONNARIFÒLIA (Rich. in Juss. l. c.) leaflets 5, sessile, coriaceous, ovate, bluntly mucronate, almost entire, smooth, but are rusty as well as the branches; petioles naked; peduncles

destitute of tendrils. ♄. ⌒. S. Native of Guiana on the borders of woods.

Connarus-leaved Paullinia. Shrub cl.

34 P. fibula'ta (Rich. in Juss. l. c.) leaflets 5, ovate, somewhat coriaceous, rather toothletted, and somewhat tomentose beneath, and are rusty as well as the branches; petioles naked; peduncles with thickened, clasp-like, floriferous tendrils. ♄. ⌒. S. Native of Guiana on the borders of woods, where it is called, on account of the tendrils, *Patte de chauve-souris*.

Clasp-peduncled Paullinia. Shrub cl.

35 P. rufe'scens (Rich. in Juss. l. c.). leaflets 5, on very short stalks, ovate-lanceolate, remotely crenated, clothed with rusty tomentum beneath, blackish-green above; petioles naked; branches rusty, rather angular. ♄. ⌒. S. Native of Guiana on the borders of woods. The peduncles are sometimes furnished with tendrils, and sometimes without.

Rufescent Paullinia. Shrub cl.

36 P. ingæfòlia (Rich. in Juss. l. c.) leaflets 7, coriaceous, smooth, lower ones trifoliate; petioles naked at the base but marginate at the apex; branches striated and scabrous from dots. ♄. ⌒. S. Native of Guiana in woods near the confines of the river Amazon. Peduncles sometimes branched-panicled, sometimes simple, cirrhose and floriferous beyond the middle.

Inga-leaved Paullinia. Shrub cl.

37 P. multiflòra (St. Hil. fl. bras. 1. p. 379.) leaves with 2-3 pairs of elliptic-oblong, mucronulate, smoothish leaflets, which taper to both ends, lower pair trifoliate; petioles and rachis winged ♄. ◡. S. Native of Brazil in the province of St. Paul. Fruit not seen.

Many-flowered Paullinia. Shrub cl.

* * * * * *Leaves biternate.*

38 P. vetulìna (D. C. prod. 1. p. 605.) the whole plant is clothed with velvety tomentum; capsules pear-shaped, 3-winged; leaflets ovate-lanceolate, acuminated at both ends, coarsely toothed; petioles naked. ♄. ⌒. S. Native of New Granada in the province of St. Martha.

Velvety Paullinia. Shrub cl.

39 P. Curassa'vica (Lin. spec. ed. 1. p. 366.) capsules ovate, with 3 semiobcordate valves; leaflets oval, crenated, odd one cuneated at the base; intermediate petiole marginate. ♄. ⌒. S. Native of Curassoa, and near Caraccas. Jacq. obs. 3. p. 12. t. 61. f. 8.—Plum. ed. Burm. t. 111. f. 2.

Curassoa Paullinia. Fl. Aug. Clt. 1739. Shrub cl.

40 P. enneaphy'lla (Ruiz et Pav. fl. per. 4. t. 337. under *Semarillària*,) leaves biternate, toothed, acuminated; valves of capsule winged on the back at the apex; racemes axillary, with 2 hooked tendrils at the base of each. ♄. ⌒. S. Native of Peru.

Nine-leaved Paullinia. Shrub cl.

41 P. Barbade'nsis (Jacq. enum. 36. obs. 2. p. 12. t. 61. f. 9.) capsules ovate, rather villous, with semiovate valves; leaflets oval, quite entire, and serrated, coriaceous; petioles somewhat marginate. ♄. ⌒. S. Native of Barbadoes and the Antilles.

Barbadoes Paullinia. Clt. 1786. Shrub cl.

42 P. Carthagene'nsis (Jacq. obs. 3. p. 11. t. 61. f. 6.) leaflets ovate, oblong, sinuated; petioles marginate; stem unarmed. ♄. ⌒. S. Native of South America at Carthagena.

Carthagena Paullinia. Clt. 1818. Shrub cl.

43 P.? Caribæ'a (Jacq. obs. 3. t. 62. f. 7.) leaflets oval, a little toothed at the apex, middle ones obovate-cuneated, petioles marginate; branches prickly. ♄. ⌒. S. Native of the Caribbee islands, and in the province of Caraccas? H. B. et Kunth, nov. gen. amer. 5. p. 118. This is probably a distinct species.

Caribbean Paullinia. Clt. 1818. Shrub cl.

44 P. pube'scens (H. B. et Kunth, l. c.) leaflets coarsely crenate-serrated, membranaceous, smooth, clothed beneath with golden-brownish tomentum; terminal leaflets ovate-oblong, acuminated; partial petioles somewhat marginated. ♄. ⌒. S. Native of South America on the banks of the river Amazon.

Pubescent Paullinia. Clt. 1820. Shrub cl.

45 P. mòllis (H. B. et Kunth, l. c.) leaflets coarsely crenate-serrated, membranous, with the nerves and veins on the upper surface hairy, but clothed beneath with soft hairy tomentum; terminal leaflets roundish-ovate, acute; petioles naked. ♄? ⌒. S. Native of South America on the banks of the river Magdalena.

Soft Paullinia. Shrub cl.

* * * * * * *Leaves triternate.*

46 P. triterna'ta (H. B. et Kunth, l. c.) leaflets 3-4-toothed, coriaceous, smooth, shining, terminal ones obovate; partial petioles and rachis winged. ♄. ⌒. S. Native of South America on the banks of the river Orinoco.

Triternate-leaved Paullinia. Shrub cl.

* * * * * * * *Leaves bipinnate or supra-decompound.*

47 P. thalictrifòlia (Juss. ann. mus. 4. p. 347. t. 66. f. 1.) capsules pear-shaped, 3-winged at the base; wings broadest at the top, divaricate; leaves somewhat tripinnate, upper ones simple; leaflets ovate, small, entire, or a little toothed. ♄. ⌒. S. Native of Brazil and St. Domingo.

Meadow-rue-leaved Paullinia. Shrub cl.

48 P. polyphy'lla (Schum. in act. soc. nat. hafn. 3. pt. 2. p. 462.) capsule with obovate valves; leaves supra-decompound; leaflets ovate-cuneated, crenated at the apex, smooth above, villous beneath as well as the petioles. ♄. ⌒. S. Native of South America.—Pluk. alm. t. 168. f. 5.? This plant should not be confounded with *Serjània triternàta*.

Many-leaved Paullinia. Shrub cl.

49 P. diversifòlia (Jacq. obs. 3. p. 12. t. 62. f. 14.) leaves supra-decompound, lower ones pinnate, the rest ternate; petioles marginate; leaflets ovate, smooth, a little toothed. ♄. ⌒. S. Native of the Antilles. This plant is probably a species of *Serjània* allied to *S. triternàta*, but perhaps the same as *Serjània heterophýlla*.

Diverse-leaved Paullinia. Shrub cl.

50 P. híspida (Jacq. hort. schoenbr. 3. t. 268.) leaves bipinnate at the bottom, and pinnate at the apex; leaflets lanceolate, acuminated, somewhat serrated; branches angular, hispid; stipulas ovate, ciliated; racemes aggregate. ♄. ⌒. S. Native of South America at Caraccas and in the island of Trinidad.

Hispid-leaved Paullinia. Clt. 1825. Shrub cl.

51 P. bipinna'ta (Poir. dict. 4. p. 99.) leaves bipinnate; leaflets ovate, nearly sessile, somewhat crenated at the apex; petioles naked and are as well as the branches somewhat tomentose; capsules winged, 2-lobed at the apex. ♄. ⌒. S. Native of Brazil at Rio Janeiro. This is probably a species of *Serjània*.

Bipinnate-leaved Paullinia. Clt. 1816. Shrub cl.

Cult. *Paullínia* is a genus of trifling, climbing shrubs, not worth cultivating, except in general collections. A mixture of loam and peat suits them well, and large cuttings will root in sand under a hand-glass, in heat.

V. ENOU'REA (*Eymara-enourou* is the name of the shrub in Guiana). Aubl. guian. 1. p. 588. t. 235. D. C. prod. 1. p. 618.

Lin. syst. *Monadélphia, Dodecándria.* Calyx 4-5-parted, 2 of the lobes are larger than the rest. Petals 4, inserted in the bottom of the calyx, 2 of which are larger than the rest, each fur-

nished with a petal-like scale on the inside at the claw, with 2 glands at the base of each of the larger petals on the disk. Stamens 13, inserted in the receptacle, unequal, connate at the base, somewhat leaning to one side. Ovary roundish. Style none. Stigmas 3. Capsules spherical, 1-celled, 3-valved, 1-seeded. Seed erect, clothed with farinaceous pulp.—A climbing shrub with impari-pinnate leaves and axillary tendrils. Racemes of flowers panicled. This shrub should perhaps be placed among the *Terebinthàceæ*, on account of the petals being perigynous, as well as from the plant abounding in milky juice.

1 E. CAPREOLA'TA (Aubl. guian. 1. t. 235.) leaflets 5, coriaceous, covered with rusty hairs beneath. ♄. ⌒. S. Native of Guiana in the small island formed by the river Sinemari. Flowers small, white, in clusters.

Climbing Enourea. Shrub cl.

Cult. A mixture of loam and sand will suit this plant, and large cuttings will root in sand under a hand-glass, in heat.

** *Upright trees and shrubs, with pinnate, trifoliate, rarely simple leaves.*

VI. TOULI'CIA (*Toulici* is the name of the tree in Guiana). Aubl. guian. 1. p. 359. t. 140. D. C. prod. 1. p. 612.—Ponæ'a, Schreb. gen. no. 682.

LIN. SYST. *Octándria, Monogýnia.* Calyx 5-parted. Petals 5, each furnished on the inside at the base with a long, 2-parted, pilose appendage. Disk occupying the bottom of the calyx, 5-lobed, 2 lower lobes largest. Stamens 8, inserted in the disk. Style short, trifid. Fruit 3-winged, composed of 3 carpels, adnate to the central filiform axis. Carpels drawn out into a wing at the base, but 1-celled, 1-seeded at the apex. Seeds fixed to the inner angle.—A tree, with abruptly pinnate leaves; leaflets opposite. Racemes of flowers forming a large terminal panicle.

1 T. GUIANE'NSIS (Aubl. guian. l. c. Lam. ill. t. 317.). ♄. S. Native of Guiana in woods. Ponæ'a saponarioìdes, Willd. spec. 2. p. 470. Leaves abruptly pinnate, with 8 pairs of opposite lanceolate leaflets, which are broadest at the base. Flowers small, white, disposed in terminal racemose panicles.

Guiana Toulicia. Tree 20 feet.

Cult. This tree will succeed well in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

VII. SCHMIDE'LIA (in honour of Casimer Christopher Schmiedel, once a professor at Erlange, who wrote several botanical dissertations between 1751 and 1793). Lin. mant. 51. D. C. prod. 1. p. 610.—Ornítrophe, Juss. gen. 247. Pers. ench. 1. p. 412.—Allophýllus, Lin. gen. no. 476.—Toxicodéndron, Gært. fruct. 1. t. 44. but not of Tourn.—Aporètica, Forst. gen. no. 66. D. C. prod. 1610.—Gemélla, Lour. cochin. 762.

LIN. SYST. *Octándria, Monogýnia.* Calyx 4-parted, unequal. Petals 4, the fifth or superior one deficient, and its seat vacant; naked on the inside, or usually furnished with a scale above the claw. Disk incomplete, 4-glanded; glands opposite the petals. Stamens 8, inserted in the receptacle, and connate around the ovary at the base. Style immersed between the lobes of the ovary, usually seated on the axis, 2-3-cleft, with the segments longitudinally stigmatose inside. Fruit indehiscent, 1-2 rarely 3-lobed; lobes roundish, fleshy, or dry, 1-seeded. Seeds arillate or exarillate. Trees or shrubs, usually with trifoliate, rarely with simple exstipulate leaves and racemose white flowers. Racemes axillary.

* *Leaves trifoliate.*

1 S.? MACROPHY'LLA (D. C. prod. 1. p. 610.) leaflets stalked, ovate-acuminated, quite entire, coriaceous, rather pubescent beneath; racemes compound. ♄. S. Native of Cayenne. Ornítrophe macrophýlla, Poir. dict. 8. p. 263. Kunth thinks this a species of *Cupània*.

Long-leaved Schmidelia. Tree 20 feet.

2 S. INTEGRIFÒLIA (D. C. prod. 1. p. 610.) leaflets stalked, ovate-lanceolate, quite entire, smooth; racemes almost simple. ♄. S. Native of Bourbon. Ornítrophe integrifòlia, Willd. spec. 2. p. 322. Lam. ill. t. 309. f. 1. Merulària, Comm.

Entire-leaved Schmidelia. Clt. 1804. Tree 16 feet.

3 S. SERRA'TA (D. C. prod. 1. p. 610.) leaves scabrous; leaflets stalked, ovate, acuminated, serrated; racemes simple. ♄. S. Native of Coromandel, frequent on the mountains. Ornítrophe serràta, Roxb. cor. 1. p. 44. t. 61. Flowers small, white, polygamous. The fruit is small and red, and is eaten when ripe by the natives. The root is astringent, and is employed by the native physicians for diarrhœa.

Serrated-leaved Schmidelia. Clt. 1804. Tree 12 feet.

4 S. PUBE'RULA (St. Hil. fl. bras. 1. p. 382.) leaves trifoliate; leaflets on short petioles, elliptic, or elliptic-obovate, acute, serrated, puberulous on the nerves; racemes spike-formed, axillary. ♄. S. Native of Brazil near Rio Janeiro. Flowers greenish.

Puberulous Schmidelia. Shrub 3 to 6 feet.

5 S. LE'VIS (St. Hil. fl. bras. 1. p. 382.) leaves trifoliate; leaflets stalked, elliptic-oblong, acuminate, dentately serrated, smooth; racemes nearly simple. ♄. S. Native of Brazil near Sebastianople.

Smooth Schmidelia. Shrub.

6 S. CÓBBE (D. C. prod. 1. p. 610.) leaflets stalked, obovate, acute, serrated, pubescent beneath; racemes simple, with a tomentose peduncle. ♄. S. Native of Ceylon. Rhûs Cóbbe, Lin. spec. 382. Ornítrophe Cóbbe, Willd. spec. 2. p. 322. Toxicodéndron Cóbbe, Gært. fruct. 1. p. 207. t. 44. Toxicodéndron arbòreum, Mill. dict. no. 8. Berries small, black, poisonous. *Cobbe* is the name of the tree in Ceylon.

Cobbe Schmidelia. Tree 12 feet.

7 S. PANÍGERA; leaflets stalked, ovate, acute, serrated, tomentose beneath, as well as being bearded at the origin of the nerves; racemes simple, with a tomentose peduncle. ♄. S. Native of New Caledonia. Ornítrophe panígera, Lab. nov. caled. t. 52. Petals unguiculate. Stigmas 2.

Cloth-bearing Schmidelia. Tree 30 feet.

8 S. VITICIFÒLIA (H. B. et Kunth, nov. gen. 7. p. 215.) leaves ternate; leaflets stalked, acute at both ends, remotely crenate-serrated, smooth above, pubescent beneath, elliptic-oblong, lateral ones unequal-sided; racemes panicled. ♄. S. Native of Cuba near Havannah.

Vitex-leaved Schmidelia. Tree.

9 S. RACEMÒSA (Lin. mant. 67.) leaflets stalked, somewhat serrated, smooth; racemes simple. ♄. S. Native of the East Indies. Usúbis triphýlla, Burm. ind. t. 32. f. 1. Ornítrophe Schmidèlia, Pers. ench. 1. p. 412. Allophýllus racemòsus, Swartz, prod. p. 62. Branches flexuous. Flowers digynous. This species is very like *S. Cóbbe*.

Racemose-flowered Schmidelia. Fl. May, July. Clt. 1820. Tree 12 feet.

10 S. BOJERIA'NA (Cambess. in mem. mus. 18. p. 38.) leaves ternate, smoothish, pale-green above, paler beneath; leaflets oblong, nearly sessile and nearly entire, terminal one cuneated and somewhat acuminated, lateral ones bluntish; racemes axillary, branched. ♄. S. Native of Madagascar, where it is called *Lefoun-doula*.

Bojer's Schmidelia. Tree.

11 S. COMÍNIA (Swartz, fl. ind. occ. 2. p. 667.) leaflets stalked, oblong, tapering to both ends, serrated, pubescent beneath; racemes compound. ♄. S. Native of Jamaica in the western

mountains as well as of Cuba. Rhus Comìnia, Lin. amœn. 5. p. 395. Allophýllus Comìnia, Swartz, prod. 62. Ornítrophe Comìnia, Willd. spec. 2. p. 323.—Sloan. hist. 2. t. 208. f. 1. Flowers small, whitish-yellow. Fruit small orange-coloured. The tree is called *Cominia* by the natives of Jamaica.

Cominia Schmidelia. Clt. 1778. Tree 15 feet.

12 S. Africa'na (D. C. prod. 1. p. 610.) leaflets stalked, oval, tapering to both ends, serrate-toothed; peduncle divided into 2 or 3 somewhat spiked racemes. ♄. S. Native of Guinea in the kingdom of Waree, on the banks of the river Formosa. Allophýllus Africànus, Beauv. fl. d'ow. 2. p. 74. t. 107. S. racemòsa, Afz. mss.

African Schmidelia. Tree 20 feet.

13 S. dista'chya (D. C. prod. 1. p. 610.) leaflets stalked, ovate-lanceolate, acuminated, serrated, smooth; racemes axillary, twin, spike-formed. ♄. S. Native of Bengal. Very like *S. Africàna*.

Twin-spiked Schmidelia. Tree 20 feet.

14 S. occidenta'lis (Swartz, fl. ind. occ. 2. p. 665.) leaflets almost sessile, oblong, tapering to both ends, serrated, smooth, or somewhat tomentose beneath; racemes simple. ♄. S. Native of St. Domingo among bushes on the mountains, and on the Andes about Quindiu. Ornítrophe occidentàlis, Willd. spec. 2. p. 323. Lam. ill. t. 309. f. 2.

Western Schmidelia. Shrub 8 feet.

15 S. spica'ta (D. C. prod. 1. p. 611.) leaflets sessile, ovate, somewhat serrated, tomentose beneath, terminal leaflet twice the size of the lateral ones; racemes spicate, filiform. ♄. S. Native of? Ornítrophe spicàta, Poir. dict. 8. p. 265.

Spicate-flowered Schmidelia. Tree.

16 S. Timorie'nsis (D. C. prod. 1. p. 611.) leaflets sessile, ovate, acuminated, serrate-toothed, smooth; racemes compound. ♄. S. Native of the Island of Timor, and probably of Malabar. —This is probably Molàgo Màram of Rheed. mal. 5. t. 25.

Timor Schmidelia. Tree small.

17 S. glabra'ta (H. B. et Kunth, nov. gen. amer. 5. p. 122.) leaflets stalked, elliptical, obtuse, somewhat mucronated, quite entire, smooth; racemes ternate. ♄. S. Native of South America on the banks of the river Magdalena near Nares.

Smooth-leaved Schmidelia. Tree 40 feet.

18 S. móllis (H. B. et Kunth, nov. gen. amer. 5. p. 122.) leaflets stalked, elliptical-oblong, repandly-toothletted, hairy above, hairy-tomentose on the veins and nerves below; racemes compound. ♄. S. Native of New Granada in shady places.

Soft Schmidelia. Tree 60 feet.

19 S. Guarani'tica (St. Hil. bull. philom. 1823. p. 133.) leaflets coarsely toothed at the top, and pubescent beneath, intermediate one stalked, lanceolate, lateral ones ovate-lanceolate; common petiole downy; racemes simple, much shorter than the leaves. ♄. S. Native of Brazil.

Guaranitic Schmidelia. Tree.

20 S. Cochinchine'nsis (D. C. prod. 1. p. 611.) leaves on long petioles; leaflets serrated; racemes terminal; petals pilose, small. ♄. G. Native of Cochin-china on the banks of rivers. Allophýllus ternàtis, Lour. fl. coch. 232. This shrub is probably identical with *S. Cóbbe* or *Timoriénsis*. Flowers small, white. The inhabitants of Cochin-china use the leaves of this shrub as a cataplasm for contusions.

Cochin-china Schmidelia. Shrub 5 feet.

21 S. terna'ta (Cambess. in mem. mus. 18. p. 24.) leaves trifoliate; racemes axillary, nearly simple; petals smooth. ♄. G. Native of New Caledonia. Pomètia ternàta, Willd. spec. 3. p. 398. Aporètica ternàta, Forst. gen. p. 74. Flowers white? Calyx 4-parted. Petals 4. Stamens 8.

Ternate-leaved Schmidelia. Tree.

22 S. Geme'lla (Cambess. in mem. mus. 18. p. 24.) leaves trifoliate; racemes axillary, spiked; petals pilose. ♄. G. Native of Cochin-china. Geméllа trifoliàta, Lour. fl. coch. 649. Aporètica Geméllа, D. C. prod. 1. p. 610. Schmidèlia Cochinchinénsis, Spreng. syst. 2. p. 222. Flowers white. Leaflets ovate-lanceolate, unequally-serrated, smooth.

Twin-fruited Schmidelia. Shrub 6 feet.

23 S. heterophy'lla (St. Hil. fl. bras. 1. p. 383. t. 82.) leaves nearly simple, rarely trifoliate, terminal one oblong-cuneated, acuminated, sharply-serrated, smoothish; lateral leaflets small or abortive; racemes spike-formed, axillary. ♄. S. Native of Brazil near Rio Janeiro. Flowers yellowish-green. Thouínia dioíca, Nees et Mart. nov. act. bonn. 12. p. 21. t. 4.

Various-leaved Schmidelia. Shrub 4 feet.

* * *Leaves simple.*

24 S. ri'gida (Swartz, fl. ind. occ. 2. p. 663.) leaves ovate-lanceolate, spiny-toothletted; racemes simple. ♄. S. Native of Hispaniola on arid mountains. Ornítrophe rígida, Willd. spec. 2. p. 324. Allophýllus racemòsus, Swartz, prod. 62. This plant has the habit of *Thouínia simplicifòlia*.

Stiff Schmidelia. Shrub 6 feet.

25 S. Allophy'llus (D. C. prod. 1. p. 611.) leaves oval, acuminated, quite entire; racemes axillary, very short. ♄. S. Native of Ceylon. Allophýllus Zeylánicus, Lin. spec. 496. Ornítrophe Allophýllus, Pers. ench. 1. p. 412.

Foreign Schmidelia. Tree 20 feet?

Cult. A mixture of loam and sand will suit this genus well, and ripened cuttings will root in sand under a hand-glass, in heat. The species are not worth cultivating unless in general collections.

VIII. IRI'NA (meaning not evident). Blum. bijd. p. 229. Cambess. in mem. mus. 18. p. 24.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted, permanent. Petals 5, naked inside, length of calyx. Disk emarginate, girding the genitals. Stamens 5, approximating the pistil in the male flowers, very long. Ovary didymous, 2-celled; cells 1-ovulate. Style crowned by an obtuse stigma. Carpel solitary from abortion, coriaceous, dry, indehiscent. Seed solitary, exarillate.—Trees with abruptly pinnate leaves, and spiked, terminal panicles of flowers.

1 I. gla'bra (Blum. bijdr. p. 230.) leaflets smooth, serrated; panicle composed of numerous spikes or racemes. ♄. S. Native of Java.

Smooth Irina. Tree.

2 I. tomentòsa (Blum. bijdr. p. 230.) leaves tomentose; leaflets serrated; panicle composed of numerous racemes, also tomentose. ♄. S. Native of Java.

Tomentose Irina. Tree.

3 I. intege'rrima (Blum. bijdr. p. 231.) leaflets smooth, quite entire; panicle composed of numerous spikes or racemes. ♄. S. Native of Java.

Very-entire-leafletted Irina. Tree.

Cult. Loam and sand will suit this genus well, and ripened cuttings will root in sand under a hand-glass, in heat.

IX. PRO'STEA (in honour of M. Prost, of Mende, who has published a catalogue of the plants of Lozere, and who deserves to be recognised by botanists on account of his distributing among them dried plants of that country). Cambess. in mem. mus. 18. p. 25. t. 1. e.

Lin. syst. *Polyándria, Monogýnia.* Calyx 5-parted, 2 outer lobes smallest. Petals 5, each furnished with a small scale on the inside at the base. Disk annular, occupying the bottom of the calyx. Stamens 20, inserted between the margin of the disk and the ovary, disposed in a double series. Style crowned by a somewhat 3-toothed stigma, immersed between the lobes of the

ovary. Ovary deeply 4-lobed; lobes roundish, 3-celled; cells 1-ovulate. Fruit indehiscent, 1-lobed from abortion, fleshy. 1-celled.—A tree with impari-pinnate, exstipulate leaves. Flowers fasciculate, in compound racemes. Petals pilose.

1 P. PINNA'TA (Cabess. l. c.) ♄. S. Native of Guinea. Ornítrophe pinnàta, Poir. 8. p. 266. Schmidèlia pinnàta, D. C. prod. 1. p. 611. Leaves with 6-7 pairs of smoothish, oblong-acuminated leaflets. Petioles and branchlets pubescent.

Pinnate-leaved Prostea. Tree.

Cult. Loam and peat will suit this tree, and ripe cuttings will root in sand under a hand-glass, in heat.

X. LEPISA'NTHES (from λεπις, *lepis*, a scale, and ανθος, *anthos*, a flower; in allusion to the scales on the petals). Blum. bijdr. 137 and 238. Cambess. in mem. mus. 18. p. 25.

Lin. syst. *Octándria, Monogýnia.* Calyx of 4 sepals, somewhat unequal, imbricate. Petals 4-5, a little longer than the calyx, each furnished with a scale on the inside. Disk emarginate, girding the genitals. Stamens 8, very short, approximating the pistil. Ovary trigonal, 3-celled; cells 1-ovulate. Style almost wanting. Stigma obtuse. Drupe? tetragonal, containing a 3-celled, 3-seeded nucleus.—A tree with abruptly-pinnate leaves; leaflets nearly opposite. Racemes simple, axillary, and lateral.

1 L. MONTA'NA (Blum. l. c.) ♄. S. Native of Java.

Mountain Lepisanthes. Tree.

Cult. A mixture of loam and sand will suit this tree, and ripened cuttings will root in sand under a hand-glass, in heat.

XI. SAPI'NDUS (a syncope of *Sapo-Indicus*, Indian-soap. The aril which surrounds the seeds of *S. saponària* is used as soap in South America). Lin. gen. no. 499. D. C. prod. 1. p. 607.

Lin. syst. *Octo-Decándria, Monogýnia.* Calyx 5-parted. Petals 5, naked on the inside, or furnished with a scale above the claw. Disk occupying the bottom of the calyx, regular, entire or crenulated. Stamens 8-10, inserted between the margin of the disk and ovary. Style crowned by a 3 rarely 2-lobed stigma. Fruit fleshy, 1-2-lobed from abortion, rarely 3-lobed; lobes roundish, indehiscent, 1-2-seeded from abortion, rarely 3-seeded. Seeds without aril. Embryo curved or straight.—Trees with exstipulate, impari or abruptly-pinnate leaves, or from abortion having only one leaflet; leaflets opposite or alternate. Racemes disposed in terminal panicles. Berries all red and saponaceous, and may be used in the same manner as those of *S. saponària*. Flowers small, white, or greenish-white.

* *Rachis winged.*

1 S. SAPONA'RIA (Lin. spec. 526. exclusive of the synonyme of Pluk.) rachis of leaves decurrent, broadly winged; leaflets quite entire, lanceolate, 3-4 pairs, with an odd one, which is terminated by a long point; panicles terminal; fruit round. ♄. S. Native of the Caribbee Islands and various parts of South America. Ruiz et Pav. fl. per. 4. t. 341.—Comm. hort. 1. t. 94. Flowers small and white. These are succeeded by oval or round berries as large as cherries, sometimes single, at others 3 or 4 are joined together; these have a saponaceous skin, which incloses a very smooth, roundish nut, of a shining-black when ripe. These nuts were formerly brought to England for buttons to waistcoats, some were tipped with gold, and others with different metals; they were very durable, as they did not wear, and seldom broke. The skin and pulp which surround the nuts are used in America to wash linen, but it is very apt to burn and destroy it if often used, being of a very acrid nature. The seed vessels, according to P. Browne, are very detersive and acrid; they lather freely in water, and will cleanse more linen than sixty times their weight of soap; but they are observed to corrode or burn the linen in time, and the water in which the tops or leaves have been steeped or boiled has the same quality in some degree. The seeds are round and hard, have a fine polish, and are frequently made into buttons and beads among the Spaniards. The whole plant, especially the seed-vessels, being pounded and steeped in ponds, rivulets, or creeks, are observed to intoxicate and kill fish.

Common *Soap-Berry.* Fl. July, Sept. Clt. 1697. Tree 20 ft.

2 S. MARGINA'TUS (Willd. enum. 432.) rachis of leaves with a narrow margin at the top; leaflets 6 pairs, lanceolate. ♄. G. Native of Georgia and Carolina on the sea-coast. S. saponària, Michx. fl. amer. bor. 1. p. 242. Fruit possessing the same qualities as those of the preceding species. Flowers small, white.

Marginate-petioled Soap-Berry. Fl. July, Sept. Clt. 1697. Tree 12 feet.

3 S. FORSY'THII (D. C. prod. 1. p. 607.) rachis of leaves with a narrow wing; leaflets quite entire, coriaceous, on very short petioles, elliptical, tapering to both ends, 3-5 pairs. ♄. S. Native of the Island of Granada on the sea-beach. The leaves when bruised have a smell like that of garlic. Fruit globose, possessing the same quality as that of the first species. Flowers small, white, numerous, disposed in dense terminal panicles.

Forsyth's Soap-Berry. Fl. July, Sept. Clt.? Shrub 8 feet.

4 S. STENO'PTERUS (D. C. prod. 1. p. 607.) rachis of leaves with a very narrow wing; leaflets 4 or 5 pairs, quite entire, coriaceous, ovate-oblong, and very much acuminated. ♄. S. Native of St. Domingo. Panicle terminal, loose. Flowers small, white. Very like *S. rígidus*, but differs in the petiole being winged and smooth.

Narrow-winged-petioled Soap-Berry. Shrub 10 feet.

5 S. MICROCA'RPA (Ruiz et Pav. fl. per. 4. t. 341.) leaves abruptly-pinnate, with 3-4 pairs of leaflets on a winged petiole; panicles terminal; fruit small, round. ♄. S. Native of Peru.

Small-fruited Soap-Berry. Shrub.

* * *Rachis or common petiole not winged.*

6 S. RI'GIDUS (Ait. hort. kew, 2. p. 36.) rachis pubescent; leaflets 3 pairs, ovate-oblong, smooth. ♄. S. Native of South America and the West Indies. Gært. fruct. 1. t. 70. f. 3.—Pluk. alm. t. 217. f. 7. Flowers small, white, disposed in super-decompound, terminal racemes, a foot long. Berry with a thin pulp, becoming towards the middle a white, tomentose, spongy substance, embracing a trigonal-globular, bony nut.

Stiff-leaved Soap-Berry. Fl. July, Sept. Clt. 1759. Tree 20 feet.

7 S. ARBORE'SCENS (Aubl. guian. 1. p. 357. t. 139.) leaflets 3 pairs, ovate, each with a short acumen, smooth; racemes axillary, nearly simple. ♄. S. Native of Guiana in woods. Flowers unknown. Fruit small, red.

Arborescent Soap-Berry. Clt. 1824. Shrub 7 feet.

8 S. FRUTE'SCENS (Aubl. guian. 1. p. 355. t. 138.) leaflets oblong-lanceolate, acuminated, smooth, 7 pairs; racemes axillary, almost simple. ♄. S. Native of Guiana in woods and cultivated fields. Flowers unknown. Fruit twin, globose, scarlet, about the size of a cherry. Stem straight.

Frutescent Soap-Berry. Clt. 1824. Shrub 8 feet.

9 S. DIVARICA'TUS (St. Hil. fl. bras. 1. p. 390.) rachis wingless; leaves with 3-5 pairs of lanceolate-falcate, acute, smoothish, unequal-sided leaflets: racemes short, branched; calyx pubescent; petals naked. ♄. S. Native of Brazil in the province of Minas Geraes. Racemes forming a panicle. Stamens 8-10.

Divaricate-panicled Soap-Berry. Tree 20 feet.

10 S. SURINAME'NSIS (Poir. dict. 6. p. 600.) leaflets 6-8 pairs, elliptical-lanceolate, very smooth, membranaceous; pani-

cles divaricate. ♄. S. Native of Surinam. Flowers greenish-white. Fruit globose, hardly the size of a cherry.

Surinam Soap-Berry. Shrub 10 feet.

11 S. INÆQUA'LIS (D. C. prod. 1. p. 608.) leaflets ovate-lanceolate, acuminated, smooth, broader on one side than the other, 4 pairs; panicles divaricate. ♄. S. Native of Guadaloupe. Lam. ill. t. 307. f. 1. S. laurifòlius, in herb. Balb. but not of Vahl. Flowers small, whitish.

Unequal-leaved Soap-Berry. Shrub 6 feet.

12 S. ANGULA'TUS (Poir. dict. 6. p. 665.) leaflets broad-ovate, obtuse, coriaceous, smooth and shining above, pubescent beneath, 3 pairs; fruit of 3 joined carpels, which are keeled on the back. ♄. S. Native of?

Angular-fruited Soap-Berry. Shrub 6 feet.

13 S. JUGLANDIFÒLIUS (St. Hil. fl. bras. 1. p. 391.) rachis wingless; leaves with 4-5 pairs of oblong, equal-sided, smooth leaflets, which are rounded at the apex; racemes branched; calyx hairy; petals each furnished with a 2-lobed scale on the inside. ♄. S. Native of Brazil near Rio Janeiro. Stamens 8.

Walnut-leaved Soap-Berry. Tree 25 feet.

14 S. ESCULE'NTUS (St. Hil. pl. usu. bras. no. 68. fl. bras. 1. p. 391.) rachis wingless; leaves with 2-4 pairs of oblong, attenuated, equal-sided, smooth leaflets; racemes spike-formed; calyx tomentose; petals each furnished with a bifid scale on the inside at the base. ♄. S. Native of Brazil in the province of Minas Geraes, where it is called *Pittombera*, and where the inhabitants eat the aril which surrounds the seeds.

Esculent Soap-Berry. Tree 20 feet.

15 S. SENEGALE'NSIS (Poir. dict. 6. p. 666.) rachis of leaves flattened and striped, somewhat pubescent; leaflets ovate, lanceolate, smooth, with strong nerves on both surfaces, 2-3 pairs. ♄. S. Native of Senegal. Fruit globose, the size of a strawberry.

Senegal Soap-Berry. Clt. 1823. Tree 10 feet.

16 S. GUINEE'NSIS; leaflets numerous, ovate-lanceolate; young branches, as well as panicles, clothed with rufous hairs; panicles large, terminal. ♄. S. Native of Guinea. Fruit red, about the size of a cherry, with a whitish farinaceous pulp.

Guinea Soap-Berry. Fl. April, May. Shrub 6 feet.

17 S. TETRAPHY'LLUS (Vahl. symb. 3. p. 54.) leaflets lanceolate-oblong, smooth, 2 pairs; racemes almost simple; petals smooth. ♄. S. Native of the East Indies.

Four-leaved Soap-Berry. Shrub 8 feet.

18 S. SALICIFÒLIUS (D. C. prod. 1. p. 608.) leaflets 2 pairs; linear-lanceolate, acuminated, smooth; racemes compound; petals bearded on the inside. ♄. S. Native of the Island of Timor. Fruit unknown.

Willow-leaved Soap-Berry. Shrub 6 feet.

19 S. LAURIFÒLIUS (Vahl. symb. 3. p. 54.) leaflets 3 pairs, ovate-oblong, attenuated, smooth; panicles loose; petals tomentose on the borders. ♄. S. Native of Malabar.—Rheed. mal. 4. t. 19. S. trifoliàta, Lin. spec. 625.

Laurel-leaved Soap-Berry. Clt. 1820. Tree 10 feet.

20 S. LONGIFÒLIUS (Vahl. symb. 3. p. 53.) leaflets 5 pairs, smooth, with a terminal, lanceolate leaflet. ♄. S. Native of the East Indies. Calyx tomentose-hoary. Fruit unknown.

Long-leaved Soap-Berry. Clt. 1820. Tree 10 feet.

21 S. EMARGINA'TUS (Vahl. symb. 3. p. 54.) leaflets 2-3 pairs, oblong, emarginate, villous beneath; panicles decompound, pubescent; petals with tomentose margins. ♄. S. Native of the East Indies. Fruit of 3 joined carpels, somewhat globular, and densely clothed with yellowish hairs.

Emarginate-leaved Soap-Berry. Clt. 1822. Tree 12 feet.

22 S. RA'RAK (D. C. prod. 1. p. 608.) leaflets 3-10 pairs, oblong, retuse, very smooth, membranaceous. ♄. S. Native of Java, Amboyna, and Cochin-china.—Rárak, Rumph. amb. 2. p. 134. S. saponària, Lour. coch. 238? S. pinnàtus, Mill. dict. no. 3.? Loureiro celebrates the berries of this tree, slightly bruised and steeped in water, as a very excellent soap, and remarks, that it is only required to use them with prudence, all abstergents being in some degree corrosive. He describes it as a very large tree, and as both wild and cultivated in Cochinchina. It has also been found in the South-sea Islands.

Rarak Soap-Berry. Tree 40 feet.

23 S. ABRU'PTUS (Lour. fl. coch. 238.) leaves abruptly-pinnate; leaflets lanceolate, smooth; flowers campanulate, of 4 sepals and 4 petals. ♄. G. Native of China about Canton. Racemes large, terminal. Flowers pale.

Abrupt-leaved Soap-Berry. Tree 30 feet.

24 S. MUKORÓSSI (Gært. fruct. 1. p. 342. t. 70.) leaflets 6 pairs, alternate, ovate-lanceolate, smooth, tender; berry ovate, acuminated at both ends. ♄. G. Native of Japan about Jeddo. Thunb. jap. 356. no. 37. Fruit of 3 carpels, 2 of them are abortive, the third very large. Thunberg informs us, that the fruit was reported by the Japanese physicians to be bitter and juicy. The tree is called *Mukorossi* in Japan.

Mukorossi or Japan Soap-Berry. Tree 20 feet.

† *Species not sufficiently known, with simple leaves.*

25 S.? I'NDICUS (Poir. dict. 6. p. 667.) leaves almost sessile, smooth, netted with veins, usually linear-lanceolate, undivided, but sometimes it is divided to the base into 2 opposite, ovate-lanceolate lobes. ♄. S. Native of the East Indies.

Indian Soap-Berry. Tree 20 feet.

26 S. SIMPLICIFÒLIUS; leaves simple, oblong, entire, coriaceous, oblique at the base; panicles axillary. ♄. S. Native of Guinea.

Simple-leaved Soap-Berry. Shrub 4 feet.

Cult. *Sapindus* is a genus of trees and shrubs possessing no beauty, therefore they are hardly worth cultivating except in general collections. They will thrive well in a mixture of loam, peat, and sand, and large cuttings will strike root in sand under a hand-glass, in heat. Seeds obtained from the places of their natural growth should be sown directly.

XII. ERIOGLO'SSUM (from *εριον*, *erion*, wool, and *γλωσσα*, *glossa*, a tongue; in allusion to the scales of the petals being villous). Blum. bijdr. p. 229. Cambess. in mem. mus. 18. p. 27.

LIN. SYST. *Octándria*, *Monogýnia*. Calyx 5-sépalled, 2 inner sepals smallest. Petals 4, concave, each furnished with a bifid, villous scale on the inside. Stamens 8, unequal, villous. Ovaries 3, 1-seeded, connate with the style, which is crowned by an obtuse stigma. Carpels elliptical, baccate, connate at the base, usually solitary from abortion.—A shrub with the habit of *Sapíndus*, bearing eatable fruit, and with pinnate leaves; leaflets 3-4 pairs, usually with an odd one.

1 E. E'DULE (Blum. l. c.) ♄. S. Native of Java. Sapíndus édulis, Blum. cat. hort. buitenz.

Eatable-fruited Erioglossum. Shrub 6 feet.

Cult. A mixture of loam, peat, and sand will suit this shrub, and ripe cuttings will root in sand under a hand-glass, in heat.

XIII. MOULI'NSIA (in honour of M. Charles des Moulins, of Bourdeaux, author of many interesting memoirs on various branches of natural history). Cambess. in mem. mus. 18. p. 27. t. 2.

LIN. SYST. *Octándria*, *Monogýnia*. Calyx 5-parted. Petals 4, the fifth deficient, and with its seat vacant, each furnished with a cucullate scale above the base, with the scales crested at the apex, and ending in an inflexed appendage beneath the apex.

Disk incomplete, 4-lobed, with the lobes opposite the petals. Stamens 8, excentral, connate around the ovary at the base. Pistil excentral. Style crowned by a somewhat 3-lobed stigma, seated between the lobes of the ovary. Ovary 3-lobed, 3-celled; cells 1-ovulate. Capsule 3, or from abortion only 2-lobed, 2-3-celled, opening at the cells into 2-3 valves.—Trees with exstipulate? abruptly-pinnate leaves; leaflets alternate or opposite. Flowers racemose, white.

1 M. Cupanoìdes (Cambess. in mem. mus. 18. p. 40. t. 2.) leaves with 5-7 pairs of oblong, somewhat acuminated, stalked, entire leaflets, which taper to both ends; racemes compound, terminal. ♄. S. Native of Timor and Java. Sapíndus fraxinifòlius? D. C. prod. 1. p. 608.

Cupania-like Moulinsia. Tree.

2 M. rubiginòsa; petioles villous; leaves with many pairs of opposite, nearly sessile, ovate-lanceolate, obtuse, mucronate, entire, nearly smooth leaflets; panicle terminal, composed of numerous simple racemes. ♄. S. Native of Pulo-Penang and Coromandel. Sapíndus rubiginòsus, Roxb. cor. 1. p. 44. t. 62. Calyx of 5 unequal sepals. Petals 4, white, appendiculate at the base; appendages furnished with 2 transverse lines of white hairs. Stamens villous, 8, unequal, incumbent. This tree is called *Ishyrashy* among the Telingas. The wood is very useful for various purposes, being large, straight, strong, and durable, towards the centre it is of a chocolate colour.

Rusted Moulinsia. Clt. 1821. Tree 20 feet.

Cult. A mixture of loam, peat, and sand will suit these trees, and ripened cuttings will root in sand under a hand-glass, in heat.

XIV. CUPA'NIA (in memory of Father Francis Cupani, an Italian monk, author of Hortus Catholicus and other botanical works, died in 1710). Plum. gen. p. 49. t. 19. Pers. ench. 1. p. 413. D. C. prod. 1. p. 612.—Trigònis, Jacq. amer. 100. Molinæ'a, Juss. gen. 245.—Guiòa, Cav. icon. 4. p. 49.—Dimerèza, Labill. nov. cal. t. 51.—Gelònium, Gærtn. fruct. 2. p. 271.—Tìna, Rœm. et Schult. syst. 5. p. 985.—Ratònia, D. C. prod. 1. p. 618.—Mischocárpus, Blum. bijdr. 238.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-cleft or 5-parted. Petals 5, each furnished with a small scale above the base (perhaps always) rarely wanting. Disk occupying the bottom of the calyx, regular, entire, or crenulated. Stamens 10, or from abortion 9-5, inserted between the margin of the disk and the ovary. Style trifid or undivided. Capsule pear-shaped, 2-3-sided, 2-3-valved, 2-3-celled. Seeds erect, arillate.—Trees or shrubs with exstipulate? abruptly-pinnate leaves, or from abortion simple; leaflets opposite and alternate. Flowers whitish, in racemose panicles or racemes.

Sect. I. Trigònis (from τρεις, *treis*, three, and γωνια, *gonia*, an angle; the petals are of the form of a triangle). Jacq. amer. 100. Petals convolutely cucullate at the apex.—American species.

1 C. tomentòsa (Swartz, fl. ind. occ. 2. p. 657.) leaflets 3-4-pairs, obovate, retuse, clothed with fine rusty tomentum beneath, serrate-toothed at the top of the lateral nerves; outer leaflets largest. ♄. S. Native of Hispaniola, Guadaloupe, and on the banks of the river Magdalena in woods. Trigònis tomentòsa, Jacq. amer. 102.—Plum. ed Burm. t. 110. C. Americàna, Lin. Petals yellowish, triangular, and hairy on the inside.

Tomentose-leaved Cupania. Clt. 1818. Tree 30 feet.

2 C. exce'lsa (H. B. et Kunth, nov. gen. amer. 5. p. 125.) leaflets usually 5 pairs, oblong, bluntish, remotely toothletted, coriaceous, smoothish above, but pubescent beneath. ♄. S. Native of Mexico on the mountains.

Tall Cupania. Clt. 1824. Tree 60 feet.

3 C. verna'lis (St. Hil. fl. bras. 1. p. 387.) leaves with 5-6 pairs of oblong, sharply-serrated leaflets, which taper to the base, smooth above and puberulous beneath; calyx tomentose. ♄. S. Native of Brazil in the province of Rio Grande do Sul, where it is called *Cambuata*. Ovary 3-lobed, 3-celled. Flowers decandrous; filaments pilose.

Spring Cupania. Tree 20 feet.

4 C. euphoriæfòlia (St. Hil. fl. bras. 1. p. 388.) leaves with 4-5 pairs of oblong, entire, smoothish leaflets, which are narrowed at the base; calyx permanent, puberulous; fruit pubescent. ♄. S. Native of Brazil. Capsule pear-shaped, 2-3-lobed, 2-3-celled.

Euphoria-leaved Cupania. Shrub.

5 C. panicula'ta (St. Hil. fl. bras. 1. p. 388. t. 80.) leaves with 5 pairs of elliptic, obtuse leaflets, rounded at the base, dentately serrated, shining above but tomentose beneath; calyx tomentose. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers octandrous. Filaments pilose.

Panicled-flowered Cupania. Shrub 3 to 4 feet.

6 C. latifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 126.) leaflets 2 pairs, obovate-oblong, retuse, repandly toothed, smooth, but hairy on the veins beneath. ♄. S. Native of an island in the river Magdalena, called Isla de Brugas. Fruit unknown.

Broad-leaved Cupania. Tree 40 feet.

7 C. scrobicula'ta (H. B. et Kunth, nov. gen. amer. 5. p. 127.) leaflets 4 pairs, oblong, retuse, remotely and sharply toothed, somewhat membranaceous, smooth, scrobiculate at the origin of the veins beneath. ♄. S. Native of New Granada near Turbaco. This species comes very near *C. glàbra*.

Scrobiculate-leaved Cupania. Tree 20 feet.

8 C. reticula'ta (Cambess. in mem. mus. 18. p. 41.) leaves with 2-3 pairs of elliptical, short-acuminated or rounded at the apex, entire, stalked, reticulately veined, smooth leaflets; calyx permanent, 5-parted, tomentose; capsule obcordate, pear-shaped, 3-lobed, tomentose. ♄. S. Native of Guiana. Flowers disposed in large, spreading, racemose panicles.

Reticulated-leaved Cupania. Tree.

9 C. gla'bra (Swartz, fl. ind. occ. 2. p. 659.) leaflets 3-4 pairs, ovate, obtuse, crenated, smooth, acuminated at the base. ♄. S. Native of Jamaica, where it is called *Loblolly-tree*, and St. Domingo in the mountains.

Smooth Cupania. Fl. May, June. Clt. 1822. Tree 14 feet.

10 C. emargina'ta (St. Hil. fl. bras. 1. p. 386.) leaves with 2-3 pairs of obovate, subcuneated, emarginate, entire, smooth leaflets; calyx deciduous; fruit smooth. ♄. S. Native of Brazil in the province of Rio Janeiro. Capsule obcordate, 2-celled, 2-valved.

Emarginate-leaved Cupania. Tree 15 feet.

11 C. zanthoxyloìdes (St. Hil. fl. bras. 1. p. 386. t. 79.) leaves with 2-3 pairs of obovate-oblong, dentately-serrated, smooth leaflets, which are narrowed at the base, smooth above and tomentose beneath; calyx permanent, tomentose; fruit pubescent. ♄. S. Native of Brazil near the town of St. Paul. Capsule pear-shaped, 3-lobed, 3-valved.

Zanthoxylon-like Cupania. Shrub 6 to 7 feet.

12 C. sapona'ria (Pers. ench. 1. p. 413.) leaflets 5-6 pairs, oblong, tapering to both ends, entire, scabrous and pubescent beneath. ♄. S. Native of the West Indies. C. saponarioìdes, Swartz, fl. ind. occ. 2 p. 661.

Saponaria-like Cupania. Fl. May, Ju. Clt. 1810. Tr. 20 ft.

13 C. Poire'tii (Kunth, ann. des scienc. nat. 1. p. 457.) leaflets usually 4 pairs, oblong, acute, coriaceous, smoothish, shining above; branches and panicled racemes covered with rusty tomentum. ♄. S. Native of Trinidad and Guadaloupe. Robìnia rubiginòsa, Poir. syst. veg. 3. p. 247.

Poiret's Cupania. Tree 20 feet.

14 C. Vòua-ra'na (Cambess. in mem. mus. 18. p. 42.) leaves with 2-3 pairs of elliptic or oblong-obovate, obtuse, or shortly acuminated, obsoletely-sinuated, smooth, stalked leaflets; calyx 5-parted, tomentose, permanent, at length smooth; capsule obcordate, 2-lobed, smooth. ♄. S. Native of Guiana, where it is called *Voua-rana*. Vòua-ràna Guianénsis, Aubl. guian. suppl. p. 12. t. 374. Matàyba? Vòua-ràna, D. C. prod. 1. p. 609. Cupània lævigàta, Rich. ined. Racemes axillary, branched. Flowers in fascicles on the racemes.

Voua-rana Cupania. Tree.

15 C. puncta'ta (St. Hil. fl. bras. 1. p. 389.) leaves with 5-6 pairs of ovate, obtuse, usually somewhat emarginate, quite entire leaflets, which are smoothish above and pubescent beneath; calyx hairy. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers usually decandrous. Filaments pilose.

Dotted Cupania. Shrub 3 to 4 feet.

16 C. gemina'ta (Poir. suppl. 2. p. 419.) leaflets 2, oval, acuminated, entire, glaucous above, puberulous beneath; lateral nerves prominent, confluent at the apex. ♄. S. Native of Cayenne. C. diphýlla, Vahl.? Younger capsules velvety, bluntly trigonal.

Twin-leaved Cupania. Tree.

17 C.? nítida (D. C. prod. 1. p. 613.) leaflets 1-2 pairs, with an odd one, oval, acuminated, entire, coriaceous, very smooth on both surfaces. ♄. S. Native of French Guiana or Cayenne. Young capsules velvety, adult ones smooth, 3-winged at the apex. This is probably a species of *Paullínia*.

Shining-leaved Cupania. Tree?

Sect. II. Molinæ'a (in honour of John Des Moulins, a French physician). Juss. gen. 245. Lam. ill. t. 305. D. C. prod. 1. p. 613. Petals flattish, a little larger than the calyx. Filaments very short, villous. Mauritian or East Indian species.

18 C. læ'vis (Pers. ench. 1. p. 413.) leaflets 2-3 pairs, opposite, oblong, quite entire, very smooth, coriaceous; nerves hardly prominent. ♄. S. Native of the island of Bourbon. Molinæ'a, Lam. ill. t. 305. f. 1. Molinæ'a læ'vis, Willd. spec. 2. p. 329. Capsules obovate, triquetrous-winged. Corymbs of flowers panicled, terminal.

Smooth Cupania. Tree small.

19 C. Chapelieria'na (Cambess. in mem. mus. 18. p. 44.) leaves with 3-7 pairs of elliptical, oblong, smooth, toothed leaflets, which are shining above and narrowed at the base; calyx permanent, puberulous; capsule obovoid, smooth; racemes axillary, a little longer than the leaves. ♄. S. Native of Madagascar.

Chapelier's Cupania. Tree.

20 C. alternifòlia (Pers. ench. 1. p. 413.) leaflets 4-5 pairs, usually alternate, quite entire, very smooth, coriaceous; nerves hardly prominent. ♄. S. Native of the Island of Bourbon. This plant is probably nothing more than a slight variety of *C. læ'vis*. Molinæ'a, Lam. ill. t. 305. f. 2. M. alternifòlia, Willd. spec. 2. p. 329.

Alternate-leafletted Cupania. Tree.

21 C. Perrotte'tii (Cambess. in mem. mus. 18. p. 45.) leaves with 2-3 pairs of elliptical, acutish or obtuse, quite entire, stalked, smooth leaflets; calyx deciduous, 5-parted, hairy; capsule obovate, somewhat emarginate at the apex, somewhat 2-lobed, smooth. ♄. S. Native of the Philippine Islands. Racemes very short, axillary.

Perrottet's Cupania. Tree.

22 C. venulòsa (D. C. prod. 1. p. 613.) leaflets 1-2 pairs, opposite, oblong, quite entire, very smooth, netted with rather prominent nervules. ♄. S. Native of the island of Bourbon and the Mauritius. Leaflets very like the leaves of *Vaccínium vìtis-idèa*.

Veiny-leaved Cupania. Tree.

23 C. Thouarsia'na (Cambess. in mem. mus. 18. p. 45.) leaves with 2 pairs of obovate-oblong, cuneated, emarginate, quite entire, smooth leaflets; calyx permanent, puberulous; capsule obovate, smooth; racemes axillary, shorter than the leaves, densely puberulous. ♄. S. Native of Madagascar.

Petit Thouars's Cupania. Tree.

24 C. cane'scens (Pers. ench. 1. p. 413.) leaflets 2 pairs, opposite, elliptical-oblong, quite entire, shining, even, smooth. ♄. S. Native of Coromandel in the mountains. Molinæ'a canéscens, Roxb. hort. beng. p. 29. Panicles axillary. Capsules ovate, 3-furrowed, not winged.

Hoary Cupania. Clt. 1818. Tree 16 feet.

25 C. Tola'mbitou (Cambess. in mem. mus. 18. p. 43.) leaves with 2-3 pairs of oblong, subacuminated, quite entire, nearly sessile, quite smooth, leaflets, which are narrowed at the base; calyx deciduous; capsule obcordately 3-lobed, smooth; racemes axillary, shorter than the leaves. ♄. S. Native of Madagascar, where it is called *Tolambitou*.

Tolambitou Cupania. Tree.

Sect. III. Adonta'ria (from *οδους οδοντος, odous odontos*, a tooth; petals toothed). D. C. prod. 1. p. 614. Petals crenate-toothed at the apex, inserted in a 5-parted or 5-tubercled hypogynous disk. Filaments villous at the base.

26 C. denta'ta (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 614.) leaflets 6-7 pairs, alternate, oval-oblong, crenate-toothed. ♄. S. Native of Mexico. Panicle terminal. Petals white, equal in length with the pubescent calyx, cuneated, 3-toothed at the apex. Capsules red, ovate, 3-furrowed, wingless.

Toothed-leaved Cupania. Clt. 1824. Tree small.

Sect. IV. Guiòa (in honour of Joseph Guio, a botanical artist, mentioned by Cavanilles). Cav. icon. 4. p. 49. D. C. prod. 1. p. 412. Petals flat, smaller than the calyx. Filaments smooth. Capsules 3-winged, or perhaps of 3 distinct carpels. This section will probably form a distinct genus.

27 C. Ratònia (Cambess. in mem. mus. 18. p. 47.) leaves with 2-3 pairs of oblong-spatulate, somewhat cuneated, obtuse or a little emarginate, quite entire, smooth, stalked leaflets; calyx 5-parted, permanent; capsule obcordate, 2-lobed, smooth; racemes simple, axillary, solitary. ♄. S. Native of St. Domingo, where it is called *Raton*.

Raton Cupania. Tree.

28 C. lentiscifòlia (Pers. ench. 1. p. 413.) leaflets 3 pairs, alternate, lanceolate, quite entire, coriaceous. ♄. S. Native of the island of Babao, one of the Friendly Islands. Guiòa lentiscifòlia, Cav. icon. 4. p. 49. t. 373. Petals red. Panicle terminal.

Lentiscus-leaved Cupania. Shrub 6 feet.

Sect. V. Ape'tala. Flowers apetalous. Petals wanting.

29 C. ape'tala (Lab. nov. cal. p. 72. t. 73.) leaflets 5-13 pairs, ovate-lanceolate, smooth; racemes short, axillary; flowers polygamous, apetalous. ♄. S. Native of New Caledonia.

Apetalous Cupania. Tree 36 feet.

30 C. Lessertia'na (Cambess. in mem. mus. 18. p. 46.) leaves with 2-3 pairs of oblong-lanceolate, tapering to both ends, acuminated, entire, stalked, quite smooth leaflets; calyx permanent, 5-cleft, hairy; capsule pear-shaped, smooth. ♄. S. Native of Java. Mischocárpus Sundaìcus, Blum. bijdr. p. 238. Racemes axillary, solitary, or twin, spike-formed. Petals wanting.

De Lessert's Cupania. Tree.

Sect. VI. Dimere'za (from *διμερης, dimeres*, 2-parted; in

allusion to the 2-parted appendages of the petals). Labill. nov. cal. t. 51. Petals 5, orbicular, furnished each with a bifid appendage on the inside. Stamens 8. Capsules coriaceous, 3-valved, 3-seeded.

31 C. glau'ca (Cambess. in mem. mus. 18. p. 29.) hairy; leaflets 1-2 pairs, lanceolate, glaucous beneath; flowers panicled. ♄. G. Native of New Caledonia. Dimerèza glaúca, Labill. nov. caled. t. 51. Diplopétalum glaúcum, Spreng. syst. append. p. 150. Capsule triquetrous, 3-celled, 3-seeded.

Glaucous-leaved Cupania. Shrub 9 feet.

Sect. VI. Tína (from τις, τινος, *tis, tinos*, who, what; at the time the name was given it was uncertain to what genus the plants belonged). Corolla of 5 hairy scales. Stamens 5, inserted in the base of the pistil. Capsules 2-valved, narrowed at the base, pear-shaped.

32 C. cupanioìdes (Cambess. in mem. mus. 18. p. 28.) leaves impari-pinnate; panicles axillary; capsules obcordate. ♄. S. Native of the Mauritius? Gelònium cupanioìdes, Gært. fruct. 2. p. 271. t. 139. Tìna cupanioìdes, D. C. prod. 1. p. 614.

Cupania-like Cupania. Tree 20 feet.

33 C. Madagascarie'nsis (Pet. Th. gen. mad. no. 4. under *Tìna*,) capsules acuminated; leaves alternate, conjugate, or abruptly and impari-pinnate, with woody petioles; flowers panicled. ♄. S. Native of Madagascar.

Cult. The species of *Cupània* will thrive well in a mixture of sandy loam and peat; and ripened cuttings will root in sand under a hand-glass, in a moist heat.

XV. HARPU'LIA (*Harpula* is its vernacular name at Chittagong). Roxb. fl. ind. 2. p. 441.

Lin. syst. *Pentándria, Monogýnia.* Sepals 5. Petals 5, alternate with the stamina. Stamens 5. Style short. Stigma, 2-lobed; lobes reflexed. Capsule 2-celled; seeds solitary, arillate. Disk fleshy, villous. A small tree, with abruptly-pinnate leaves, with from 4-6 pairs of entire, ovate-lanceolate, opposite, or alternate leaflets, and axillary, solitary panicles of small pale-yellow flowers.

1 H. cupanioìdes (Roxb. l. c.). ♄. S. Native of the hills near Chittagong.

Cupania-like Harpulia. Fl. April. Tree 20 feet.

Cult. A mixture of loam and sand will answer this tree well, and ripened cuttings will root in sand under a hand-glass, in heat.

XVI. BLI'GHIA (in honour of Captain William Bligh, R.N. who first carried the bread-fruit trees to the West Indies). Kœnig, in ann. bot. 1806. 2. p. 571. D. C. prod. 1. p. 609.—Akeèsia. Tuss. antill. (1808) p. 66.—Bonánnia, Raf. specch. (1814) 15. p. 115.

Lin. syst. *Octándria, Monogýnia.* Calyx 5-parted. Petals 5, scarcely appendiculate on the inside? Stamens 8. Style very short. Stigmas 3. Carpels 3, connate, fleshy, opening at the apex. Seeds solitary, seated on a large fleshy aril.—A large tree, with habit of *Sapíndus* or *Cupània*.

1 B. sa'pida (Kœn. l. c. 2. t. 16. and 17.). ♄. S. Native of Guinea, from whence it has been introduced into the West Indies and South America. Akeèsia Africàna, Tuss. antil. p. 66. t. 3. Bonánnia nítida, Raf. specch. 15. p. 116. Akēe, Lunan. hort. jam. 2. p. 335. Rachis of leaves not winged, pubescent. Leaflets 3 or 4 pairs, ovate-lanceolate, veiny. This is an esteemed African fruit-tree, with reddish or yellowish berries, about the size of a hen's egg, with the aril of the seed of a grateful subacid flavour. In the West Indies it is considered wholesome.

Savoury Akee-tree. Fl. Mar. Clt. 1793. Tree 30 feet.

Cult. This tree is greatly esteemed for the excellence of its fruit, both in Guinea and the West Indies. It will thrive well in a mixture of loam and peat. Ripened cuttings, not deprived of any of their leaves, will strike root in sand under a hand-glass, in heat. The tree has never been brought to a flowering state in this country.

XVII. TALI'SIA (*Toulichi* is the name of *T. Guianénsis* in Guiana). Aubl. guian. 1. p. 349. D. C. prod. 1. p. 609.

Lin. syst. *Octándria, Monogýnia.* Calyx deeply 5-cleft. Petals 5, each furnished with a densely pilose scale above the base, nearly equalling the limb. Disk very fleshy, occupying the whole bottom of the calyx, regular, crenulated. Stamens 8, inserted between the margin of the disk and the ovary. Stigma sessile, obsoletely 3-toothed. Ovary 3-4-celled, with the ovulæ fixed to the bottom of the cells.—Trees or shrubs with exstipulate, abruptly pinnate leaves, with alternate leaflets. Flowers disposed in racemose panicles.

1 T. hexaphy'lla (Vahl. ecl. 2. p. 29.) racemes simple; calyx equal in length to the petals; leaflets 2-3 pairs, oblong-lanceolate, shining, smooth on both surfaces. ♄. S. Native of South America.

Six-leaved Talisia. Tree 20 feet.

2 T. móllis (Kunth, mss. Cambess. in mem. mus. 18. p. 48.) racemes decompound, panicled; calyx shorter than the petals; leaflets 5 pairs, oval-oblong, acuminated, with the nerves and nervelets hairy beneath. ♄. S. Native of South America. T. Guianénsis, D. C. prod. 1. p. 609. exclusive of the synonymes.

Soft Talisia. Clt. 1824. Shrub 4 feet.

3 T. Guiane'nsis (Aubl. guian. 1. p. 340. t. 136.) racemes decompound; calyx shorter than the petals; leaflets many pairs, ovate-lanceolate, acuminated, coriaceous, quite smooth on both surfaces. ♄. S. Native of Guiana and Cayenne. G. glàbra, D. C. prod. 1. p. 609. Flowers rose-coloured.

Guiana Talisia. Shrub 4 feet.

4 T.? acladòdea (D. C. prod. 1. p. 609.) trunk simple; racemes terminal; leaves abruptly pinnate; leaflets oblong-linear, acuminated. ♄. S. Native of Peru in groves. Acladòdea pinnàta, Ruiz et Pav. fl. per. prod. 133. t. 29. syst. p. 262. Tree with the habit of a palm. Female flowers unknown.

Unbranched Talisia. Tree 40 feet.

Cult. These trees will thrive well in a mixture of loam and peat, and large cuttings, not deprived of any of their leaves, will strike root in sand under a hand-glass, in heat.

XVIII. STADMA'NNIA (in honour of Stadmann, a German botanical traveller). Lam. ill. t. 312. D. C. prod. 1. p. 615.

Lin. syst. *Octándria, Monogýnia.* Calyx 5-toothed. Petals wanting. Stamens 8. Ovary oblong. Style very short. Stigma trigonal. Berry globose, 1-celled, 1-seeded from abortion.—Trees with impari-pinnate leaves, and elongated, spike-formed racemes of small whitish flowers.

1 S. sidero'xylon (D. C. prod. 1. p. 615.) leaves alternate, with 3 or 5 pairs of alternate, large, oval, oblong, coriaceous, emarginate, smooth, shining leaflets; racemes panicled, elongated, terminal. ♄. S. Native of the island of Bourbon, where it is called *Bois de fer*, as well as of Amboyna. Arbor palòrum alba, Rumph. amb. 3. t. 65. The wood of this tree is very hard and heavy, of a reddish colour. It is very knotty, and is therefore very difficult to cut. It is commonly used for stakes or pales. Cupània sideróxylon, Cambess.

Iron-wooded Stadmannia. Tree 66 feet.

2 S. austra'lis; leaves alternate, with 2 or 3 pairs of large, oblong, retuse, rather coriaceous, opposite leaflets, with an odd one; young leaves and branches covered with rusty down; racemes terminal? ♄. G. Native of New Holland.

Southern Stadmannia. Cult. 1820. Tree 60 feet.

Cult. Trees with very shewy, large, pinnate leaves. They will thrive well in a mixture of loam and peat, or a light, loamy

soil; and ripened cuttings will root in sand under a hand-glass, in a moist heat.

XIX. MATA'YBA (*Matabaiba* is the name of *M. Guianénsis* in Guiana). Aubl. guian. 1. p. 331. t. 128. Matàyba, D. C. prod. 1. p. 609.—Ernstíngia, Neck. elem.—Ephièlis, Schreb. gen. no. 647.

Lin. syst. *Octándria, Monogýnia.* Calyx 5-cleft. Petals 5, each furnished with a short appendage above the base on the inside. Disk filling the bottom of the calyx, 8-crenate. Stamens 8, with villous filaments inserted between the margin of the disk and ovary. Style none. Stigma subsessile, 3-toothed. Ovary 2-celled; cells 1-ovulate. Capsule oblong, 1-celled, 2-valved, one of which is empty, the other 2-seeded on the inside at the middle. Seeds arillate, reniform.—Trees with exstipulate, abruptly pinnate leaves, and racemose panicles of small white flowers.

1 M. Guiane'nsis (Aubl. guian. 1. p. 331. t. 128. Lam. ill. t. 298.) leaves smooth, abruptly pinnate, with 3 or 4 pairs of leaflets; petiole not winged; racemes panicled. ♄. S. Native of Guiana and St. Domingo in woods. Ephièlis fraxínea, Willd. spec. 2. p. 328. Ephièlis Guianénsis, Pers. ench. 1. p. 413. Panicle divaricate. The wood of this tree is considered useful for many purposes, being hard and durable.

Guiana Matayba. Fl. Oct. Clt. 1803. Tree 60 feet.

2 M. Patrisia'na (D. C. prod. 1. p. 609.) leaves impari-pinnate; leaflets 5, villous beneath; petioles slightly winged; racemes simple. ♄. S. Native of Guiana or Cayenne. Fruit very like that of the first species, but differs from it in the impari-pinnate leaves.

Patris's Matayba. Clt. 1825. Tree 50 feet.

Cult. These trees will thrive well in a mixture of loam and peat; and ripened cuttings, not deprived of any of their leaves, will root in sand under a hand-glass, in heat.

XX. NEPHE'LIUM (one of the names given to the *Burdock* by the ancients; the present genus has rough fruit, which has some resemblance to the *Burdock*). Lin. gen. no. 1425. Euphòria, Comm. in Juss. gen. 247.—Dimocárpus, Lour. fl. coch. 1. p. 286.—Scytàlia, Gært. fruct. 1. p. 197.—Aporètica, spec. D. C.—Pomètia, Forst. prod. 392.

Lin. syst. *Octo-Decándria, Monogýnia.* Calyx 5-6-toothed. Petals 5-6, rarely wanting, densely pilose inside. Disk annular, occupying the bottom of the calyx. Stamens 8-10, rarely 6, inserted between the margin of the disk and the ovary. Style crowned by a 2-lobed or bifid stigma. Ovary obcordate, didymous, 2-celled. Fruit indehiscent, usually 1-lobed from abortion, the other lobe being usually abortive, tubercled or muricated, rarely smooth. Seeds thick, covered by a fleshy aril. Embryo straight.—Trees with abruptly-pinnate, exstipulate leaves, rarely simple; leaflets opposite or alternate. Flowers disposed in racemose panicles or racemes. Fruit of all eatable.

1 N. Litchì (Cambess. in mem. mus. 18. p. 30.) leaflets 3-4 pairs, tapering to both ends, lanceolate, glaucous beneath; racemes loose, forming a panicle; berries cordate, scaly. ♄. G. Native of the East Indies and China. Euphòria punícea, Lam. dict. 3. p. 573. ill. t. 306. Euphòria Litchì, Desf. cat. 159. Litchì Chinénsis, Sonn. itin. t. 129. Scytàlia Chinénsis, Gært. fruct. t. 42. f. 3. Scytàlia Loacán, Roxb. hort. beng. p. 28. Dimocárpus Lychì, Lour. fl. coch. 233. Sapíndus édulis, Ait. hort. kew, ed. 1. vol. 2. p. 36. Dimocárpus Litchì, Willd. spec. 2. p. 346. La-tjì, Osb. itin. 192. english edition, 1. p. 308. Li-tchì, Du Halde, chin. 2. p. 144. t. 154. Lechèa, Rich. hist. de Tonquin, 1. p. 60.—Zann. hist. 147. t. 108. Flowers pale. The berries grow in loose racemes; they are heart-shaped, covered with a scaly, hardish rind, which is red on one side and green on the other, containing a delicious white, sweet, subacid pulp, and a large, somewhat obovate, brownish seed. This delicious fruit is about the size of a date; it is said to be dangerous when eaten to excess, occasioning an eruption over the whole body. The Chinese suffer it to dry till it becomes black and shrivelled like prunes. Thus it is preserved all the year, and they use it in tea, to which it communicates an acidity which they prefer to the sweetness of sugar. Loureiro says, the tree is cultivated in great abundance in the southern provinces of China and the northern provinces of Cochin-china, being equally abhorrent both of cold and heat in the extreme. To enjoy the fruit in its full perfection of flavour and smell, it must be eaten in the provinces of Fo-ki-en, Quan-tong, and Quan-si, where it grows. As it will not bear the climate of Pekin, the fruit is carried there for the emperor's use, inclosed in tin vessels, filled with spirits mixed with honey, &c., and thus preserves an appearance of freshness, but loses much of its flavour. The trees themselves are also transported by water from Quan-tong to Pekin for the emperor at considerable labour and expense to his subjects, and being embarked when they begin to flower, the fruit is commonly ripe by the time of their arrival at Pekin. The fruit is called *Li-tchì*, *Lichì*, or *La-tjì* by the Chinese.

Litchi Nephelium. Fl. May, June. Clt. 1786. Tree 15 ft.

2 N. longa'num (Cambess. in mem. mus. 18. p. 30.) leaflets 3 pairs, with strong pinnate nerves beneath; panicle loose; berries globose, almost smooth. ♄. G. Native of China and Cochin-china. Scytàlia Longán, Roxb. hort. beng. p. 29. Dimocárpus Longán, Lour. fl. coch. 233. Euphòria Longàna, Lam. dict. 3. p. 574.—Buchoz. icon. col. t. 99. This tree is also cultivated in China and Cochin-china for its fruit, which is in great esteem among the Chinese, and if not so agreeable to the taste as the *Litchì*, it is however said to be more wholesome. It is globular, has a yellowish, smooth skin, and its pulp is white, tart, and juicy. This fruit is called by the Chinese *Longan*, *Lang-an*, *Long-yen*, or *Laong-uhan*.

Longan Nephelium. Fl. May, June. Clt. 1786. Tree 20 ft.

3 N. infórme (Cambess. in mem. mus. 18. p. 30.) leaflets? panicles few-flowered; berries usually twin, irregular, tubercled. ♄. G. Native of Cochin-china in woods. Euphòria infórmis, D. C. prod. 1. p. 612. The leaves are almost like those of the *Longan*. The fruit of this tree is also eaten in China. It is not so good as those of the two preceding species, being much more sour. The wood is good, hard, and heavy, of a reddish-brown colour.

Unsightly-shaped-fruited Nephelium. Tree 20 feet?

4 N. lappa'ceum (Lin. syst. 4. p. 236.) leaflets 5-7, oblong; berries subovate, hairy. ♄. S. Native of the East Indies. Lam. ill. t. 764. Marsd. sum. with a figure. Euphòria Nephèlium, D. C. prod. 1. p. 612. Dimocárpus crinìta, Lour. fl. coch. 234. Scytàlia Ramboótan, Roxb. hort. beng. p. 29. Petals absent. Calyx 5-6-cleft. Stamens 5-8. The pulp of the fruit is eatable, of an agreeable sub-acid flavour, though not so good as the *Longan* or *Litchì*; it is usually twin. This is the Rambutan or Rampostan of Bont. jav. f. 109.

Burdock-fruited Nephelium or Rambootan. Tree.

5 N. pinna'tum (Cambess. in mem. mus. 18. p. 30.) leaves pinnate; racemes supra-decompound, terminal. ♄. S. Native of the Islands of Tanna and Namoka. Pomètia pinnàta, Forst. prod. p. 392.

Pinnate-leaved Nephelium. Tree.

6 N. Bengale'nse; leaves with 4-5 pairs of oblong-lanceolate leaflets, which are oblique at the base; panicle terminal, composed of many racemes. ♄. S. Native of Bengal. Scytàlia Bengalénsis, Roxb. in herb. Lamb.

Bengal Nephelium. Tree.

7 N. verticilla'tum (Lindl. bot. reg. 1059. under *Euphòria*,)

leaves simple, obovate-lanceolate, auricled at the base; ovary didymous, with 2 styles between; stamens 8, monadelphous at the base; sepals unequal; flowers in terminal, panicled racemes; ovary surrounded by 8 glands. ♄. S. Native of the Moluccas. Scytàlia verticillàta, Roxb. hort. beng. p. 29. Flowers small, white tinged with red.

Whorled-leaved Nephelium. Fl. June. Clt. 1821. Shrub 6 ft.

† *Species only known by name from Roxb. hort. beng. p. 29. and 88. under the genus Scytàlia.*

8 N. RIMÒSUM. Roxb. Silhet. p. 29.
9 N. DANU'RA. Roxb. Chittagong. p. 29.
10 N. RU'BRUM. Roxb. Silhet. p. 29.
11 N. PARVIFLÒRUM. Roxb. Moluccas. p. 88.
12 N. OPPOSITIFÒLIUM. Roxb. Moluccas, p. 88.

Cult. This is a genus of fine trees, for the most part bearing delicious fruit. They will grow well in a mixture of loam and peat. Cuttings taken off from ripened wood, planted in sand under a hand-glass, in a moderate heat, will root.

XXI. THOUI'NIA (in honour of Andre Thouin, professor of agriculture in the Jardin des Plantes of Paris, editor of the agricultural part of the Encyclopedie Methodique; died in 1820.) Poit. ann. mus. 3. p. 70. t. 6. D. C. prod. 1. p. 612. but not of Thunb. nor Smith.

LIN. SYST. *Octo-Decándria, Monogýnia.* Calyx 4-5-parted. Petals 4-5, naked inside. Disk occupying the bottom of the calyx, regular, crenulated. Stamens 8-10, inserted between the margin of the receptacle and the ovary. Style trifid, with the segments longitudinally stigmatose inside, immersed between the lobes of the ovary. Fruit constantly of 3 carpels, adnate to the central axis, drawn out into a membranous wing at the apex and back, 1-celled, 1-seeded at the base. Seeds destitute of aril.—Trees or shrubs, rarely furnished with tendrils, with exstipulate, abruptly-pinnate, trifoliate, rarely simple leaves. Flowers small, white.

* *Leaves simple.*

1 T. SIMPLICIFÒLIA (Poit. ann. mus. 3. p. 71. t. 6.) leaves coarsely serrate-toothed, rather tomentose beneath; racemes simple. ♄. S. Native of St. Domingo. Racemes axillary, a little shorter than the leaves. Leaves resembling those of the sweet chesnut, but narrower.

Simple-leaved Thouinia. Shrub 8 feet.

2 T. INTEGRIFÒLIA (Spreng. neue. entd. 2. p. 155.) leaves quite entire, smooth on both surfaces; racemes panicled. ♄. S. Native of Brazil. Leaves discoloured beneath. Panicle terminal, flaccid.

Entire-leaved Thouinia. Tree small.

* * *Leaves trifoliate.*

3 T. TRIFÒLIATA (Poir. ann. mus. 3. p. 72. 5. t. 27.) leaflets almost sessile, oval, tapering to the base, somewhat serrated, smooth, but pilose in the axils of the veins beneath; racemes simple, terminal. ♄. S. Native of St. Domingo about Fort Dauphin.

Trifoliate-leaved Thouinia. Shrub 8 feet.

4 T. TOMENTO'SA (D. C. prod. 1. p. 612.) leaflets elliptical-oblong, serrated, smooth above, but clothed with white velvety tomentum beneath; racemes simple. ♄. S. Native of St. Domingo. Leaves and carpels one-half smaller than those of the preceding species.

Tomentose-leaved Thouinia. Tree small.

5 T.? VILLO'SA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 612.) leaflets ovate, serrated at the apex, acute, villous; racemes panicled. ♄. S. Native of New Spain about Quaunahuaca. Carpels 3, distinct to the base, therefore it will probably form a distinct genus.

Villous-leaved Thouinia. Tree small.

6 T. SCA'NDENS (St. Hil. fl. bras. 1. p. 384.) leaves trifoliate; leaflets oblong, tapering to both ends, acuminated, smooth, furnished with 1 or 2 teeth on one side; racemes axillary, often converted into tendrils. ♄. ◡. S. Native of Brazil in the province of Rio Janeiro. Petals greenish-white.

Climbing Thouinia. Shrub cl.

* * * *Leaves pinnate.*

7 T. PINNA'TA (Turp. ann. mus. 5. p. 401. t. 26.) leaflets oblong, rather emarginate; flowers in terminal panicles, with 5 petals and 8 stamens. ♄. S. Native of St. Domingo between Monte-Christi and San-Yago.

Pinnate-leaved Thouinia. Clt. 1823. Shrub 8 feet.

8 T. POLY'GAMA (Meyer. prim. esseq. 156.) leaflets oblong-ovate; flowers polygamous, racemose, villous, with 4 petals and 8 stamens. ♄. S. Native of Guiana in sandy woods.

Polygamous-flowered Thouinia. Tree 14 feet.

9 T. DECA'NDRA (H. B. et Kunth, pl. equin. 1. p. 198. t. 56.) leaflets 6 pairs, lanceolate, toothed; flowers panicled, with 5 petals and 10 stamens. ♄. S. Native of Mexico about Acapulca.

Decandrous Thouinia. Tree 18 feet.

Cult. These trees will succeed well in a mixture of sandy loam and peat, and cuttings taken off from ripened wood will root in sand under a hand-glass, in heat.

XXII. HYPELA'TE (a name given by Pliny to *Ruscus;* it comes from *ὑπο, hypo,* under, and *ελατη, elate,* a fir-tree; habitat of original plant). Browne, jam. 208. Swartz, fl. ind. occ. 2. p. 653. t. 14. D. C. prod. 1. p. 614.—Melicócca species, Juss. in mem. mus. vol. 3.

LIN. SYST. *Octo-Decándria, Monogýnia.* Calyx 5-parted. Petals 5 or wanting, naked inside. Disk occupying the bottom of the calyx, nearly entire or lobed. Stamens 8-10, inserted between the margin of the disk and ovary. Style very short, crowned by a somewhat 2-3-lobed stigma. Ovary 2-3-celled; cells 2-3-ovulate. Fruit nearly dry, indehiscent, 1-2-celled from abortion. Seeds pendulous, destitute of aril?—Trees with exstipulate, trifoliate, or abruptly-pinnate leaves; leaflets opposite or alternate. Flowers small, white, glomerate, or disposed in short panicles.

1 H. TRIFOLIA'TA (Swartz, fl. ind. occ. 2. p. 655.) leaves trifoliate; leaflets coriaceous, obovate, with rather marginate petioles; panicles terminal, rather corymbose; petals 5. ♄. S. Native of the south of Jamaica on cretaceous hills. It is also said to be common in the low lands. A smooth shrub, with leaves like those of *Toddàlia* or *Lignum-vitæ*, but without dots. The stem is beset with leaves at intervals. This shrub is probably *Amýris lypelàla* of Rob. in Lunan. hort. jam. 1. p. 149.

Trifoliate Hypelate. Shrub 9 feet.

2 H. PANICULA'TA (Cambess. in mem. mus. 18. p. 32.) leaves with 2 pairs of leaflets; flowers decandrous, in terminal, corymbose panicles; petals 5. ♄. S. Native of St. Domingo. Melicócca paniculàta, Juss. mem. mus. 3. p. 187. t. 5. Fruit round, 1-seeded. Leaflets large, oblong-lanceolate, entire.

Panicled-flowered Hypelate. Clt. 1820. Tree 20 feet.

3 H. DENTA'TA (Cambess. in mem. mus. 18. p. 32.) leaves with 5 or 6 pairs of oboval leaflets, which are toothed at the apex; peduncles few-flowered, axillary; flowers octandrous; petals 5. ♄. S. Native of the Mauritian Islands. Melicócca dentàta, Juss. mem. mus. 3. p. 187. t. 6. Fruit round, 1-seeded. Leaflets small.

Toothed-leaved Hypelate. Tree 16 feet.

4 H. GENICULA'TA (Spreng. syst. 2. p. 220. under *Melicócca*,) leaves ternate or pinnate, with 2 pairs of oblong-lanceolate, acuminated leaflets; rachis knotted, jointed at the apex; panicles axillary, spreading. ♄. S. Native of Brazil. Flowers decandrous. Berry 1-seeded.

Jointed-petioled Hypelate. Tree small.

5 H. DIVERSIFO'LIA (Cambess. in mem. mus. 18. p. 32.) leaves with 1-9 pairs of oval, entire leaflets; flowers apetalous, octandrous, axillary, glomerate, 5-parted; drupe spherical, 2-seeded. ♄. S. Native of the Mauritius. Melicócca diversifòlia, Juss. mem. mus. 3. p. 187. t. 7. M. apétala, Poir. suppl. 3. p. 224. The leaves are probably sometimes simple and ovate. It is called in the Mauritius *Bois de Gaulette*.

Diverse-leaved Hypelate. Tree.

Cult. This is rather a handsome genus of shrubs. They will thrive well in a mixture of loam and peat, or any light loamy soil, and ripened cuttings will root if planted in sand under a hand-glass, in a moist heat.

XXIII. APHA'NIA (from *αφανες, aphanes*, obscure). Blum. bijdr. p. 236. Cambess. in mem. mus. 18. p. 37.

LIN. SYST. *Pentándria, Monogýnia*. Calyx 4-parted, unequal. Petals 4, ciliated, each furnished with 2 scales at the base. Disk hypogynous, girding the genitals. Stamens 5, approximating the pistil. Ovary ovate, compressed, 2-celled; cells 1-seeded. Style almost wanting, terminated by an emarginate stigma.—A tree with abruptly-pinnate leaves; leaflets nearly opposite. Panicle terminal, composed of many racemes.

1 A. MONTA'NA (Blum. l. c.) ♄. S. Native of Java.

Mountain Aphania. Tree.

Cult. A mixture of loam and sand will suit this tree, and ripe cuttings will root in sand under a hand-glass, in heat.

XXIV. MELICO'CCA (from *μελι, meli*, honey, and *κοκκος, coccos*, a berry; the taste of the fruit is very sweet). Juss. mem. mus. 3. p. 178. D. C. prod. 1. p. 614.

LIN. SYST. *Octo-Decándria, Monogýnia*. Calyx 4-5-parted. Petals 4-5, or wanting, naked inside. Disk occupying the bottom of the calyx, entire, or lobed. Stamens 8-10, inserted between the margin of the disk and the ovary. Style crowned by a 2-3-lobed stigma. Ovary 2-3-celled. Fruit baccate, 1-2-celled from abortion, 1-2-seeded. Seeds enwrapped in a fleshy substance. Embryo straight.—Trees with exstipulate, abruptly-pinnate leaves; leaflets nearly opposite. Flowers small, white, disposed in spike-formed racemes.

1 M. BI'JUGA (Lin. spec. 495.) leaves with 2 pairs of leaflets; rachis winged; racemes terminal and axillary, simple, spike-formed; flowers octandrous, of 4 petals; drupe 1-seeded from abortion. ♄. S. Native of the Antilles and of New Spain in the province of Caraccas, but is now cultivated throughout the West Indies for its fruit. M. bijugàtus, Jacq. amer. 108. t. 72. M. carpoìdea, Juss. mem. mus. 3. p. 187. t. 4. Leaflets large, yellowish-green. The male flowers are more yellow than the female. The fruit of this is as large as a bullace-plum, jet-black, with a very sweet pleasant taste. It is now known in Jamaica by the name of *bullace-plum*, but in the time of Patrick Browne the tree was called *Genip-tree*. At Curaçoa the Spaniards call it *Monos*; it is cultivated to a great extent there. It is also called *Honey-berry*.

Two-paired-leaved or Common Honey-berry. Clt. 1778. Tree 16 to 20 feet.

2 M. OLIVÆFO'RMIS (H. B. et Kunth, nov. gen. amer. 5. p. 150.) leaves with 2 pairs of large, elliptical, acute, coriaceous leaflets; rachis naked; peduncles terminal, branched; flowers octandrous, of 4 petals; drupe 1-seeded from abortion. ♄. S. Native of New Granada at Turbaco. Fruit the size and shape of an olive, jet-black, with a pleasant taste.

Olive-shaped-fruited Honey-berry. Clt. 1818. Tree 16 ft.

3 M. TRI'JUGA (Juss. in mem. mus. 3. p. 187. t. 8.) leaves with 3 pairs of oblong, obovate, obtuse leaflets; racemes axillary, elongated; flowers 6-parted, apetalous, octandrous; drupe spherical, 2-3-celled, 2-3-seeded. ♄. S. Native of the islands of Ceylon and Timor. Schleichèra trijuga, Willd. spec. 4. p. 1096. Scytàlia trijuga, Roxb. mss. Fruit black, eatable.

Three-paired-leaved Honey-berry. Clt. 1820. Tree 20 ft.

4 M.? PUBE'SCENS (Roth. nov. spec. 385.) leaves with 2 pairs of very blunt leaflets and an odd one; rachis tomentose. ♄. S. Native of the East Indies.

Pubescent-petioled Honey-berry. Tree.

Cult. Most of the species of this genus bear eatable fruits. They will thrive in a mixture of loam and peat, or a light loamy soil; and ripened cuttings will strike root in sand under a hand-glass, in heat.

Section II.

DODONÆA'CEÆ. (Cambess. in mem. mus. 18. p. 33.). Cells of ovary containing 2-3-ovulæ, rarely more (f. 112. g.). Embryo spirally twisted.

XXV. KOELREUTE'RIA (in honour of John Theophilus Koelreuter, once Professor of Natural History at Carlsrhue). Laxm. nov. comm. petrop. 16. p. 561. t. 18. but not of Murr. D. C. prod. 1. p. 616.

LIN. SYST. *Octándria, Monogýnia*. Calyx 5-parted. Petals 3-4 from abortion, each furnished at the claw inside with a 2-parted appendage. Disk very fleshy, occupying the whole bottom of the calyx, regular, 8-crenate. Stamens 8, rarely 5-6-7, inserted between the margin of the disk and the ovary. Style truncate or acutish at the apex. Ovary 3-celled; cells 2-ovulate. Capsule bladdery, 1-celled above, 3-celled at the bottom, 3-valved; valves seminiferous beneath the middle. Seeds without aril.—A deciduous tree, with exstipulate, impari-pinnate leaves; leaflets opposite or alternate, coarsely lobed or toothed. Flowers yellow, disposed in terminal, racemose, spreading panicles.

1 K. PANICULA'TA (Laxm. l. c.). ♄. H. Native of China. Sapíndus Chinénsis, Lin. fil. suppl. 228. K. Paullinoìdes, Lher. sert. 18. t. 19. K. paniculàta, Duh. ed. nov. t. 36. Ker. bot. reg. t. 320.

Panicled-flowered Koelreuteria. Fl. July, Aug. Clt. 1763. Tree 10 to 15 feet.

Cult. This beautiful tree deserves a place in every collection; when in flower it is extremely shewy. It will thrive in any common soil, but it should be planted in as sheltered a situation as possible, because it does not flower if too much exposed. If the summer prove cold, the wood seldom ripens, therefore the tops of the branches are generally killed the following winter by the frost. It may be either propagated by layers or cuttings from the root.

XXVI. COSSI'GNIA (in honour of M. Cossigny, a French naturalist, once resident at Pondicherry, who presented Commerson with an herbarium of the plants of Coromandel). Comm. in Juss. gen. 248. D. C. prod. 1. p. 614.

LIN. SYST. *Penta-Hexándria, Monogýnia*. Calyx 5-parted. Petals 4, naked inside. Disk irregular, occupying the bottom of the calyx. Stamens 5-6, inserted in the disk. Pistil excentral. Style longish, terminated by a capitellate stigma. Ovary 3-celled; cells 3-ovulate. Capsule 3-celled, 3-valved; cells 3, or from abortion only 2-seeded. Seeds destitute of aril, fixed to the permanent triangular centril axis.—A tree with exstipulate, impari-pinnate leaves. Flowers in panicles.

1 C. Borbo'nica (D. C. prod. 1. p. 614.). ♄. S. Native of Bourbon. Leaves impari-pinnate, sometimes with 2-3 or 1 pair of leaflets, the odd leaflet is always sessile. C. pinnàta, Lam. dict. 2. p. 132. ill. t. 256. when the leaves are pinnate. C. triphýlla, Lam. dict. 2. p. 132. when the leaves are trifoliate. Leaflets oblong, entire, somewhat scabrous above, pale tomentose beneath, with yellow veins. Flowers panicled, see Bory. voy. 2. p. 324. Ruízia aúrea, Hortul.

Bourbon Cossignia. Clt. 1811. Tree 20 feet.

Cult. This tree is known in our gardens by the name of *Ruízia aúrea*. It is generally admired on account of the orange-coloured nerves of the leaves, which give it an agreeable appearance. It will thrive in a mixture of loam and peat, or a light, loamy soil; and ripe cuttings will strike root in sand under a hand-glass, in a moist heat.

XXVII. LLAGUNO'A (in honour of Eugene de Llaguno, a Spanish amateur botanist). Ruiz et Pav. fl. per. prod. 126. t. 28. Pers. ench. 2. p. 565. D. C. prod. 1. p. 116.

Lin. syst. *Octándria, Monogýnia.* Calyx 5-cleft. Petals wanting. Disk fleshy, occupying the bottom of the calyx, 10-lobed at the apex. Stamens 8, rarely 9-10. Style incurved, terminated by a 3-lobed stigma. Capsule 3-valved, 3-celled, with a dissepiment in the middle of each valve; cells 1-2-seeded; seeds destitute of aril.—Trees with exstipulate, trifoliate leaves, or usually simple from abortion. Flowers disposed in short, few-flowered, axillary racemes.

1 L. nítida (Ruiz et Pav. fl. per. prod. 126. t. 28.) leaves smooth, serrated, acute, undivided, or furnished on each side with a lobe at the base, and they are therefore somewhat ternate. ♄. S. Native of Peru in woods. Amiròla nítida, Pers. ench. 2. p. 565. Peduncles trifid; lateral branches usually abortive. The seeds of this plant are black and shining, and are used for forming necklaces by the natives of Peru.

Shining-seeded Llagunoa. Shrub 9 feet.

2 L. prunifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 131.) leaves ovate-elliptical, sharply toothed, smooth above, hairy beneath, with the nerves and veins tomentosely hairy. ♄. S. Native of Peru near Loxa. Amiròla prunifòlia, D. C. prod. This is probably only a variety of the preceding. Seeds perhaps used for the same purpose.

Plum-leaved Llagunoa. Shrub 8 feet.

3 L. mo'llis (H. B. et Kunth, l. c.) leaves elliptical, serrated, hairy above, but clothed with hoary tomentum beneath. ♄. S. Native of Peru near Loxa. Amiròla móllis, D. C. prod. 1. p. 616.

Soft-leaved Llagunoa. Shrub 10 feet.

4 L. glandulòsa; leaves stalked, trifoliate; leaflets elliptical, serrated, dotted with black glands on both surfaces. ♄. G. Native of Chili at Coquimbo. Amiròla glandulòsa, Hook, in bot. Beech. voy. p. 12. Calyx 5-cleft. Petals wanting. Stamens 8. Ovary ovate, trigonal. Stigma oblong, sessile.

Glandular Llagunoa. Shrub.

Cult. These shrubs will thrive in a mixture of loam and peat or sandy loam; and ripened cuttings will root in sand under a hand-glass, in a moderate heat.

XXVIII. DODONÆ'A (in honour of Rambert Dodoens, more generally known by the name of Dodonæus, physician to Maximilian II. and Rudolph II., author of Historia Plantarum, in 6 pemptades, that is to say, in 6-times 5 books. This work has been translated into French by L'Ecluse or Clusius; he died in 1585). Lin. gen. ed. 1. no. 855. D. C. prod. 1. p. 616. but not of Plum.

Lin. syst. *Octo-Decándria, Trigýnia.* Calyx 4-5, rarely 5-parted (f. 112. *a.*). Petals wanting. Disk hypogynous, usually vanished. Stamens 8, rarely 9-10, inserted in the disk or receptacle. Style 2-3 (f. 112. *d.*), rarely 4-cleft, with the segments longitudinally stigmatose inside. Capsule 2-3-4-sided, 2-3-4-celled, opening by 2-3-4 valves at the dissepiments, not as in the rest of the order at the cells; valves keeled, winged (f. 112. *f.*). on the back. Central axis 2-3-4-angled, 2-3-4-winged. Seeds destitute of aril.—Shrubs with exstipulate, simple or pinnate leaves. Flowers small, greenish-yellow.

* *Leaves lanceolate or spatulate.*

FIG. 112.

1 D. viscòsa (Lin. mant. 238. exclusive of many of the synonymes. Meyer. prim. essequeb. p. 157.) leaves obovate-oblong, cuneated at the base, clammy; flowers racemose; fruit 2-3-winged, on longer pedicels. ♄. G. Native of South America, and the Caribbee Islands, as well as of Guinea at Waree in sandy places.—Plum. ed. Burm. t. 247. f. 2.—Sloane, hist. 2. t. 162. f. 3. —Rumph. amb. 4. t. 50.—Pluk. phyt. t. 142. f. 1. There are varieties of this plant with acutish, blunt, and emarginate leaves; capsules at both ends profoundly emarginated, 7 or 9 lines long and 8 or 12 broad (see Kunth, nov. gen. amer. 5. p. 134.) There are probably many species confounded here. D. viscòsa, Forst. prod. 27. ex D. viscòsa, spatulàta and tríquetra, according to Sir James Smith are constantly confused together.—Ptèlea viscòsa, Lin. spec. 173. Mill. dict. no. 2. The taste of the whole plant is sour and bitterish, hence it is called in Jamaica *Switch-sorrel.*

Clammy Dodonæa. Fl. June, July. Clt. 1690. Shrub 6 ft.

2 D. spatula'ta (Smith, in Rees' cycl. vol. 12. no. 2.) leaves lanceolate-obovate, clammy; sepals ovate, acute, naked; flowers dioecious. ♄. G. Native of the Sandwich Islands. The plant is smaller than *D. viscòsa.*

Spatulate-leaved Dodonæa. Shrub 4 feet.

3 D. attenua'ta (Cung. in Field's New South Wales, p. 352.) leaves linear-spatulate, covered with scabrous dots, tapering to the base, with revolute, denticulated margins, rounded, acute, and quite entire at the apex; racemes lateral and terminal. ♄. G. Native of New Holland in the channel of Cox's River.

Attenuated-leaved Dodonæa. Clt. 1824. Shrub 2 to 3 feet.

4 D. Jamaice'nsis (D. C. prod. 1. p. 616.) leaves oblong-lanceolate, tapering to both ends, with the margins somewhat revolute, rather clammy; flowers disposed in short racemes; fruit shorter than the pedicel. ♄. G. Native of the colder parts of Jamaica.—Browne, jam. t. 18. f. 1. D. angustifòlia, Swartz, obs. 150. D. viscòsa, Cav. icon. t. 327. Carpels 3-winged. The whole plant is sour and bitterish, it is also called *Switch-sorrel* in Jamaica.

Jamaica Dodonæa. Fl. June, Jul. Clt. 1810. Shrub 6 ft.

5 D. biala'ta (H. B. et Kunth, nov. gen. amer. 5. p. 134. t. 442.) leaves lanceolate, tapering to both ends, clammy; racemes somewhat branched; fruit constantly 2-winged, length of pedicel. ♄. S. Native of South America in New Spain near Cumana, as well as of Guinea not far from the Gambia, in sandy places, particularly near Bathurst.

Two-winged-fruited Dodonæa. Fl. May, July. Clt. 1822. Shrub 4 feet.

6 D. Burmannia'na (D. C. prod. 1. p. 616.) leaves oblong, cuneated at the base, acutish, clammy; flowers racemose; fruit longer than the pedicels. ♄. S. Native of the East Indies,

particularly in the islands of Ceylon and Timor.—Burm. zeyl. t. 23. Ptèlea viscòsa, Burm. ind. 36. D. angustifòlia, Roxb. hort. beng. p. 28. Leaves sometimes obtuse, sometimes acutish. Capsules 6 lines long and 9 broad.

Burmann's Dodonæa. Fl. June, July. Clt. 1758. Sh. 5 ft.

7 D. microca'rpa (D. C. prod. 1. p. 617.) leaves oblong-linear, tapering to the base, but blunt at the apex or emarginate; flowers racemose; fruit shorter than the pedicel. ♄. S. Native of the Island of Bourbon. Lam. ill. t. 304. f. 2. Leaves 3 lines broad. Capsules 3 lines long and 4 broad.

Small-fruited Dodonæa. Fl. May, July. Clt. 1818. Sh. 4 ft.

8 D. salicifòlia (D. C. prod. 1. p. 617.) leaves oblong-linear, acuminated at both ends, clammy; flowers racemose; fruit? ♄. G. Native of New Holland? D. angustifòlia, Lam. dict. 3. p. 292. Cultivated in the gardens of France under the name of *Bois de Reinette*. Leaves sweet-scented, 4 lines broad.

Willow-leaved Dodonæa. Fl. May, Jul. Clt. 1820. Sh. 4 ft.

9 D. laurì'na (Sieb. in Spreng. syst. app. p. 152.) leaves oblong-lanceolate, smooth, tapering to both ends; branches round; branchlets 2-edged; flowers in axillary cymes. ♄. G. Native of New Holland.

Laurel-like Dodonæa. Fl. June, July. Clt. 1820. Sh. 4 ft.

10 D. dioíca (Roxb. hort. beng. p. 28. D. C. mem. soc. genev. 1. p. 445.) leaves obovate-oblong, cuneated at the base, acute at the apex, never clammy; young branches compressed, adult ones round; flowers dioecious, racemose. ♄. S. Native of the East Indies, particularly in Hindostan. D. oblongifòlia, Link, enum. 1. p. 381.? D. heterophýlla, Hortul. Very like the following species. Perhaps the figure in Rumph. amb. 4. t. 50. is referable to this or to *D. triquetra*.

Dioecious-flowered Dodonæa. Fl. June, July. Clt. 1819. Shrub 4 feet.

11 D. trí'quetra (Andr. bot. rep. t. 231.) leaves lanceolate, tapering to both ends; branchlets triquetrous; flowers dioecious, racemose; fruit with narrow wings, shorter than the pedicel. ♄. G. Native of New Holland.

Three-sided-branched Dodonæa. Fl. Ju. Jul. Clt. 1790. Sh. 4 ft.

12 D. cunea'ta (Smith, in Rees' cycl. no. 5. Rudge, Lin. trans. 11. p. 296. t. 19.) leaves oblong, wedge-shaped, 3-toothed at the apex; branchlets hardly angular; flowers in short panicles. ♄. G. Native of New Holland about Port Jackson. Fruit almost like that of *D. viscòsa*.

Wedge-leaved Dodonæa. Fl. June, July. Clt. 1816. Sh. 3 ft.

13 D. asplenifòlia (Rudge, in Lin. trans. vol. 11. p. 297. t. 20.) leaves oblanceolate, tapering to the base, 3-toothed at the apex, clammy; flowers somewhat racemose; branches triquetrous. ♄. G. Native of New Holland about Port Jackson.

Spleen-wort-leaved Dodonæa. Fl. June, July. Clt. 1816. Shrub 4 feet.

14 D. umbella'ta; leaves lanceolate, coriaceous, tapering to both ends; flowers terminal, umbellate. ♄. G. Native of New Holland (v. s. herb. Lamb.).

Umbellate-flowered Dodonæa. Shrub 2 to 4 feet.

15 D. Ki'ngii; leaves oblong-lanceolate, tapering to both ends, coriaceous; flowers in short, terminal racemes; fruit small, 3-winged. ♄. G. Native of New Holland (v. s. herb. Lamb.).

King's Dodonæa. Shrub 2 to 4 feet.

16 D. confe'rta; leaves obovate-lanceolate, mucronate, tapering to the base; racemes short, crowded. ♄. G. Native of Van Diemen's Land (v. s. herb. Lamb.).

Crowded-flowered Dodonæa. Shrub 1 to 4 feet.

17 D. lóngipes; leaves oblong-lanceolate, tapering to both ends, obtuse, mucronate; racemes short, axillary; pedicels long; fruit 3-winged. ♄. G. Native of New Holland. Fruit dark-purple, with greenish-yellow wings (v. s. herb. Lamb.).

Long-pedicelled Dodonæa. Shrub 2 to 4 feet.

18 D. erioca'rpa (Smith, in Rees' cycl. no. 6.) leaves elliptic-lanceolate, wavy; branches and fruit beset with long hairs; sepals elliptical, reflexed. ♄. G. Native of the Sandwich islands on the mountains.

Hairy-fruited Dodonæa. Shrub 4 feet.

19 D. elæagnoìdes (Rud. in Schrad. neu. journ. 2. p. 392.) leaves oblong-ovate, clothed with scaly scurf above. ♄. S. Native of St. Domingo.

Elæagnus-like Dodonæa. Fl. June, Jul. Clt. 1800. Sh. 4 ft.

20 D.? serrula'ta (D. C. prod. 1. p. 617.) leaves elliptical-oblong, stalked, serrulated, coriaceous, smooth; capsules coriaceous, 3-winged. ♄. G. Native of Monte Video.

Serrulated-leaved Dodonæa. Shrub 4 feet.

* * *Leaves linear, filiform.*

21 D. ericæfòlia; leaves crowded, linear, very narrow, short; flowers crowded, axillary, and terminal. ♄. G. Native of New Holland (v. s. herb. Lamb.).

Heath-leaved Dodonæa. Shrub 1 to 2 feet.

22 D. filifórmis (Link. enum. 381.) twiggy; leaves long, very narrow; pedicels axillary; fruit 3-winged. ♄. G. Native of New Holland. D. angustíssima, D. C. prod. 1. p. 617.

Filiform-leaved Dodonæa. Clt. 1820. Shrub 2 to 4 feet.

* * * *Leaves pinnate.*

23 D. multi'juga; leaflets 10-15 pairs, small, pubescent, 3-toothed at the apex; petioles interruptedly winged; panicles axillary and terminal. ♄. G. Native of New Holland (v. s. herb. Lamb.).

Many-paired-leafletted Dodonæa. Shrub 2 feet.

24 D. boroniæfòlia; leaflets 3-4 pairs, small, trifid at the apex, with the petioles winged, pubescent. ♄. G. Native of New Holland (v. s. herb. Lamb.).

Boronia-leaved Dodonæa. Shrub 1 to 2 feet.

25 D. Caleya'na; pilose; leaflets 3-4 pairs, small, ovate, with revolute edges; petioles winged. ♄. G. Native of New Holland (v. s. herb. Lamb.).

Caley's Dodonæa. Shrub 1 to 2 feet.

26 D. pinna'ta (Smith, in Rees' cycl.) leaflets 3-8 pairs, small, lanceolate, with revolute edges; fruit 3-winged; branches villous; petioles interruptedly winged. ♄. G. Native of New Holland.

Pinnate-leaved Dodonæa. Clt. 1824. Shrub 2 to 3 feet.

Cult. Dodonæ'a is a genus of trifling shrubs not worth cultivating, except in botanic gardens. They will thrive well in a mixture of loam and peat or any light soil, and cuttings will root readily in sand under a hand-glass, those of the stove species should be placed in a moderate heat.

XXIX. MAGONÆ'A (*Magon*, the name of some botanist known to St. Hilaire). St. Hil. fl. bras. 1. p. 394. Cambess. in mem. mus. 18. p. 35. Phæocárpus, Mart. fl. bras. 1. p. 62. t. 37-38.

Lin. syst. *Octándria, Monogýnia*. Calyx 5-parted, unequal. Petals 5, destitute of scales. Disk occupying the bottom of the calyx, irregular. Stamens 8, inserted in the disk. Pistil excentral. Style curved, terminated by a somewhat 3-lobed stigma. Ovary 3-celled; cells containing many ovulæ; ovulæ imbricate. Capsule large, woody, 3-valved, many-seeded. Seeds large, flat, girded by a wing. Embryo straight, very flat. Cotyledons large, suborbicular.—Trees with exstipulate, abruptly pinnate leaves, and racemose panicles of flowers.

1 M. pube'scens (St. Hil. fl. bras. 1. p. 394. pl. rem. bras. 1. p. 239. t. 23 and 24.) branches pubescent; leaflets ovate or oblong-elliptic, profoundly emarginate, pubescent; flowers racemose; ovaries egg-shaped. ♄. S. Native of Brazil in the

province of Minas Geraes, where it is called *Pao de Tinguy*. Phæocárpus campéstris, Mart. fl. bras. 1. p. 62. t. 37-38. Flowers yellowish-green.

Pubescent Magonæa. Tree 30 feet.

2 M. GLABRA'TA (St. Hil. fl. bras. 1. p. 395. pl. rem. bras. 1. p. 241.) branches smooth; leaflets oblong-elliptic, emarginate, mucronulate, smoothish; flowers panicled; ovaries egg-shaped. ♄. S. Native of Brazil with the last.

Smooth Magonæa. Tree 30 feet.

Cult. A mixture of loam and sand will answer the species; and ripe cuttings, not deprived of their leaves, will root readily in sand, under a hand-glass, in heat.

XXX. ALE'CTRYON (from *αλεκτρυων, alectryon*, a cock, in allusion to the wing of the fruit having a crest like a cock-comb). Gært. fruct. 1. p. 216. t. 46.

LIN. SYST. *Octándria, Monogýnia*? Flowers unknown. Berry coriaceous, globose, 1-celled, with the margin at the apex crested or winged. Receptacle a small tubercle above the base of the loculament at the crested side of the berry. Seed erect, without albumen, girded by an incomplete aril, fixed to the base of the cell. Cotyledons spirally convolute, and with the radicle pointing downwards as in *Dodonæ'a*.—Trees or shrubs with simple leaves.

1 A. EXCE'LSUM (Gært. l. c.) fruit with a crested wing at the apex. ♄. S. Native of? Euonymoìdes excélsa, Sol. in coll. Banks.

Tall Alectryon. Tree or shrub.

2 A.? CANE'SCENS (D. C. prod. 1. p. 617.) fruit edged around with a wing. ♄. G. Native of New Holland on the eastern coast. Leaves oblong, obtuse, clothed with very close-pressed pubescence. Racemes axillary, length of leaves. Fruit almost like that of *Samerària*. Style connected on both sides to the wing of the fruit. Seed oblong, thick.

Hoary Alectryon. Tree or shrub.

Cult. *Aléctryon* is a genus which is hardly known; but we should recommend the same culture and mode of propagation as that given to *Dodonæ'a*, should the plants ever be introduced to the gardens.

† *Genera not sufficiently known, but evidently belonging to Sapindàceæ.*

XXXI. EYSTATHE'S (from *ευσταθης, eystathes*, stable, durable; in allusion to the hardness and durability of the wood). Lour. fl. coch. p. 235. D. C. prod. 1. p. 618.

LIN. SYST. *Octándria, Monogýnia*. Calyx of 5 sepals. Petals 5, equal in length with the calyx. Stamens 8. Ovary roundish. Style filiform. Stigma blunt. Berry globose, fleshy, 1-celled, 4-seeded.—A large tree with simple leaves, and racemes of small, white flowers.

1 E. SYLVE'STRIS (Lour. l. c.). ♄. G. Native of Cochin-china on the mountains. Valentínia sylvéstris, Raeusch. Leaves ovate-oblong, acuminated, quite entire, smooth. Branches spreading. The wood is hard and durable, and is used for building in Cochin-china.

Wild Eystathes. Tree 60 feet.

Cult. This tree will no doubt thrive well in a mixture of loam and peat; and ripened cuttings will probably root in sand under a hand-glass, in a moderate heat.

XXXII.? RACA'RIA (*Racari*, the name of the tree in Guiana). Aubl. guian. suppl. t. 24. f. 382. D. C. prod. 1. p. 618.

LIN. SYST. *Octándria, Monogýnia?* Flowers unknown. Drupe ovate, 1-celled, containing 3 oblong, trigonal nuts, enwrapped in a brittle covering.—A tree with abruptly pinnate leaves and a spiny trunk.

1 R. SYLVA'TICA (Aubl. l. c.). ♄. S. Native of Guiana in woods at the bottom of Serpent Mountain. Trunk beset with large spines above the cicatrices of the leaves. The wood is hard and durable. Leaves with 3 pairs of entire leaflets.

Wood Racaria. Shrub 8 feet.

Cult. This tree is very little known, but if ever it should be introduced to the gardens we would recommend that it should be grown in a mixture of loam and peat; and ripened cuttings to be planted in sand and a hand-glass placed over them, in a moist heat.

XXXIII. VALENTI'NIA (in honour of Michael Berhard Valentini, a German botanist, author of Prodromus Historiæ Hessiæ, published in the year 1707.). Swartz, fl. ind. 687. t. 14. D. C. prod. 1. p. 618.

LIN. SYST. *Octándria, Monogýnia*. Calyx 5-parted, coloured, spreading, permanent. Petals wanting. Stamens 8. Ovary roundish. Style 1. Capsule baccate, pulpy inside, opening at length into 3 or 4 revolute valves. Seeds 3-4, oblong. This genus is referable to *Sapindàceæ*, from the analogy of the leaves, with *Thouínia simplicifòlia*, and deficient of petals as in *Schleichèra* and *Llagunòa*.

1 V. ILCIFÒLIA (Swartz, l. c.). ♄. S. Native of Hispaniola and Cuba, on the most sterile rocks towards the sea. Leaves alternate, like those of the *holly*, but are more oblong, but probably they are more like those of *Thouínia simplicifòlia*. Flowers scarlet, disposed in umbels.

Holly-leaved Valentinia. Shrub 3 feet.

Cult. This beautiful shrub will probably grow in a mixture of sand and loam; and ripened cuttings will perhaps root in sand under a hand-glass, in heat.

XXXIV. PEDICE'LLIA (from *pedicellus*, a pedicel; seeds seated on pedicels). Lour. fl. coch. p. 655. D. C. prod. 1. p. 618.

LIN. SYST. *Polygàmia, Dioècia*. Flowers polygamo-dioecious. Calyx 5-parted; lobes small, acute. Petals wanting. Stamens 8. Ovary roundish, stalked. Style almost wanting. Stigmas 3, somewhat reflexed. Capsules 3-valved. Seed 1, seated on a proper pedicel.—A small tree, with opposite, lanceolate, quite entire leaves, and terminal racemes of small, whitish flowers. The order to which this plant really belongs is extremely doubtful, on account of the opposite leaves.

1 P. OPPOSITIFÒLIA (Lour. l. c.). ♄. G. Native of Cochin-china in woods. The nectary or disk is 5-crenate.

Opposite-leaved Pedicellia. Tree 16 feet.

Cult. This tree will grow in a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass.

XXXV. PIERA'RDIA (in honour of Mr. Pierard, of Kew). Roxb. hort. beng. p. 28.

LIN. SYST. *Octándria, Monogýnia*. Flowers monoecious. Calyx 4-parted, tomentose. Petals wanting? Stamens 8. Style crowned by 3 stigmas. Berry globose, 3-celled, 3-seeded. —A tree with alternate, simple, ovate-lanceolate, coriaceous leaves, and racemes of yellow flowers. Fruit eatable.

1 P. DU'LCIS (Jack, mal. misc.). ♄. S. Native of Sumatra and Chittagong. P. sápida, Roxb. hort. beng. l. c.

Sweet Pierardia. Clt. 1820. Tree 30 feet.

Cult. A mixture of loam and sand will suit this tree well; and ripened cuttings will root in sand under a hand-glass, in heat.

ORDER L. HUMIRIA'CEÆ (plants agreeing with *Humìrium* in many important characters). St. Hil. fl. bras. 2. p. 87.

Calyx 5-cleft. Petals 5, alternating with the lobes of the calyx. Stamens hypogynous, double, quadruple, and multiple the number of the petals, monadelphous at the base, drawn out beyond the anthers, which are short and 2-celled. Style simple, crowned by a lobed stigma. Ovary free, for the most part girded by an annular disk at the base, 5-celled; cells 1-2-ovulate. Fruit drupe-formed, containing a 5-celled nut, or fewer from abortion; cells 1-2-seeded. Integument of seed membranous. Embryo straight, oblong, within a fleshy albumen.—Trees and shrubs, abounding in resinous juice, with alternate, simple, coriaceous, exstipulate leaves, and axillary corymbs of flowers.

Synopsis of the Genera.

1 Humi'rium. Stamens 20, joined into a tube, alternate ones shortest, ciliated above. Annular disk 20-lobed. Stigma 5-lobed. Fruit containing a 5-celled nut. Cells 2-seeded.

2 Helle'ria. Stamens numerous, disposed in 5 bundles, connected at the base into a ring. Annular disk toothed. Stigma 5-lobed. Fruit containing a 5-celled nut, or fewer celled from abortion.

3 Sacaglóttis. Stamens 10, with the filaments connate at the base; anthers ending in a ligula. Ovary girded by a ring. Stigma depressed, rather lobed. Ovary 5-celled, with 1 pendulous ovulæ in each cell.

I. HUMI'RIUM (*Houmiri* is the name of *H. balsamíferum* in Guiana). Mart. fl. bras. 1. p. 143. t. 198 and t. 199. St. Hil. fl. bras. 2. p. 88.—Houmìri, Aubl. guian. 1. p. 564. t. 215.—Houmìria, Juss.—Humìria, D. C. prod. 1. p. 619.—Myrodéndron, Schreb. gen. no. 901.

Lin. syst. *Monadélphia, Polyándria.* Stamens 20, with the filaments connected into a tube at the base; cells of anthers drawn out. Disk annular, 20-toothed, surrounding the ovary. Stigma 5-lobed. Fruit drupe-formed, containing a 5-celled putamen; cells 2-seeded from abortion, each separated by a bony dissepiment.—Trees flowing with balsam. Leaves entire, commonly margined by small gland-like dots, with the limb running down the petiole, and even down the stem, therefore sessile. Flowers axillary and terminal, corymbose, and irregularly cymose.

1 H. parvifo'rum (St. Hil. fl. bras. 2. p. 89.) leaves short, obovate, tapering into the petiole, emarginate and mucronulate at the apex; inflorescence longer than the leaves; peduncles and petals smooth. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals green.

Small-flowered Humirium. Fl. Sept. Tree.

2 H. monta'num (St. Hil. fl. bras. 2. p. 90.) leaves sessile, obovate; inflorescence shorter than the leaves; peduncles hairy; petals smooth. ♄. S. Native of Brazil in the province of Minas Geraes. Petals green.

Mountain Humirium. Tree.

3 H. balsamíferum (Aubl. guian. 1. p. 564. t. 225.) leaves ovate-oblong, half stem-clasping, with a decurrent nerve on the back; inflorescence longer than the leaves; peduncles smooth as well as the petals. ♄. S. Native of Guiana and Cayenne. Myrodéndron amplexicaúle, Willd. spec. 2. p. 1171. Bark thick, abounding in red balsamic fluid, resembling styrax in smell; after it has exuded from the bark it becomes brittle and transparent, and when burnt affords a very agreeable odour. The negroes and the natives of Guiana use the bark for the purpose of slips to make flambeaus. They also use the wood in building their houses. The resin, according to Aublet, might be used medicinally in the same manner as balsam of Peru. The tree is called *Red-wood* by the Creoles on account of the wood being red.

Balsam-bearing Humirium. Tree 40 feet.

4 H. crassifòlium (Mart. fl. bras. 2. p. 143. t. 198.) leaves coriaceous, stalked, obovate-oblong, entire; petioles winged; petals pubescent on the back. ♄. S. Native of Brazil on mount Serra de Arara-coara, on the confines of Peru. Cymes axillary, trichotomous. Flowers small, white.

Thick-leaved Humirium. Tree 8 to 12 feet.

5 H. floribu'ndum (Mart. fl. bras. 2. p. 145. t. 199.) leaves obovate or oblong, with a short acumen at the tip, emarginate, quite entire, tapering into the short petiole; branches and pedicels 2-edged; petals smooth. ♄. S. Native of Brazil in the province of Bahia. Cymes trichotomous, axillary. Flowers small, white.

Bundle-flowered Humirium. Tree 20 to 30 feet.

Cult. These elegant trees will thrive well in a mixture of loam and sand, and ripened cuttings will root in sand under a hand-glass, in heat.

II. HELLE'RIA (in honour of George Heller, professor of botany at Wurzburg). Nees et Mart. nov. act. bonn. 12. p. 40. t. 7. St. Hil. fl. bras. 2. p. 90.

Lin. syst. *Polyadélphia, Polyándria.* Lobes of calyx impressed with glandular pores on the back. Petals reflexed. Stamens numerous, disposed in 5 fascicles, alternating with the petals; filaments connected into a ring at the base; cells of anthers smooth, ending in a gland. Stigma 5-lobed. Ovary villous, 5-celled. Fruit drupe-formed; cells of putamen excavated, usually fewer than in the ovary.—Trees and shrubs, with stalked, entire leaves. Flowers terminal on the branches, usually in dichotomous cymes or corymbs. Sometimes there is a 6th cell added to the ovary.

1 H. ovalifòlia (St. Hil. fl. bras. 2. p. 91.) leaves large, ovate; peduncles hispid; petals tomentose. ♄. S. Native of Brazil in the provinces of Minas Geraes and Minas Novas. Petals greenish-white.

Oval-leaved Helleria. Fl. Aug. Shrub 6 feet.

2 H. obova'ta (Nees et Mart. nov. act. bonn. 12. p. 40. t. 7.) leaves obovate, emarginate and mucronulate at the apex; peduncles and petals smooth. ♄. S. Native of Brazil in the province of Minas Geraes. Petals greenish-white.

Obovate-leaved Helleria. Fl. Sept. Shrub 5-6-12 feet.

Cult. A mixture of loam, peat, and sand will suit these shrubs, and ripened cuttings will root in sand under a hand-glass, in heat.

III. SACAGLO'TTIS (from σακος, *sakos*, a buckler or shield, and γλωττα, *glotta*, a tongue; in allusion to the anthers being terminated by a ligula, as well as in the ovary being surrounded by a buckler-like cupula). Mart. fl. bras. 2. p. 146. Act. bonn. 12. p. 39. with a figure.

Lin. syst. *Monadélphia, Decándria.* Calyx cup-shaped, quinquefid. Petals 5, revolute. Stamens 10, with the filaments connate at the base; cells of anthers connective, drawn out into a ligula. Ovary girded by a cupula, 5-celled, each cell containing one pendulous ovula. Stigma depressed, capitate, globose, somewhat lobed.—A tree with round branches. Leaves oblong, acuminated, shining above, and pale beneath. Flowers yellowish-green, in short axillary corymbs.

1 S. Amazónica (Mart. fl. bras. 2. p. 146.) ♄. S. Native on the banks of the river Amazon.

Amazonian Sacaglottis. Tree 20 feet.

Cult. A mixture of loam, peat, and sand will suit this tree, and ripened cuttings will root in sand under a hand-glass, in heat.

ORDER LI. MELIA'CEÆ (plants agreeing with *Mèlia* in important characters). Juss. gen. 263. mem. mus. 3. p. 436. D. C. prod. 1. p. 619.

Calyx of 4 or 5 (f. 113. *a.*) sepals, but usually 4-5-toothed or 4-5-cleft (f. 115. *a.*). Petals hypogynous, equal in number with the sepals (f. 113. *b.* f. 115. *b.*), and alternating with them, each with a broad claw, usually joined together at the base, and generally valvate in the bud. Stamens double the number of the petals, very rarely equal, triple or quadruple that number, with their filaments joined together into a long-toothed tube (f. 113. *c.* f. 114. *c.* f. 115. *d.*); anthers sessile in the throat of the tube, adnate to its inner side. Ovary 1 (f. 113. *d.*). Style 1 (f. 113. *e.*), with distinct (f. 113. *d.*) or joined (f. 114. *d.*) stigmas. Fruit various, baccate (f. 114.), drupaceous (f. 113. *f.*), or capsular, many-celled, but from abortion often 1-celled, with a dissepiment in the middle of each valve. Seeds without albumen, with various-formed dicotyledonous embryos.—Tropical trees or shrubs, with alternate, exstipulate, simple or compound leaves. This order is particularly distinguished by the stamens being united into a tube, which is toothed at the apex, bearing the anthers in its throat, rarely only monadelphous at the base (f. 115. *d.*).

Synopsis of the Genera.

TRIBE I.

MELIE'Æ. *Cells of fruit 1-2-seeded. Embryo inverted. Cotyledons flat, leafy. Leaves simple or compound.*

1 GERU'MA. Calyx 5-toothed, flat. Petals 5. Stamens 5, connected into a ring at the base. Style crowned by 3 stigmas. Capsule 4-5-celled, 4-5-valved; cells 2-seeded. Seeds inserted in pulp. Leaves simple.

2 TURRÆ'A. Calyx 5-cleft. Petals 5. Stamens 10, joined into a long tube, which is 10-cleft at the apex, with the anthers inserted between the lobes. Style crowned by a thickish stigma. Capsule 5-celled, 5-valved, with a dissepiment in the middle of each valve; cells 2-seeded. Leaves simple, rarely pinnate.

3 QUIVÍSIA. Calyx 4-5-toothed. Petals 4-5, short, silky outside. Stamens 8-10, in a short tube. Stigma capitate. Capsule coriaceous, 4-5-celled, opening by 4-5 valves at the apex, with a dissepiment in the middle of each valve; cells 2-seeded. Leaves simple.

4 STRIGÍLIA. Calyx 5-toothed. Petals 5, joined at the base, silky outside. Stamens 10, joined into a tube. Drupe obovate, 3-celled, but only 1-seeded from abortion (R. et P.), 6 celled; cells 1-seeded (Cav.). Leaves simple.

5 CANE'LLA. Calyx 5-cleft (f. 113. *a.*). Petals 5 (f. 113. *b.*). Stamens 10-15 (f. 113. *c.*), joined into a tube. Stigmas 3. Drupe 3-celled, or only 1-celled from abortion; cells 1-2-seeded. Leaves simple.

6 CIPADE'SSA. Calyx 5-toothed. Petals 5. Stamens 10, connected into a tube at the base; anthers adnate inside. Capsule globose, 5-furrowed, containing a 5-celled, 5-seeded nucleus.

7 SANDO'RICUM. Calyx 5-toothed. Petals 5. Stamens 10, joined into a tube, which is 10-toothed, bearing the anthers inside. Stigmas 5, bifid. Drupe containing 5 ovate, compressed nuts, which are 2-valved at the base and 1-seeded. Leaves trifoliate.

8 ME'LIA. Calyx 5-cleft (f. 114. *a.*). Petals 5 (f. 114. *b.*). Stamens 10 (f. 114. *c.*), connected into a tube, which has 20 teeth at the apex, bearing the anthers on the inside at the throat. Ovary seated on an elevated torus. Drupe containing a 5-furrowed, 5-celled nut; cells 1-seeded. Leaves pinnate or bipinnate.

TRIBE II.

TRICHILIE'Æ. *Cells of fruit 1-2-seeded. Embryo inverted. Cotyledons thick. Leaves pinnate, trifoliate, rarely simple.*

9 TRICHI'LIA. Calyx 4-5-toothed (f. 115. *a.*). Petals 4-5 (f. 115. *b.*). Stamens 8-10 (f. 115. *d.*), sometimes distinct (f. 115. *d.*), sometimes connected into a tube, bearing the anthers at the throat inside. Capsule 2-3-valved, 2-3-celled; valves with a dissepiment in the middle of each; cells 1-2-seeded. Seeds arillate. Leaves pinnate, trifoliate or simple.

10 MI'LNEA. Calyx 5-parted. Petals 5. Urceolus with 5 anthers round its inside at the throat. Ovary 3-celled, each cell containing 1-2 ovulæ. Berry large, 3-celled, usually 1-seeded. Seed arillate.

11 GONIOSCHE'TON. Calyx 5-toothed. Petals 5. Stamens 10, joined into a tube, which is toothed at the apex, and bearing the anthers at the throat. Capsule globose, 3-4-valved, 3-4-celled. Seed solitary from abortion, without aril. Leaves impari-pinnate.

12 DYSO'XYLUM. Calyx 4-5-cleft. Petals 4-5. Stamens 8-10, connected into a tube, bearing the anthers at the throat. Capsule coriaceous, 3-4-valved, 3-4-celled; cells 1-seeded, with a dissepiment in the middle of each valve. Seed without aril. Leaves abruptly-pinnate.

13 EKEBE'RGIA. Calyx 4-cleft. Petals 4. Stamens 10, connected into a short tube, which is entire at the apex, bearing sessile anthers on the inside of the tube. Berry globose, 5-seeded. Leaves impari-pinnate.

14 GUA'REA. Calyx 4-toothed. Petals 4. Stamens 8, connected into a tube, which is toothed at the apex, bearing the anthers at the throat on the inside. Stigma capitate. Capsule 4-celled, 4-valved. Seeds solitary in the cells, arillate. Leaves abruptly-pinnate.

15 EPICHA'RIS. Calyx urceolate, irregularly 5-6-cleft. Petals 4, rarely 5. Anthers 8-10, adnate to the throat of the toothed tube. Capsule subglobose, coriaceous, 2-4-valved, 2-4-celled, with a dissepiment in the middle of each valve. Seed solitary, incompletely covered by a fleshy aril. Leaves abruptly-pinnate.

16 DIDYMOCHE'TON. Calyx of 5 sepals. Petals 5, connate with the tube of the stamens at the base. Stamens 10, with the tube elongated and 10-toothed at the apex, bearing the anthers in the throat. Capsule ovate, 2-3-celled from abortion. Seeds solitary, axarillate. Leaves impari-pinnate.

17 APHANAMI'XIS. Calyx of 5 roundish sepals. Petals 3. Stamens 6, connate into a globose tube. Capsule 2-3-valved,

2-3-celled, with a dissepiment in the middle of each valve. Seed solitary, covered with lobed aril. Leaves impari-pinnate.

18 HE'YNEA. Calyx 5-toothed. Petals 5. Stamens 10, connected into a tube, bearing the anthers at the apex. Ovary 2-celled; cells 2-ovulate. Capsule 2-valved, 1-celled, 1-seeded from abortion. Leaves impari-pinnate.

19 CHISOCHE'TON. Calyx urceolate, nearly entire. Petals 4, linear. Anthers 6, rarely 7-8, inserted in the throat of the 6-cleft tube. Capsule 2-3-celled, rarely 1-celled, 2-3-valved, with a dissepiment in the middle of each valve. Seeds covered by an incomplete, fleshy aril. Leaves impari-pinnate.

20 CARA'PA. Calyx 4-5-cleft. Petals 4-5. Stamens 8-10, connected into a tube, which is toothed at the apex, bearing the anthers at the throat on the inside. Style short, crowned by a broad stigma. Drupe 4-5, furrowed or lobed, 4-5-valved, 4-5-seeded. Seeds very large, resembling those of the Mammee apple. Leaves abruptly-pinnate.

21 CALPA'NDRIA. Calyx of 4 permanent, unequal sepals. Petals 4. Stamens 25-40; filaments distinct at the base, but joined into a cylindrical tube at the apex, bearing the anthers in its throat. Capsule woody, subglobose, 3-valved, 3-celled, with a dissepiment in the middle of each valve, each cell containing 1-2 1-seeded nuts. Seeds without aril. Leaves simple.

22 ODONTA'NDRIA. Calyx 5-toothed. Petals 5, ovate. Filaments 10, connate at the base, the 5 opposite the petals sterile. Disk none. Style short, crowned by an obtuse stigma.

Tribe I.

MELIE'Æ (plants agreeing with *Mèlia* in many important characters). D. C. prod. 1. p. 619. Cells of fruit 1 or 2-seeded (f. 113. *f.*), destitute of albumen. Embryo inverted. Cotyledons flat, leafy.—Trees or shrubs, with alternate leaves; they are simple in the 5 first genera, and compound in the 2 last.

I. GERU'MA (*djerrum* is the Arabic name of this shrub). Forsk. descr. 62. D. C. prod. 1. p. 619.

LIN. SYST. *Monadélphia, Pentándria.* Calyx flat, 5-toothed. Petals 5, lanceolate, spreading. Stamens 5, erect, joined in a thick ring at the base. Anthers trigonal. Style 1. Stigmas 3. Capsules oval, 4-5-celled, 4-5-valved. Seeds 2 in each cell, inserted in trigonal pulp. (Forsk.)

1 G. A'LBA (Forsk. l. c.) ♄ ? G. Native of Arabia about Hadie. Leaves alternate, oval-oblong, somewhat serrated. Flowers white.

White Geruma. Shrub.

Cult. This shrub will grow freely in a mixture of loam and peat, and large cuttings will strike root freely in sand under a hand-glass.

II. TURRÆ'A (in honour of George Turra, an Italian botanist, and professor of botany in the university of Padua, author of several botanical works; died in 1607). Lin. mant. no. 1306. D. C. prod. 1. p. 620.

LIN. SYST. *Monadélphia, Decándria.* Calyx 5-cleft. Petals 5, very long, strap-formed. Stamens 10, joined into a very long tube, which is 10-cleft at the apex, with the anthers at the base of the lobes, or inserted between them. Style 1. Stigma thickish. Capsules 5-celled; cells 2-seeded; valves with a dissepiment in the middle of each. Leaves simple, rarely pinnate.

1 T. VI'RENS (Lin. mant. 237.) leaves elliptical-lanceolate, acuminated, emarginate, quite smooth; calyxes and fruit silky-villous. ♄. S. Native of the East Indies among heaps of Scoria on worn out volcanoes. Smith, icon. ined. 1. t. 10. Flowers white, disposed in small axillary spikes.

Var. β? Billardièrii (D. C. prod. 1. p. 620.) leaves ovate, lanceolate, acuminated, young ones pubescent, at length becoming smooth; calyx pubescent; stigma protruding much. ♄. S. Native of the East Indian Islands. Perhaps a proper species.

Green Turræa. Clt. 1820. Tree 20 feet.

2 T. PUBE'SCENS (Willd. spec. 2. p. 555.) leaves ovate, emarginate, pubescent beneath; calyxes villous. ♄. S. Native of the Island of Hainan. Hellen, in act. holm. 1788. p. 296. t. 10. f. 3. Flowers reddish, disposed in umbels.

Pubescent Turræa. Tree 20 feet.

3 T. MACULA'TA (Smith, icon. ined. 1. t. 11.) leaves ovate, acute, smooth; calyxes ciliated; petals smooth. ♄. S. Native of Madagascar. T. glàbra, Cav. diss. 7. p. 360. t. 204. Flowers 2 or 3 inches long, disposed in lateral bundles, with pale-red petals. Leaves with pale spots, especially at the nerves beneath, deciduous.

Spotted-leaved Turræa. Tree 20 feet?

4 T. SERI'CEA (Smith, icon. ined. 1. t. 12.) leaves ovate, bluntish, downy on both surfaces; calyxes, peduncles, and petals villous. ♄. S. Native of Madagascar. T. tomentòsa, Cav. l. c. p. 361. t. 205. f. 2. Petals linear, 4 inches long, longer than the staminiferous tube. Flowers red, large, rising from the lateral buds, usually solitary, seldom 3-4 together. Leaves deciduous.

Silky-calyxed Turræa. Tree 20 feet.

5 T. LANCEOLA'TA (Cav. diss. 7. p. 361. t. 205. f. 1.) leaves lanceolate, bluntish at both ends, smooth; segments of calyx lanceolate, longer than its tube; petals linear, shorter than the staminiferous tube. ♄. S. Native of Madagascar. Peduncles axillary, 1-2-flowered. Flowers an inch long. Petals yellow, with scarlet bases. Capsules clothed with a rufous down.

Lanceolate-leaved Turræa. Shrub.

6 T. RI'GIDA (Vent. choix. t. 48.) leaves elliptical, acuminated, with revolute margins, stiff, shining; calyxes and petals smoothish; branches straight. ♄. S. Native of the Mauritius. Petals yellow, rather pilose, an inch long, a little longer than the staminiferous tube.

Stiff-leaved Turræa. Clt. 1816. Tree 50 feet.

7 T. HETEROPHY'LLA (Smith in Rees' cycl. 36. no. 6.) leaves ovate, undivided or 3-lobed, with villous veins; calyxes hairy, with short teeth; petals reddish, somewhat spatulate, longer than the staminiferous tube. ♄. S. Native of Guinea at Cape Coast.

Variable-leaved Turræa. Tree 20 feet?

8 T. QUERCIFÒLIA; leaves cuneated at the base, triangularly 3-lobed at the top, somewhat 5-lobed; pedicels solitary, axillary, 1-flowered. ♄. S. Native of Sierra Leone. Flowers apparently red.

Oak-leaved Turræa. Tree.

9 T. PINNA'TA (Wall. pl. asiat. rar. 2. t. 119.) leaves impari-pinnate, with 2-3 pairs of stalked, cordate-lanceolate, acute, quite entire, pubescent leaflets; calyx pubescent, with ligulate, obtuse segments; claws of petals connate. ♄. S. Native of the East Indies. Corolla pink.

Pinnate-leaved Turræa. Tree.

10 T.? HERBA'CEA (Poir. dict. 8. p. 187.) leaves elliptic-lanceolate, obtuse, smooth; flowers solitary; calyxes striated, smooth. ⊙? S. Native of Rio Janeiro. Petals jagged at the apex. Filaments shorter than the corolla. This is probably a distinct genus, and not belonging to *Meliàceæ*.

Herbaceous Turræa. Pl.

Cult. The species of this genus will grow well in a mixture of loam, peat, and sand, and ripened cuttings will strike root in

sand under a hand-glass, in heat. The last species can only be raised from seeds.

III. QUIVI'SIA (one of the species is called *Bois de quivi* in the Isle of France). Comm. in Juss. gen. 264. D. C. prod. 1. p. 620.—Gilibértia, Gmel. syst. 682.

Lin. syst. *Monadélphia, Octo-Decándria.* Calyx urceolate, 4-5-toothed. Petals 4-5, short, silky on the outside. Anthers 8-10, seated on the top of a short tube. Stigma capitate. Capsule coriaceous, 4-5-celled, opening by 4-5 valves at the apex; valves with a dissepiment in the middle of each; cells 2-seeded. Leaves simple.

1 Q. deca'ndra (Cav. diss. 7. p. 367. t. 211.) leaves alternate, oblong, entire, tapering to both ends; peduncles axillary, racemose. ♄. S. Native of the Mauritius. Q. racemòsa, Pers. ench. 1. p. 468. Gilibértia decándra, Willd. spec. 2. p. 551. Flowers white.

Decandrous Quivisia. Tree 20 feet.

2 Q. oppositifòlia (Cav. diss. 7. p. 368. t. 214.) leaves opposite, ovate, quite entire, smooth; peduncles axillary, 3-5-flowered. ♄. S. Native of the Mauritius. Gilibértia oppositifòlia, Willd. l. c. Flowers white.

Opposite-leaved Quivisia. Tree 15 feet.

3 Q. ova'ta (Cav. diss. 7. p. 368. t. 212.) leaves alternate, obovate, obtuse, entire; pedicels tern, axillary, 1-flowered; fruit downy. ♄. S. Native of the Island of Bourbon. Gilibértia ovàta, Willd. spec. 2. p. 552.—Gilibértia rùtilans, Smith in Rees' cycl. 16. no. 4. is hardly distinct from this, unless that the flowers are somewhat racemose. Flowers white.

Ovate-leaved Quivisia. Shrub 6 feet.

4 Q. heterophy'lla (Cav. l. c. t. 213.) leaves alternate, oval or obovate, entire, sinuately-toothed and pinnatifid; pedicels in pairs, axillary, 1-flowered. ♄. S. Native of the Mauritius. Bory. voy. 1. p. 196. Flowers white?

Variable-leaved Quivisia. Clt. 1822. Shrub 6 feet.

Cult. These trees will succeed well in a mixture of loam and peat. Ripened cuttings will root freely in sand under a hand-glass, in heat.

IV. STRIGI'LIA (from *strigilis*, a comb; resemblance in the denticulations of the anthers). Cav. diss. 7. p. 358. D. C. prod. 1. p. 621.—Foveolària, Ruiz et Pav. syst. fl. per. 99.—Tremánthus, Pers. ench. 1. p. 467.

Lin. syst. *Monadélphia, Decándria.* Calyx campanulate, 5-toothed. Petals 5, somewhat joined at the base, with linear segments, which are silky on the outside. Stamens 10; filaments joined into a tube; anthers rough from stellate-setaceous dots. Drupe ovate, somewhat trilocular, 1-seeded from abortion (Ruiz et Pav.), but according to Cavanilles 6-celled; cells 1-seeded. This genus comes very near to *Styrax*, but differs in the anthers being sessile at the top of the tube, not with the filaments free at the apex as in that genus. The leaves in all the species are furnished with gland-bearing hollows.

1 S. racemòsa (Cav. diss. 7. p. 358. t. 201.) plant clothed with rufous hairs; leaves oblong, with a short acumen, with revolute edges, glandless beneath, velvety from rusty hairs; racemes solitary, erect; flowers secund. ♄. S. Native of Peru. Tremánthus ferrugíneus, Pers. ench. 1. p. 467. Foveolària ferrugínea, Ruiz et Pav. fl. per. 4. t. 392. Calyx 5-toothed. Flowers probably white. Fruit hairy.

Racemose-flowered Strigilia. Tree 80 feet.

2 S. oblónga (Ruiz et Pav. l. c. and fl. per. 4. t. 391. under *Foveolària*,) leaves oblong, acuminated, smooth; racemes panicled, erect, solitary or in pairs. ♄. S. Native of Peru. Calyx 5-toothed. Flowers white? Fruit large, obovate.

Oblong-leaved Strigilia. Tree 90 feet.

3 S. ova'ta (Ruiz et Pav. l. c. and fl. per. 4. t. 390. under *Foveolària*,) leaves ovate-oblong, acuminated, smooth; furnished with very small glanduliferous hollows; panicles axillary, usually 2-3 together. ♄. S. Native of Peru. Flowers white.

Ovate-leaved Strigilia. Tree 60 feet.

4 S. cròcea (Ruiz et Pav. fl. per. 4. t. 392. under *Foveolària*,) leaves oblong, broad, acuminated; panicles axillary, usually twin; anthers beset with stellate bristles; calyx entire or nearly so. ♄. S. Native of Peru.

Copper-coloured Strigilia. Tree.

5 S. corda'ta (Ruiz et Pav. l. c. and fl. per. 4. t. 389. under *Foveolària*,) leaves cordate, ovate, acute, furnished with glanduliferous hollows; racemes panicled, axillary, usually 3 together. ♄. S. Native of Peru in groves. Flowers probably white.

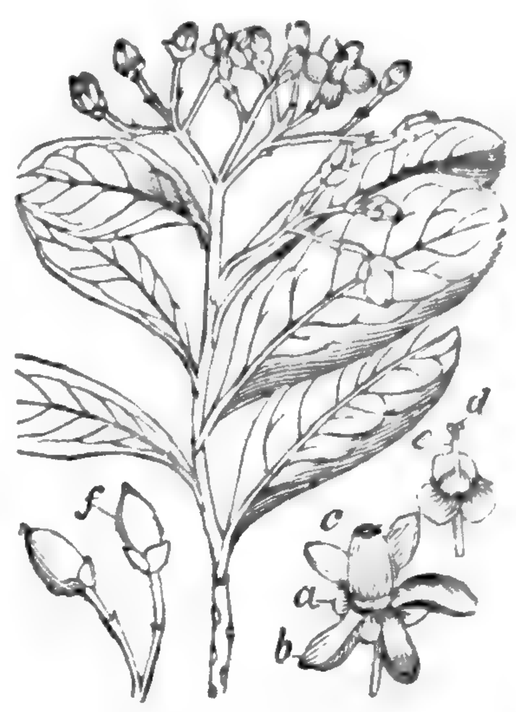
Cordate-leaved Strigilia. Tree 60 feet.

Cult. These trees will succeed in a mixture of loam and peat, and ripened cuttings will strike root in sand under a hand-glass, in heat.

V. CANE'LLA (from *canna*, a reed; in allusion to the rolled bark like cinnamon). Browne, jam. 215. D. C. prod. 1. p. 563. —Winteràna, Lin. gen. 598.

Lin. syst. *Monadélphia, Deca-Icosándria.* Calyx of 5 sepals (f. 113. *a*.). Petals 5 (f. 113. *b*.), somewhat coriaceous, of a bluish-glaucous colour, twisted in the bud. Stamens joined into a tube (f. 113. *c*.); anthers 10-15 (f. 113. *c*.), fixed to the inside of the tube. Stigmas 3. Berry 3-celled, but sometimes only 1-celled from abortion; cells 1-2-seeded. Embryo curved (according to Gært.), enwrapped in a fleshy seed-cover, with linear cotyledons. Leaves simple.

FIG. 113.



1 C. a'lba (Murr. syst. 4. p. 443.) leaves alternate, obovate, cuneated at the base, white or glaucous beneath, somewhat coriaceous, sometimes full of pellucid dots; flowers terminal, cymose; anthers 15. ♄. S. Native of the Caribbee Islands and the mainland of South America in woods. Winteràna canélla, Lin. spec. 636. C. álba, Swartz in Lin. trans. lond. 1. p. 96. t. 8.—Browne, jam. p. 215. t. 37. f. 3. C. Winteràna, Gært. fruct. 1. p. 373. Laúrus Winteràna, Lin. spec. ed. 1. p. 371. Córtex Winteràna, Blackw. herb. t. 206.—Pluk. phyt. t. 160. f. 7.—Sloan. jam. 2. p. 87. t. 191. f. 2.

This is a tree from 10 to 15 feet high, branched only at the top. The bark is whitish, by which it is known at first sight in the woods. The leaves are entire, glaucous beneath, and are very like those of the laurel, shining above. The flowers grow at the tops of the branches in clusters, but upon divided peduncles; they are small and seldom open, of a violet colour; the calyx is permanent; the petals are coriaceous and deciduous. The berry is fleshy, smooth, black; the receptacle is the central angle of the cells. The seeds are usually globular and beaked, always very smooth, black, and shining, the outer skin is crustaceous, thin, and brittle; the inner of a bay-brown colour. The whole tree is very aromatic, and when in blossom perfumes the whole neighbourhood. The flowers dried, and softened again in warm water, have a fragrant odour, nearly approaching to that of musk. The leaves have a strong smell of laurel. The white-bellied and bald-pate pigeons feed greedily upon the berries, and thence acquire their peculiar flavour. The bark of this tree is brought

to Europe in long quills, which are about three quarters of an inch in diameter, somewhat thicker than cinnamon, it is of a whitish or light-brown colour, with a yellowish hue. In taste it is moderately warm, aromatic, and bitterish; its smell is agreeable, and resembles that of cloves. Its virtues are extracted most perfectly by proof spirits. This bark has now superseded that of *Drỳmis Winteri*. It has been supposed to possess considerable virtues, and is said to be useful in scorbutic and many other complaints. It is now, however, considered merely in the light of an aromatic, and like many other spices is employed for the purpose of correcting disagreeable drugs.

White-barked Canella. Clt. 1735. Tree 15 feet.

2 C. axilla'ris (Nees. et Mart. in nov. act. bonn. 12. p. 18. t. 3.) flowers axillary, nodding, decandrous. ♄. S. Native of Brazil. Bark white, smooth. Leaves elliptic, obtuse, quite entire, smooth, paler beneath, coriaceous. Calyx of 3 rounded lobes. Petals 5, sessile, ovate-orbicular. Crown of 5 obovate, ciliated segments, alternating with the petals. Tube short, girding the germen, bearing 10 sessile anthers; anthers 2-celled. Ovary ovate. The bark of this tree has the same properties as that of *C. álba*.

Axillary-flowered Canella. Tree 20 feet.

3 C. laurifòlia (Lodd. cat. Sweet, hort. brit. p. 65.) leaves obovate, lanceolate, narrower, green beneath; flowers terminal. ♄. S. Native of the West Indies.

Laurel-leaved Canella. Clt. 1817. Tree 15 feet.

Cult. These valuable trees will thrive well in a mixture of loam, peat, and sand; and well-ripened cuttings, taken off at a joint, will root in sand under a hand-glass. in a moist heat, but care should be taken not to deprive them of any of their leaves. Mr. Sweet says that large old cuttings are best.

VI. CIPADE'SSA (meaning unknown). Blum. bijdr. 4th number.

Lin. syst. *Decándria, Monogýnia.* Calyx small, obsoletely 5-toothed. Petals 5; filaments 10, nearly the length of the petals, emarginate, connected into a tube at the base; anthers adnate inside. Ovary girded by a ring, 5-celled; cells containing 2 ovulæ. Style short, crowned by a capitate, 5-toothed stigma. Capsule globose, 5-furrowed, containing a 5-celled, 5-seeded nucleus. A shrub with pinnate leaves.

1 C. fruticòsa (Blum. l. c.). ♄. S. Native of Java. Lánsium domésticum, Jack, mal. mis. ex Spreng. syst. append. p. 252.

Shrubby Cipadessa. Shrub.

Cult. A mixture of loam and sand will suit this shrub well, and ripened cuttings will root in sand under a hand-glass, in heat.

VII. SANDO'RICUM (altered from *Santoor*, the Malay name of the tree). Cav. diss. 7. p. 359. D. C. prod. 1. p. 621.

Lin. syst. *Monadélphia, Decándria.* Calyx short, bluntly 5-toothed. Petals 5, linear. Stamens joined into a 10-toothed tube, and bearing the anthers within the tube. Stigmas 5, bifid. Berry in the shape of an apple, containing 5 ovate-compressed nuts, which are 2-valved and 1-seeded at the base. Seeds arched at the hilum.—Trees with trifoliate leaves, that is to say, impari-pinnate, with an odd leaflet. Flowers yellow.

1 S. I'ndicum (Cav. diss. 7. p. 359. t. 202. and 203. Roxb. cor. 3. t. 261.) leaflets ovate, oblong, entire, pubescent. ♄. S. Native of the Philippine and Molucca islands and other parts of the East Indies. Sandóricum, Rumph. amb. 1. t. 61. Lam. ill. t. 350. Hantol, Lam. dict. This last is its name in the Philippine islands. Racemes axillary, somewhat panicled. Flowers yellow. Fruit fleshy, agreeably acid.

Indian Sandal-tree. Clt. 1820. Tree 40 feet.

2 S. serra'tum; leaflets ovate-elliptic, acuminated, repandly-crenated. ♄. S. Native of the East Indies. Differs from *S. I'ndicum* in the leaves being crenate, not entire.

Serrate-leaved Sandal-wood. Tree.

Cult. These trees will thrive in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

VIII. ME'LIA (μελια the Greek name for the ash; resemblance in leaves). Lin. gen. no. 576. D. C. prod. 1. p. 621.

Lin. syst. *Monadélphia, Decándria.* Calyx small, 5-cleft (f. 114. *a.*). Petals 5 (f. 114. *b.*), oblong-linear, spreading. Stamens 10, with the filaments joined into a 20-toothed tube (f. 114. *c.*), bearing the anthers on the inside at the throat. Ovary seated on a somewhat stipitate torus. Style filiform. Stigma capitate, 5-angled. Drupe ovate, containing a 5-furrowed, 5-celled nucleus, each cell containing 1 seed. Albumen fleshy, with flat leafy cotyledons and a superior radicle.—Trees with impari-pinnate or bipinnate leaves, and axillary panicles of white or blue flowers, with reddish or purplish tube, and yellow anthers.

1 M. azedara'ch (Lin. spec. 550.) leaves bipinnate; leaflets deeply serrated, somewhat quinate. ♄. G. Native of Ceylon and Syria. Cav. diss. 7. p. 363. t. 207. Lam. ill. 372. Comm. hort. 1. t. 70. Leaves deciduous in autumn, remaining so all the winter in Europe, but within the tropics they are evergreen. Petals violet; tube of stamens reddish. Fruit the size of a cherry, pale-yellow when ripe. The pulp surrounding the nucleus is poisonous, and when mixed with grease is said to kill dogs. The seeds are bored and strung for beads by the Roman Catholics. *Azadaracht* is a name under which Avicennes speaks of a poisonous tree.

Azedarach Bead-tree. Fl. Jul. Aug. Clt. 1659. Tree 40 ft.

2 M. robu'sta (Roxb. hort. beng. p. 33.) leaves bipinnate, especially with the leaflets either pinnate or ternate, membranous, roundish or oblong-lanceolate, acuminated, toothed; young leaves, branches, and petioles covered with a kind of scurfy pubescence; panicles axillary. ♄. S. Native of Malabar. Flowers probably bluish.

Robust Bead-tree. Clt. 1820. Tree 40 feet.

3 M. austra'lis (Sweet, hort. brit. ed. 2. p. 85.) leaves bipinnate; leaflets ovate, acuminated, crenate-toothed; panicles axillary. ♄. G. Native of New Holland. Leaves sometimes pinnate.

Southern Bead-tree. Clt. 1810. Tree 20 feet.

4 M. Japónica; leaves pinnate; leaflets ovate, acuminated, slightly crenate; panicles axillary, divaricated. ♄. G. Native of Japan. Differs from *M. Azedarách*, in the leaves being slightly crenated, not deeply toothed, and in the panicles being divaricate, not racemose. Flowers the colour of those of *M. Azedarách*.

Japan Bead-tree. Tree 30 feet.

5 M. sempervírens (Swartz, fl. ind. occ. 2. p. 737.) leaves bipinnate; leaflets deeply toothed, usually 7 in number, when young shining; petioles roundish at the base. ♄. G. Native of Jamaica in hedges. Ker. bot. reg. 643. M. Azédarach β, Lin. spec. 550. Smaller than the *M. Azédarach*, usually flowering the second year from seed, and the leaves are later of falling off in the autumn. This tree is known in the West Indies by the name of *Indian lilac*. Flowers bluish.

Ever-green Bead-tree. Fl. Jul. Aug. Clt. 1656. Tr. 25 ft.

6 M. compósita (Willd. spec. 3. p. 559.) leaves somewhat bipinnate, but at the apex of the petioles they are simply pinnate; leaflets almost entire, lower ones ternate; peduncles, calyxes, and petals rather velvety. ♄. S. Native of the East Indies, the Island of Timor, and is now cultivated in the Canary Islands.—M. dùbia, Cav. diss. 7. 364. is probably distinct from this, but is not sufficiently known.—Burm. ind. t. 24. Flowers with whitish or pinkish petals, and the tube of the stamens purple. Leaves falling off in winter.

Compound-leaved Bead-tree. Fl. Jul. Aug. Clt. 1810. Tr. 30 ft.

7 M. argu'ta (D. C. prod. 1. p. 622.) leaves bipinnate; leaflets oblong-lanceolate, acuminated, sharply and awnedly serrated; calyxes and pedicels rather velvety. ♄. S. Native of the Moluccas. Flowers unknown.

Sharp-serrated-leaved Bead-tree. Tree 20 feet.

8 M. Azadira'chta (Lin. spec. 550.) leaves pinnate; petioles terete; leaflets ovate-lanceolate, unequal at the base, acuminated, dentately-serrated. ♄. S. Native of the East Indies. Cav. diss. 7. p. 364. t. 208.—Burm. zeyl. t. 15.—Rheed. mal. 4. t. 52. Flowers bluish. Fruit when ripe of a purplish colour, about the size of a small olive, the pulp is oily, acrid, and bitter as well as the bark. *Azadarachta* is a name under which Avicennes speaks of a poisonous tree.

FIG. 114.

Azadirachta Bead-tree. Fl. July, Aug. Clt. 1759. Tr. 20 ft.

9 M. baccífera (Roth. nov. spec. p. 218.) leaves pinnate; petioles round; leaflets ovate, coarsely and bluntly serrated above the middle, equal at the base. ♄. S. Native of the East Indies. Flower with pinkish petals, and a purple staminiferous tube.

Berry-bearing Bead-tree. Tree 20 feet.

10 M. exce'lsa (Jack, mal. misc. vol. 1. no. 1. p. 12.) leaves pinnate; leaflets quite entire; panicles crowded, axillary, a little longer than the leaves. ♄. S. Native of Pulo-Penang. Trichília excélsa, Spreng. syst. app. p. 252. Flowers white. Anthers 10, in the throat of a 10-toothed tube.

Lofty Bead-tree. Clt. 1819. Tree 50 feet.

11 M. Guinee'nsis (G. Don, in Loud. hort. brit. p. 168.) leaves bipinnate; leaflets deeply and coarsely serrated; flowers in terminal, divaricate panicles. ♄. S. Native of Guinea, where it is called by the English settlers lilac. Flowers with white or pinkish petals, and a purplish tube of stamens. Fruit small, pale-yellow when ripe; the pulp is poisonous.

Guinea Bead-tree or Lilac. Fl. Ju. Aug. Clt. 1824. Tr. 30 ft.

† *Species only known by name.*

12 M. supe'rba (Roxb. hort. beng. p. 33.). ♄. S. Native of the East Indies at Soonda.

Superb Bead-tree. Clt. 1810. Tree 30 feet.

13 M. tomentòsa (Roxb. l. c. p. 90.). ♄. S. Native of Prince of Wales Island.

Downy Bead-tree. Tree 30 feet.

Cult. These fine trees will thrive well in a mixture of loam, peat, and sand; and large ripened cuttings will strike root in sand under a hand-glass, but those of the stove species require to be placed in a moderate heat. It must be observed that the leaves should not be shortened. Seeds, if they can be procured, is the best mode of increasing the species.

Tribe II.

TRICHILIE'Æ (plants agreeing with *Trichília* in important characters). D. C. prod. 1. p. 622. Cells of fruit 1-2-seeded. Seeds without albumen. Embryo inverted. Cotyledons very thick.

IX. TRICHI'LIA (from τριχα, *tricha*, by threes, which comes from τρεις; the stigma is 3-lobed, and the capsule is usually 3-valved and 3-celled). Lin. gen. no. 528. D. C. prod. 1. p. 622.—Trichília, Elcàja, and Portèsia of Juss.

Lin. syst. *Octo-Decándria*, *Monogýnia*, or *Monadélphia*, *Octo-Decándria*. Calyx 4-5-toothed or lobed (f. 115. *a.*). Petals 4-5 (f. 115. *b.*) -ovate or rather oblong, connected at the base. Stamens 8 or 10 (f. 115. *d.*), filaments flat, sometimes distinct (f. 115. *d.*), sometimes closely joined into a tube, bearing the anthers at the throat or between the teeth of the tube. Style simple, crowned by a capitate 3-lobed stigma. Capsules 3-valved, 3-celled (rarely 2-valved, 2-celled); valves bearing a dissepiment in the middle of each; cells 1-2-seeded. Seeds baccate, arillate. Embryo inverted, with very thick cotyledons. Trees and shrubs, with alternate, impari-pinnate, or trifoliate leaves, and axillary racemes or panicles of white flowers, sometimes disposed into a crowded, sessile head.

* *Leaves pinnate.*

1 T. hírta (Lin. spec. 550.) leaves impari-pinnate, with 3 or 4 pairs of elliptical, acuminated, smooth leaflets; racemes crowded; filaments of stamens truly joined into a tube. ♄. S. Native of Jamaica, plentiful between Passage Fort and St. Jago de la Vega. Flowers greenish-white, with purple-headed stamens.

Hairy Trichilia. Fl. June, July. Clt. 1800. Tree 20 feet.

FIG. 115.

2 T. spondioìdes (Swartz, fl. ind. occ. 730.) leaves impari-pinnate, with 5 or 10 pairs of ovate-lanceolate leaflets, which are somewhat hairy on the margins; racemes panicled, axillary; filaments of stamens almost distinct. ♄. S. Native of Jamaica and St. Domingo on the mountains. Jacq. hort. schoenbr. 1. t. 102.—Sloane, hist. 2. t. 210. f. 2-3. Flowers small, whitish, odorous. The French in the West Indies called it *Bastard Monbin*.

Spondias-like Trichilia. Fl. Sept. Dec. Clt. 1800. Tr. 20 ft.

3 T. affìnis (St. Hil. fl. bras. 2. p. 78.) leaflets 9, rarely 8 or fewer, lanceolate-ovate, obscurely acuminated, puberulous on the nerves beneath; panicles not half so long as the leaves, usually twin; petals connected at the base, hardly puberulous; filaments connate into an 8-10-toothed tube, bearing the anthers between the teeth. ♄. S. Native of Brazil in the province of the Missions. Petals yellowish.

Allied Trichilia. Fl. Mar. Shrub 8 feet.

4 T. Richardia'na (St. Hil. fl. bras. 2. p. 78.) leaves impari-pinnate, with 3 pairs of lanceolate, bluntly acuminated leaflets, which are pilose in the axils of the veins beneath; panicles loose and few-flowered, rather longer than the petioles; petals distinct, smooth; filaments connate into an 8-toothed tube, bearing the anthers between the teeth. ♄. S. Native of Brazil near Rio Janeiro.

Richard's Trichilia. Tree.

5 T. tomentòsa (H. B. et Kunth, nov. gen. amer. 5. p. 215.) leaves impari-pinnate, with 12-15 pairs of oblong, somewhat acuminated leaflets, which are smoothish above and clothed with short, hoary down beneath; panicles axillary, longer than the petioles. ♄. S. Native of Peru on the western declivities of the Andes. Flowers whitish. Filaments connate into a tube.

Tomentose Trichilia. Tree 30 feet.

6 T. quadri'juga (H. B. et Kunth, nov. gen. amer. 5. p. 215.) leaves impari-pinnate with usually 4 pairs of oblong, acuminated, smooth leaflets; panicles axillary, longer than the petioles; filaments of stamens hairy on the inside; capsules somewhat pear-shaped. ♄. S. Native of South America on the banks of the river Magdalena. Flowers whitish.

Four-paired-leafletted Trichilia. Tree 30 feet.

7 T. eme'tica (Vahl. symb. 1. p. 31.) leaves impari-pinnate, with 4 pairs of elliptical leaflets, which are villous on the under surface; flowers decandrous, crowded; filaments of stamens joined to the middle. ♄. G. Native of Arabia on the Yemen mountains. Elcàja, Forsk. descr. 127. Flowers whitish. The fruit of this tree, mixed with perfumes, is used by the Arabian women for washing their hair. The fresh seeds are made into an ointment with those of *Sésamum* against the itch. Forsköl found mention of this tree in an Arabian book by the name of *Djouz-Elcai*, whence his generic name *Elcàja*.

Emetic Trichilia. Tree 30 feet.

8 T. Havanne'nsis (Jacq. amer. 129. t. 175. f. 38. pict. p. 65. t. 260. f. 35.) leaves impari-pinnate, with 2 or 3 pairs of obovate, smooth leaflets, outer ones largest; racemes cymose, axillary, crowded, shorter than the petioles. ♄. S. Native of Cuba in mountain woods, and near Xalapa in Mexico. H. B. et Kunth, nov. gen. amer. 5. p. 216. T. glàbra, Lin. syst. nat. 13. p. 294. Flowers white. Stamens distinct at apex. All parts of the tree have an unpleasant smell when bruised.

Havannah Trichilia. Clt. 1794. Tree 30 feet.

9 T. Cati'gua (St. Hil. fl. bras. 2. p. 77.) leaves pinnate; leaflets 9-12, lanceolate, or lanceolate-ovate, smooth; panicles much shorter than the leaves, 2-3-ternate; petals connected at the base, spreading, densely pubescent; filaments connate into an 8-10-toothed tube, and bearing the anthers between the teeth. ♄. S. Native of Brazil in the province of Minas Geraes, where it is called *Catigua*. Wood hard.

Var. β, parviflòra (St. Hil. l. c.) leaflets 11-15; panicles shorter; flowers not half the size. In the province of Goyaz.

Catigua Trichilia. Fl. April, June. Tree 40 feet.

10 T. odora'ta (Andr. bot. rep. t. 637.) leaves impari-pinnate, with 3-4 pairs of smooth, ovate-oblong, wavy leaflets; racemes axillary, glomerate; stamens bifid, distinct. ♄. S. Native of St. Vincent? Hook, exot. fl. t. 128. Flowers greenish-white, sweet-scented, 4-petalled, and with a 4-toothed calyx.

Sweet-scented Trichilia. Clt. 1801. Tree 20 feet.

11 T. pa'llida (Swartz, fl. ind. occ. 733.) leaves pinnate, with 3 pairs of ovate-lanceolate, acute, smooth, membranaceous leaflets; racemes axillary, and somewhat terminal; flowers octandrous; capsules 2-valved. ♄. S. Native of Hispaniola and Mexico in bushy places on the mountains. Portèsia ovàta, Cav. diss. 7. p. 369. t. 215.? Lam. ill. t. 302. f. 1. Flowers white. Filaments distinct almost to the base.

Pale Trichilia. Fl. Feb. Mar. Tree 16 feet.

12 T. moscha'ta (Swartz, fl. ind. occ. p. 735.) leaves pinnate, with alternate, ovate, acuminated, smooth leaflets; racemes axillary; anthers sessile on the top of the tube; capsules usually 1-seeded. ♄. S. Native on the north side of Jamaica in woods, where it is called *musk-wood*, on account of the smell of every part of the tree when rubbed. Flowers whitish.

Musk Trichilia. Fl. May. Tree 20 feet.

13 T. termina'lis (Jacq. amer. 130.) leaves pinnate, with 3 pairs of lanceolate, blunt, shining leaflets; racemes panicled; lobes of calyx profoundly cut, much spreading; filaments of stamens distinct. ♄. S. Native of Jamaica near Kingston. Flowers white.

Terminal Trichilia. Tree 20 feet.

14 T. glandulòsa (Smith, in Rees' cycl. p. 36. no. 10.) leaves pinnate, with 5 or 7 elliptical-lanceolate, bluntly acuminated leaflets, hairy at the origin of the veins beneath; flowers octandrous; tube of stamens entire; stigma depressed. ♄. G. Native of New Holland at Port Jackson. T. octándra, Sol. mss. Flowers whitish.

Glandular Trichilia. Fl. Jul. Aug. Clt. 1821. Tree 20 ft.

15 T. bi'juga (Labill. nov. cal. t. 54.) leaves abruptly pinnate, with 2 pairs of oblong, waved, smooth leaflets; panicle loose, shorter than the leaves; anthers 10, in the throat of a toothed tube. ♄. G. Native of New Caledonia. Petals yellow.

Two-paired-leafletted Trichilia. Tree 30 feet.

16 T. specta'bilis (Forst. prod. no. 188.) leaves pinnate, with obovate leaflets; racemes axillary, supra-decompound. ♄. G. Native of New Zealand. Flowers white.

Shewy Trichilia. Tree 20 feet?

17 T. allia'cea (Forst. prod. no. 189.) leaves pinnate, with lanceolate, acute leaflets; racemes axillary, supra-decompound. ♄. G. Native of the island of Namoka in the South Seas. Dysóxylum alliàceum and longifòlium, Blum. bijdr. 4th number. Flowers white. All parts of the tree smells of garlic when bruised.

Garlic-scented Trichilia. Tree 20 feet.

18 T. e'legans (St. Hil. fl. bras. 2. p. 79. t. 98.) leaves impari-pinnate, with 1-2-3 pairs of lanceolate, bluntish leaflets, which are pilose in the axils of the veins beneath; panicles raceme-formed, about equal in length to the petioles; petals distinct, smooth; filaments connate into an 8-10-toothed tube, bearing the anthers between the teeth. ♄. S. Native of Brazil in woods not far from the town of St. Paul. Petals whitish.

Elegant Trichilia. Fl. Nov. Tree 15 feet.

19 T. heterophy'lla (Willd. spec. 2. p. 554.) leaves pinnate and ternate, with ovate, acuminated, smooth leaflets; racemes axillary; flowers octandrous. ♄. S. Native of Madagascar. Portèsia mucronàta, Cav. diss. 7. p. 370. t. 216. Lam. ill. t. 302. f. 2. Flowers yellowish. Anthers sessile between the teeth of the tube.

Variable-leaved Trichilia. Tree 20 feet.

20 T. monta'na (H. B. et Kunth, nov. gen. 7. p. 226.) leaves impari-pinnate, with 1-2 pairs of oblong, acuminated, smooth leaflets, which are netted beneath; panicles axillary, solitary, or twin almost simple, longer than the petioles. ♄. S. Native of New Granada on Mount Quindiu. Flowers whitish.

Mountain Trichilia. Tree 20 feet.

* * *Leaves trifoliate.*

21 T. trifolia'ta (Lin. spec. 551.) leaves trifoliate; leaflets obovate, shining. ♄. S. Native of Curaçoa in dry grassy places.—Jacq. amer. 129. t. 82. pict. 65. t. 123. T. Halèsia, Læfl. itin. 188. Flowers white. All parts of the tree have an unpleasant smell. The negresses use a decoction of the roots to procure abortion. In Curaçoa the tree is called *Kerse-boom* or Cherry-tree. The Spaniards also call it *Cerasso-macho* or Male-cherry.

Trifoliate Trichilia. Shrub 6-10 feet.

22 T. pteleæfòlia (St. Hil. fl. bras. 2. p. 80. t. 99.) leaves ternate; leaflets obovate, shortly and bluntly acuminated, membranous, puberulous; panicles shorter than the petioles; petals distinct, smooth; filaments joined into a tube at the base, distinct above, bidentate at the top; cells of ovary only containing 1 ovula. ♄. S. Native of Brazil in the province of Minas Geraes. Flowers small, white.

Ptelea-leaved Trichilia. Fl. Oct. Shrub.

23 T. nervòsa (Vahl. symb. 1. p. 31.) leaves trifoliate; leaflets ovate. ♄. S. Native of Java. Mèlia Koatjápa, Burm. ind. 101. exclusive of the synonymes. Flowers whitish.

Nerved-leaved Trichilia. Tree 20 feet.

24 T. venòsa (Spreng. syst. 3. p. 68.) leaves ternate; leaflets ovate-roundish, obtuse, with parallel veins, smooth; flowers panicled, smooth. ♄. S. Native of the island of Mascarin.

Veiny-leaved Trichilia. Shrub.

25 T. Portorice'nsis (Spreng. syst. 3. p. 68.) leaves ternate; leaflets oblong, acutish, repand, smooth on both surfaces, shining; petioles channelled; racemes corymbose, few-flowered. ♄. S. Native of Porto-Rico.

Porto-Rico Trichilia. Tree.

* * * *Leaves simple. Doubtful species, probably referable to a separate genus.*

26 T.? spinòsa (Willd. spec. 2. p. 554.) leaves simple, ovate, emarginate; branches spinose; berry 3-celled. ♄. S. Native of the East Indies. Turræ'a vìrens, Hell. act. holm. 1788. p. 294. t. 10. f. 1. Flowers white? Probably a species of *Limònia?*

Spiny Trichilia. Shrub?

27 T.? ine'rmis (Spreng. neue. entd. 1. p. 285.) leaves simple, obovate, retuse, coriaceous, shining, quite entire; branches unarmed; capsules 3-celled. ♄. S. Native of Brazil. This is probably a species of *Turræ'a*. Flowers white?

Unarmed Trichilia. Tree?

28 T.? sca'ndens (Lunan. hort. jam. 2. p. 319.) leaves simple, lanceolate, ovate, with revolute margins; flowers spiked, each with 4 styles. ♄. ◡. S. Native of Jamaica. Flowers whitish.

Climbing Trichilia. Shrub cl.

29 T. simplicifòlia (Spreng. syst. 3. p. 69.) leaves oblong, acuminated, smooth; petioles thickened at the apex; flowers panicled, octandrous. ♄. S. Native of Martinico. Hedwígia simplicifòlia, N. E.

Simple-leaved Trichilia. Shrub.

Cult. These trees will thrive well in a mixture of loam and peat, and ripened cuttings, without shortening their leaves, will strike root in sand under a hand-glass, in heat.

X. MI'LNEA (in honour of Colin Milne, LL.D. author of a kind of Botanical Dictionary, Institutes of Botany, and numerous other works). Roxb. fl. ind. 2. p. 430

Lin. syst. *Monadélphia, Pentándria.* Calyx 5-parted. Petals 5. Urceolus with 5 anthers round its inside at the throat. Ovary 3-celled, containing 1-2 ovulæ in each cell, which are attached to the central column, without albumen. Berry round-oval, large, 3-celled, usually 1-seeded.—A middle-sized tree, with unequally-pinnate leaves, with about 3 or 6 pairs of nearly opposite, entire, smooth leaflets, without stipulas, and axillary panicles of white flowers. Seeds solitary, inserted in a complete, thick, lucid, edible aril, like that of the *Litchi* of the Chinese.

1 M. edu'lis (Roxb. l. c.) ♄. S. Native of the East Indies on the Garrow Hills, and of the Silhet district, where it is called *Gumi* by the natives, who eat the aril which surrounds the seed.

Eatable Milnea. Tree 20 feet.

Cult. A mixture of loam and sand will answer this tree; and ripened cuttings will root in sand under a hand-glass, in heat.

XI. GONIOSCHE'TON (from *γωνια, gonia,* an angle, and *χιτων, chiton,* an inner coat; in allusion to the staminiferous tube being angular). Blum. bijdr. 4th number.

Lin. syst. *Monadélphia, Decándria.* Calyx small, obsoletely 5-toothed. Petals 5, oblong, spreading. Stamens 10, joined into a short, angular, toothed, conic tube, bearing the anthers in its throat. Ovary girded by a membranous urceolus, 5-celled; cells 2-ovulate. Style filiform, crowned by a peltate, angular stigma. Capsule globose, coriaceous, 3-4-valved, 3-4-celled from abortion. Seed solitary, exarillate, exalbuminose, fixed to the inner angle. Cotyledons large.—A tree with impari-pinnate leaves, and compound axillary racemes of flowers.

1 G. arbore'scens (Blum. l. c.) leaflets oblong, tapering to both ends. ♄. S. Native of Java. Trichília arboréscens, Spreng. syst. append. 252.

Arborescent Gonioscheton. Tree 20 feet.

Cult. A mixture of loam and sand will suit this tree, and ripe cuttings will root in sand under a hand-glass, in heat.

XII. DYSO'XYLUM (from *δυσωδης, dusodes,* fetid, and *ξυλον, xylon,* wood; the wood is fetid). Blum. bijdr. 4th number.

Lin. syst. *Monadélphia, Octo-Decándria.* Calyx small, 4-5-cleft. Petals 4-5, oval-oblong. Anthers 8-10, inserted in the throat of the denticulated tube. Ovary girded by a short ring, 3-4-celled; cells 2-ovulate. Style filiform, crowned by a sub-peltate stigma. Capsule coriaceous, 3-4-valved, 3-4-celled, or from abortion 2-valved, 1-2-celled, with a dissepiment in the middle of each valve. Seeds solitary, exarillate, exalbuminose, fixed to the middle of the inner angle of the cells. Trees with impari-pinnate leaves, and axillary and terminal panicles of flowers.

1 D. exce'lsum (Blum. l. c.) leaves impari-pinnate, with 4 pairs of leaflets, which are ovate-oblong, acuminated and oblique at the base; panicles axillary, crowded; flowers octandrous; capsule globose. ♄. S. Native of Java and the Straits of Malacca. Trichília excélsa, Spreng. syst. append. p. 252.

Tall Dysoxylum. Tree 50 feet.

2 D. macroca'rpum (Blum. l. c.) leaves pinnate; leaflets oblong, alternate; flowers decandrous, panicled; capsule large, globose. ♄. S. Native of Java. Trichília macrocárpa, Spreng. syst. append. p. 252.

Large-fruited Dysoxylum. Tree.

3 D. laxiflòrum (Blum. l. c.) leaves pinnate; leaflets alternate, oblong-lanceolate; flowers decandrous, in loose panicles. ♄. S. Native of Java.

Lax-flowered Dysoxylum. Tree.

4 D. si'mile (Blum. l. c.) leaves pinnate; leaflets alternate, opposite, oblong, bluntish, unequal; flowers decandrous, panicled; capsule globose. ♄. S. Native of Java. Trichília símilis, Spreng. syst. append. p. 252.

Similar Dysoxylum. Tree.

5 D. molli'ssimum (Blum. l. c.) leaves pinnate; leaflets subopposite, ovate-oblong, bluntish, villous beneath, as well as the panicles, which are divaricate; flowers octandrous. ♄. S. Native of Java. Trichília mollíssima, Spreng. syst. append. p. 252.

Very-soft Dysoxylum. Tree.

Cult. These trees will thrive in a mixture of loam, peat, and sand, and ripened cuttings will root in sand under a hand-glass, in heat.

XIII. EKEBE'RGIA (in honour of Charles Gustavus Ekeberg, Captain a Swedish East Indiaman, who took Sparmann to China for the purpose of making inquiries in natural history). Sparm. act. holm. 1779. p. 282. t. 9. D. C. prod. 1. p. 623.

Lin. syst. *Monadélphia, Decándria.* Calyx 4-cleft. Petals 4. Stamens 10? with a very short, entire tube; anthers almost sessile on the inside of the tube. Stigma capitate. Berry globose, 5-seeded. Seeds unknown.—A tree with impari-pinnate leaves.

1 E. Cape'nsis (Sparm. l. c.) ♄. G. Native of the Cape of Good Hope in the woods of Hautenequas and Essenboch, where it is called by the Dutch colonists *Essen* or *Esschenboom,* and *Hautenequas Essen,* from its resemblance to the common ash. Leaves impari-pinnate, with 5 pairs of elliptical, acuminated, smooth leaflets. Flowers white. Trichília Capénsis, Pers. ench. 1. p. 468.

Cape Ekebergia. Fl. July, Aug. Clt. 1789. Tree 20 ft.

Cult. This tree will succeed well in a mixture of loam and peat, and ripened cuttings, not deprived of their leaves, will root in sand under a hand-glass.

XIV. GUA'REA (*Guara* is a name given to one of the species

by the natives of Cuba). Lin. mant. no. 1305. D. C. prod. 1. p. 623.

Lin. syst. *Monadélphia, Octándria.* Calyx small, 4-toothed. Petals 4, distinct, oblong, obtuse. Stamens 8, joined into an entire or crenulate tube bearing the anthers on the inside at the throat. Anthers 2-celled, bursting inwards. Style simple, crowned by a discoid stigma. Capsule somewhat globose, 4-celled, 4-valved, bearing a dissepiment in the middle of each valve, smooth or tubercled. Seeds solitary or twin in the cells, without albumen, but covered with red aril.—Trees or shrubs, with abruptly seldom with impari-pinnate leaves, and axillary panicles, racemes, or spikes of white or reddish flowers.

1 G. grandifòlia (D. C. prod. 1. p. 624.) leaflets many pairs, oval-oblong, feather-nerved, with 10 or 12 lateral, very prominent nerves beneath; racemes elongated. ♄. S. Native of French Guiana, as well as the Caribbee Islands.—Plum. icon. t. 147. f. 2. Mèlia Guàra, Jacq. amer. 126. t. 176. f. 37. Trichília Guàra, Lin. spec. 551. G. trichilioìdes, Lin. mant. 228. exclusive of the synonymes of Browne and Marcgrave. G. macrophýlla, Vahl.? Leaves large; leaflets 8 or 9 inches long, lower ones smallest. Petals silky on the outside, 4 or 5 lines long. Tube of stamens entire, not toothed at the apex. Fruit roundish, according to Jacquin. All parts of this tree, but especially the bark, smell strong of musk, and may be used instead of that perfume for many purposes. The wood is full of a bitter, resinous substance, which renders it unfit for rum hogsheads, being observed to communicate both its smell and taste to all spiritous liquors; but it is often cut for staves and heading when there is a scarcity of other timber. The powder of the bark is said to be a good emetic, and is sometimes used among the negroes for that purpose. The English call it *Musk-wood* and *Alligator-wood;* the French *Bois-rouge.*

Great-leaved Guarea. Fl. Feb. Mar. Clt. 1752. Tr. 30 ft.

2 G. spicæflòra (St. Hil. fl. bras. 2. p. 81.) bark of branches grey, scabrous; leaflets 9-13, lanceolate-ovate, shortly acuminated; panicles spike-formed, oblong; capsule smooth. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals reddish.

Spike-flowered Guarea. Fl. Oct. Tree 20 feet.

3 G. multi'juga (St. Hil. fl. bras. 2. p. 82.) bark of branches dark-red; leaflets 32, opposite, middle one half a foot long, all oblong-lanceolate or obovate-lanceolate, acuminated, smooth; panicle rather pyramidal, very long; capsule smooth. ♄. S. Native of Brazil in the province of Minas Geraes. Petals rose-coloured.

Many-paired-leaved Guarea. Fl. Dec. Tree 30 feet.

4 G. pu'rgans (St. Hil. pl. usu. bras. no. 71. and fl. bras. 2. p. 83.) bark of branches red; leaflets 10-18, oblong-lanceolate, shortly and bluntly acuminated, smooth; panicle raceme-formed; capsule pear-shaped, smooth, and even. ♄. S. Native of Brazil.—Jíto, Marcg. bras. 120. with a figure. The bark of this tree is bitter, and is employed as a purgative by the inhabitants of Brazil.

Cathartic Guarea. Fl. Sept. Tree 30 feet.

5 G. Swa'rtzii (D. C. prod. 1. p. 624.) leaflets 2 to 4 pairs, lanceolate-ovate, acuminated, feather-nerved, with 6 or 7 prominent, lateral nerves beneath; racemes elongated. ♄. S. Native of the Caribbee Islands. Eluthèria, Browne, jam. 369. no. 7.—Sloan. hist. 2. t. 170. f. 1. Guàrea trichilioìdes, Swartz, obs. 146. Flowers white. This tree possesses the same qualities as the preceding.

Swartz's Guarea. Fl. June, July. Clt. 1822. Tree 20 feet.

6 G. brachysta'chya (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 624.) leaflets 4 or 5 pairs, oval, acute; racemes axillary, solitary, 4 times shorter than the leaves; fruit globose, and are, as well as branchlets, tubercled. ♄. S. Native of New Spain. Flowers whitish.

Short-spiked Guarea. Tree 20 feet.

7 G. hu'milis (Bert. in litt. D. C. prod. 1. p. 624.) leaflets 2 or 3 pairs, oval, acuminated; racemes axillary, solitary, 4 times shorter than the leaves; branchlets smooth. ♄. S. Native of Porto-Rico. G. glàbra, Vahl.? Flowers whitish.

Humble Guarea. Tree 10 feet.

8 G. tuberculata (St. Hil. fl. bras. 2. p. 83. t. 100.) bark grey, scabrous; leaflets 3-12, alternate, lanceolate-ovate, shortly and obtusely-acuminated, smooth; panicle raceme-formed; capsule smooth, tubercled, or puberulous. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals white.

Tubercled-fruited Guarea. Tree 30 feet.

9 G. Lessonia'na (St. Hil. fl. bras. 2. p. 84.) bark grey, wrinkled; leaflets 6-10, opposite, lanceolate-ovate, shortly-acuminated, pubescent beneath; panicles raceme-formed; capsule pear-shaped, tubercled, velvety-pubescent. ♄. S. Native of Brazil in the Island of St. Catharine.

Lesson's Guarea. Tree.

10 G. ramiflòra (Vent. choix. t. 41.) leaflets 2 pairs, ovate-lanceolate; racemes lateral, very short, rising from the sides of the branches; capsules globose. ♄. S. Native of Porto-Rico. Flowers whitish.

Branch-flowered Guarea. Clt. 1822. Tree 20 feet.

11 G. exce'lsa (Bonpl. H. B. et Kunth, nov. gen. 7. p. 227.) leaflets 2 or 3 pairs, elliptic-oblong, obtuse, coriaceous, smooth above, villous beneath at the origin of the veins; panicles axillary, almost simple, hardly exceeding the petioles. ♄. S. Native of New Spain between Acapulca and Zumpanga. Flowers white.

Lofty Guarea. Tree 50 feet.

Cult. All the species of *Guàrea* will thrive well in loam mixed with a little sand, and ripened cuttings, with their leaves not shortened, will strike root in sand under a hand-glass, in heat.

XV. EPICHA'RIS (from επιχαρις, *epicharis*, beautiful; elegance of trees). Blum. bijdr. 4th number.

Lin. syst. *Monodélphia, Octo-Decándria.* Calyx urceolate, irregularly 5-6-cleft. Petals 4, rarely 5. Anthers 8-10, adnate to the throat of a toothed tube. Ovary inclosed in the tube, 4-celled; cells 2-ovulate. Style filiform, crowned by a capitate, depressed stigma. Capsule subglobose, coriaceous, 2-4-valved, 2-4-celled, with the valves bearing a dissepiment in the middle of each. Seeds solitary, incompletely covered by a fleshy aril, exalbuminous. Cotyledons very thick.—Trees with abruptly-pinnate leaves.

1 E. densiflòra (Blum. l. c.) leaves with 5-8 pairs of alternate, oblong, acuminated leaflets, which are oblique at the base, and pubescent beneath; racemes crowded, axillary. ♄. S. Native of Java. Guàrea densiflòra, Spreng. syst. append. p. 251.

Dense-flowered Epicharis. Tree 50 feet.

2 E. cauliflòra (Blum. l. c.) leaves with many pairs of opposite, oblong, acuminated leaflets, which are villous beneath; racemes crowded, lateral. ♄. S. Native of Java. Guàrea cauliflòra, Spreng. syst. append. p. 251.

Stem-flowered Epicharis. Tree 50 feet.

3 S. seri'cea (Blum. l. c.) leaves with many pairs of oblong, acuminated leaflets, which are covered with silky pubescence beneath; racemes crowded, lateral. ♄. S. Native of Java. Guàrea sericea, Spreng. syst. append. p. 251.

Silky Epicharis. Tree 60 feet.

4 E. alti'ssima (Blum. l. c.) leaves with many pairs of oblong, acuminated leaflets, which are pubescent at the ribs beneath. ♄. S. Native of Java.

Tallest Epicharis. Tree 140 feet.

Cult. These trees will succeed in a mixture of loam and

peat, and ripened cuttings will root in sand under a hand-glass, in heat.

XVI. DIDYMOCHE'TON (from *διδυμος, didymos*, double, and *χιτων, chiton*, a coat; in allusion to the petals being connected with the staminiferous tube at the base). Blum. bijdr. 4th number.

Lin. syst. *Monadélphia, Decándria.* Calyx small, 5-sepalled, imbricate. Petals 5, connate with the tube of the stamens at the base, but free at the apex, spreading. Stamens 10, with the tube elongated and 10-toothed at the apex, bearing the anthers in the throat. Ovary inclosed in the membranous tube, 5-celled; cells 2-ovulate. Style filiform, terminated by a capitate stigma. Berry corticate, ovate, 2-3-celled from abortion. Seeds solitary, axarillate, exalbuminous, fixed to the inner angle of the cells. Cotyledons thick.—A shrub with impari-pinnate leaves.

1 D. nu'tans (Blum. l. c.) leaflets oblong-lanceolate, pubescent on the ribs beneath; spikes panicled, axillary, nodding; flowers glomerate. ♄. S. Native of Java.

Nodding-flowered Didymocheton. Shrub 6 feet.

Cult. A mixture of loam and sand will answer this shrub, and ripened cuttings will root in sand under a hand-glass, in heat.

XVII. APHANAMI'XIS (from *a* priv. *φαναι, phanai*, to appear, and *μιξις, mixis*, mixed; in allusion to not being joined at the base, but free and mixed). Blum. bijdr. 4th number.

Lin. syst. *Monadélphia, Hexándria.* Calyx small, of 5 roundish, imbricate sepals. Petals 3, oval, concave, spreading. Stamens 6, connate into a globe. Anthers oblong, trigonal. Ovary girded by a narrow ring, 3-celled; cells 2-seeded. Style pyramidal, triquetrous, terminated by a simple stigma. Capsule obovate, 2-3-valved, 2-3-celled; valves with a dissepiment in the middle of each. Seeds solitary, covered by a fleshy-lobed aril, umbilicate at the base, exalbuminous, fixed to the central receptacle. Cotyledons thick. Radicle superior.—A tall tree with impari-pinnate leaves; leaflets opposite, oblong. Panicles elongated, axillary.

1 A. grandifòlia (Blum. l. c.) ♄. S. Native of Java.

Great-leaved Aphanamixis. Tree 40 feet.

Cult. This tree will grow in a mixture of loam and sand; and ripened cuttings will root in sand under a hand-glass, in heat.

XVIII. HE'YNEA (in honour of B. Heyne, M.D. a German botanist, and traveller in the East Indies). Roxb. hort. beng. p. 33. and in bot. mag. t. 1738. D. C. prod. 1. p. 624.

Lin. syst. *Monadélphia, Decándria.* Calyx 5-toothed. Petals 5. Filaments 10, joined into a cylindrical tube, bearing the anthers at the apex. Style 1. Ovary 2-celled; cells containing 2 ovulæ, which are fixed to the inner angle. Capsules 2-valved 1-celled, 1-seeded from abortion. Seed arillate. Embryo inverted, free of albumen, with very thick cotyledons.—Trees with impari-pinnate leaves, and panicles or racemes of small, white flowers.

1 H. tri'juga (Roxb. hort. beng. 33. cor. 3. t. 260. and in Sims, bot. mag. t. 1738.) leaves impari-pinnate; leaflets 3 pairs; panicles axillary, on long peduncles, corymbose. ♄. G. Native of Nipaul. Flowers white. Every part of the tree is bitter.

Three-paired-leaved Heynea. Fl. Sept. Clt. 1812. Tree 20 feet.

2 H. quinque'juga (Roxb. hort. beng. p. 90.) leaves abruptly-pinnate, with 5-7 pairs of oval, oblong leaflets, which are clothed at the origin of the veins beneath with rusty down, as well as the twiggy panicle. ♄. S. Native of Java and the Moluccas. Trichília rufinérvia, Blum. bijdr. 4th number.

Five-paired-leaved Heynea. Clt. 1816. Tree 20 feet.

3 H. multi'juga (Blum. bijdr. 4th number,) leaves impari-pinnate, with usually 6 pairs of oblong leaflets, tapering unequally on both sides to the base; racemes axillary, solitary. ♄. S. Native of Java.

Many-paired-leaved Heynea. Tree 20 feet.

Cult. These trees will succeed well in a mixture of loam and peat, and ripened cuttings, with their leaves not shortened, will root in sand under a hand-glass, in a moderate heat.

XIX. CHISOCHE'TON (from *σχιζω, schizo*, to cut, and *χιτων, chiton*, a coat; in allusion to the staminiferous tube being 6-cleft). Blum. bijdr. 4th number.

Lin. syst. *Monadélphia, Hexándria.* Calyx urceolate, nearly entire. Petals 4, linear. Anthers 6, rarely 7 or 8, inserted in the throat of a 6-cleft, conical tube. Ovary girded by a short ring, 3-celled; cells 1-seeded. Style clavate, crowned by an obtuse stigma. Capsule 2-3-celled, or only 1-celled from abortion, 2-3-valved, with a dissepiment in the middle of each valve. Seeds arillate; aril incomplete, fleshy. Embryo exalbuminous. Cotyledons large, peltate.—Trees with impari-pinnate leaves, and with branched panicles of flowers.

1 C. pa'tens (Blum. l. c.) leaflets oblong; panicles spreading, much branched. ♄. S. Native of Java. Schizochìton, Spreng. syst. append. p. 251.

Spreading-panicled Chisocheton. Tree.

2 C. dive'rgens (Blum. l. c.) leaflets oblong; panicle divaricate, twiggy. ♄. S. Native of Java. Schizochìton, Spreng. l. c.

Diverging-panicled Chisocheton. Tree.

Cult. A mixture of loam, peat, and sand will suit the species of this genus, and ripened cuttings will root in sand under a hand-glass, in heat.

XX. CARA'PA (*Carapa* is the name of *C. Guianénsis* in Guiana). Aubl. guian. suppl. p. 33. t. 387. D. C. prod. 1. p. 626.—Xylocárpus, Schreb. gen. no. 646.—Persoònia, Willd. spec. 2. p. 331.

Lin. syst. *Monadélphia, Octo-Decándria.* Calyx coriaceous, 4-5-lobed. Petals 4 or 5, coriaceous. Stamens 8-10; filaments joined into a tube, which is toothed at the apex, and bearing the anthers on the inside at the throat. Style short. Stigma broad, truncate, with a furrowed margin. Drupe dry, globose, woody inside, 4-5-furrowed, 4-5-valved, 4-5-seeded. Seeds thick, free of albumen.—Trees with abruptly-pinnate, coriaceous leaves, and panicled racemes of small, dirty-yellowish flowers. Stamens and habit of trees agreeing with *Meliàceæ*, but the seeds come closer to those of *Guttíferæ*.

1 C. Guiane'nsis (Aubl. l. c.) leaflets 8 or 10 pairs, alternate or opposite, elliptical, oblong, acuminated, coriaceous, shining. ♄. S. Native of Guiana in forests. Lam. ill. t. 301. Persoònia Guareoìdes, Willd. spec. 331. The inhabitants of Guiana extract an oil from the seeds of this tree by boiling them in water, which they call oil of carapa, and is used by them for rubbing their hair and all parts of their body; it preserves them against the bites of insects and the humidity of the atmosphere. This oil is thick and bitter. The trunk of the tree furnishes masts for small vessels. The tree is called *Carapa* by the Caribbees, and *Y-Andiroba* by the Caripous. Fruit the size of an apple.

Guiana Carapa. Fl. Nov. Clt. 1824. Tree 60 feet.

2 C. obova'ta (Blum. bijdr. 4th number,) leaves with 2 pairs of obovate, coriaceous leaflets. ♄. S. Native of Java. Xylocárpum obovàtum, Spreng. syst. append. 147.

Obovate-leaved Carapa. Tree 20 feet.

3 C. Guinee'nsis (G. Don, in Loud. hort. brit. p. 168.) leaflets 8 or 10 pairs, oblong, acuminated, shining, coriaceous; racemes

panicled, axillary; fruit tetragonal, 4-valved, 4-seeded. ♄. S. Native of Sierra Leone on the mountains. Afzèlia spléndens, Hortul. Fruit about the size of an apple, containing 3 or 4 large, angular nuts. There is an oil extracted from the nuts, which is used by some of the natives in place of soap, as well as for the purpose of anointing their bodies.

Guinea Carapa. Fl. Feb. May. Clt. 1793. Tree 30 feet.

4 C.? prócera (D. C. prod. 1. p. 626.) leaflets 4-5 pairs, obtuse, cuneated at the base; flowers of 5 petals, decandrous. ♄. S. Native of the Caribbee Islands. Trichília prócera, Forsyth, ined. in herb. Lher. Fruit unknown.

Lofty Carapa. Tree 66 feet.

5 C. Molucce'nsis (Lam. dict. 1. p. 621.) leaflets usually 3 pairs, opposite, ovate, acute. ♄. S. Native of the Moluccas in muddy places among the mangroves. Granàtum littòreum, Rumph. amb. 3. p. 92. t. 61. C. I'ndica, Juss. dict. sc. nat. 7. p. 31. Xylocárpus Granàtum, Kœn. naturf. 20. p. 2. The tree is called *Cadul Gaha* by the Cingalese, and *Candalanga* by the Tamuls.

Molucca Carapa. Clt. 1820. Tree 50 feet.

Cult. These trees will succeed well in a mixture of loam and sand, and ripe cuttings will strike root in sand under a hand-glass, in a moist heat.

XXI. CALPA'NDRIA (from καλπη, *calpe*, an urn, and ανηρ ανδρος, *aner andros*, a male; in allusion to the stamens being situated in the throat of the urn-shaped tube). Blum. bijdr. 4th number.

Lin. syst. *Monadélphia, Polyándria.* Calyx of 4 permanent, unequal sepals. Petals 4. Stamens 25-40, filaments distinct at the base, but joined into a cylindrical tube at the top, bearing the anthers at its throat. Ovary 3-4-celled; cells 3-ovulate. Stigma somewhat trifid. Capsule woody, subglobose, 3-valved, 3-celled, with a dissepiment in the middle of each valve; cells containing 1-2 nuts from abortion. Nuts of 2 forms, 1-seeded. Seeds exalbuminous, exarillate.—A shrub with simple, lanceolate, serrated leaves, and solitary, or twin lateral flowers.

1 A. lanceola'ta (Blum. l. c.) ♄. S. Native of Java.

Lanceolate-leaved Calpandria. Shrub 6 feet.

Cult. This shrub will probably grow in a mixture of loam and peat, and ripened cuttings will root in sand under a hand-glass, in heat.

XXII. ODONTA'NDRIA (from οδους οδοντος, *odous odontos*, a tooth, and ανηρ ανδρος, *aner andros*, a male; sterile stamens appearing like teeth). H. B. et Kunth, 7. p. 228.

Lin. syst. *Monadélphia, Decándria.* Calyx hemispherical, 5-toothed. Petals 5, sessile, ovate, acute, equal, valvate in the bud. Filaments 10, connate at the base, the 5 opposite the petals sterile. Anthers ovate-cordate, 2-celled, bursting lengthwise on the inside. Disk none. Style short, crowned by an obtuse stigma.—An unarmed tree, with alternate, simple, entire, membranous, exstipulate leaves, and axillary, many-flowered panicles. Flowers conglomerate.

1 O. acumina'ta (Willd. herb. in Röm et Schult, syst. 5. p. 511.) ♄. S. Native of New Granada.

Acuminated-leaved Odontandria. Tree 30 feet.

Cult. A mixture of loam and sand will suit this tree well, and ripened cuttings will root in sand under a hand-glass, in heat.

Order LII. CEDRELEA'CEÆ (plants agreeing with *Cedrèla* in important characters). Cedrèleæ, R. Br. gen. rem. 64.

Calyx short, 5-cleft (f. 116. *a.*). Petals 5 (f. 116. *b.*), alternating with the segments of the calyx, and longer, erect, with a longitudinal plait on the inside of each in the middle. Genitals stipitate; stipe furnished with 5 adnate glands, 5-angled, and between the glands the plaits of the petals interpose. Stamens 5, inserted in the stipe, and appear as if they were a continuation of the glands; filaments awl-shaped; anthers cordate, 2-celled, at length versatile. Style prismatically pentagonal, crowned by a peltate stigma (f. 116. *c.*), which is obsoletely pentagonal. Ovary seated on the stipe, 5-celled; cells alternating with the stamens, containing 8 or 12 ovulæ. Dissepiments connected with the central axis, with imbricate ovulæ inserted on both sides of it. Fruit capsular (f. 116. *e.*), 5-valved; valves separable from the axis, and sometimes also the dissepiments, which alternate with the valves. Seeds suspended from the central placenta, with 2 rows in each cell imbricate, drawn out into a wing at the base or apex (f. 116. *f.*) or at both ends. Albumen fleshy, sparing. Integument thin, spongy. Embryo nearly erect, with leafy cotyledons, and a short, exserted, superior radicle.—Trees with dense, beautifully grained, coloured, sweet-scented wood. Leaves alternate, pinnate, with many pairs of opposite or sub-opposite, unequal-sided leaflets. Panicle large, spreading, pyramidal, composed of numerous little cymes of flowers, with the lateral ones usually male, the terminal ones fertile. This order differs principally in the stamens being inserted in the torus or protruding from the back of the urceolus, rarely fixed to the throat of the tube, as in *Swietènia*. It also differs from the last order in the seeds being winged. The trees are of great value for their wood, of which mahogany will give a good idea.

Synopsis of the Genera.

1 Cedre'la. Calyx 5-toothed. Petals adnate to the torus. Stamens 5, distinct. Capsule 5-celled, 5-valved. Seeds numerous, on each side of the dissepiment, ending in a wing.

2 Swiete'nia. Calyx 4-5-cleft (f. 116. *a.*). Stamens 8-10, joined into a tube. Capsule 5-celled (f. 116. *e.*), 5-valved. Seeds numerous, each drawn out into a wing (f. 116. *f.*).

3 Chloro'xylon. Calyx 5-cleft. Stamens 10, connected at the base. Capsule 3-valved, 3-celled. Seeds 4 in each side of the dissepiment, drawn out into a wing.

4 Flinde'rsia. Calyx 5-cleft. Stamens 10, alternate ones sterile. Capsule 5-valved, 5-celled. Seeds 2 in each side of the dissepiment, ending in a wing at the top.

5 Oxle'ya. Capsule 5-valved, 5-celled. Seeds 3, on each side of the dissepiment, ending in a wing at both ends.

I. CEDRE'LA (from *cedrus*, the cedar-tree; the wood has an aromatic scent like it). Lin. gen. no. 277. D. C. prod. 1. p. 624. Cèdrus, Mill.

Lin. syst. *Pentándria, Monogýnia.* Calyx small, 5-toothed. Torus elevated, stipe-formed. Petals 5, broad at the base, approximate, adnate to the torus. Stamens 5; filaments short, distinct, inserted in the torus; anthers oblong. Style 1. Stigma capitate. Capsule woody, 5-celled, 5-valved. Seeds numerous, compressed, imbricated downwards, ending in a membranous wing. Albumen fleshy. Embryo inverted. Cotyledons flat, leafy (Gært. fr. 2. p. 84. t. 95.). Trees with abruptly pinnate, many-paired leaves, and axillary and terminal panicles of small whitish flowers.

1 C. odora'ta (Lin. spec. 289.) leaflets ovate-lanceolate, entire, on short stalks. ♄. S. Native of the Caribbee Islands and Barbadoes.—Sloan. hist. 2. t. 220. f. 2.—Browne, jam. 159. t. 10. f. 1.—Lam. ill. t. 137. Corollas whitish flesh-coloured, resembling those of *hyacinth*. Fruit about the size of a partridge's egg. The bark of the tree is rough, marked with longitudinal fissures. This as well as the berries and leaves has a smell like *Assa-fœtida*, when fresh. The timber, however, has a pleasant smell. The tree is commonly known under the name of *Cedar* in the British West India islands. The trunk is so large as to be hollowed out into canoes and pariaguas, for which purpose it is extremely well adapted; the wood being soft, it may be cut out with great facility, and being light it will carry a great weight on the water. There are canoes in the West Indies, which have been formed out of these trunks, 40 feet long and 6 feet broad; the wood is of a brown colour, and has a fragrant odour, whence the name of *Cedar* has been given to it; it is frequently cut into shingles for covering houses, and is found very durable, but as the worms are apt to eat this wood, it is not proper for building ships, though it is often used for that purpose, as also for sheathing of ships. It is also used for wainscoting of rooms, and to make chests, because vermin do not so frequently breed in it as in many other sorts of wood, this having a very bitter taste, which is communicated to whatever is put into the chests, especially when the wood is fresh, for which reason it is never made into casks, because spiritous liquors will dissolve part of the resin, and thereby acquire a very bitter taste.

Sweet-scented Bastard-cedar. Clt. 1739. Tree 80 feet.

2 C. angustifòlia (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 624.) leaflets oblong, acuminated, entire, on long footstalks. ♄. S. Native of New Spain. The wood is good for many purposes, especially for making furniture.

Narrow-leaved Bastard-cedar. Tree 50 feet.

3 C. Brasilie'nsis (St. Hil. fl. bras. 2. p. 86. t. 101.) leaves abruptly-pinnate, with 14-20 oblong, obliquely ovate, acuminated, entire leaflets, which are smooth above but puberulous beneath; petals clothed with white tomentum. ♄. S. Native of Brazil in the province of Minas Geraes. Panicle terminal, large, pyramidal.

Var. β, austràlis (St. Hil. l. c.) leaflets with the nerves and margins puberulous; branches, petioles, and peduncles short, and densely pubescent.

Brazilian Bastard-cedar. Tree 40 feet.

4 C. Toóna (Roxb. cor. 3. t. 238.) leaflets lanceolate, acuminated, entire, pale-glaucous beneath. ♄. S. Native of the East Indies, where it is called *Toon* (Roxb.). Nipaul (Wall.). Willd. act. nat. cur. berl. 4. p. 198. Anthers inserted in 5 nectarial glands. Flowers small, white, smelling like fresh honey. Leaves deciduous. The wood of this tree is very like mahogany, but lighter and not so close in the grain. It is much used for furniture and various other purposes. The bark is powerfully astringent, and though not bitter, it has been found a good medicine in the cure of remitting and intermitting fevers, particularly when joined with a small portion of the powdered seed of *Guilandìna Bonducélla*, which is a very powerful bitter.

Toon Bastard-cedar. Fl. Feb. May. Clt. 1823. Tr. 60 ft.

5 C. febri'fuga (Blum. bijdr. 4th number) leaflets ovate-oblong, acuminated, quite entire. ♄. S. Native of Java. Flowers small, white. The bark is powerfully astringent, and is used in Java as a febrifuge. The wood is excellent for many purposes.

Febrifuge Bastard-cedar. Tree 60 feet.

6 C. velutìna (D. C. prod. 1. p. 625.) leaflets ovate-lanceolate, entire, smooth, petioles and branches velvety from very short down. ♄. S. Native of the East Indies at Tipperah. This is perhaps the *C. villòsa* of Roxb. hort. beng. p. 18. This tree has been cultivated a long time in Kew Gardens, under the name of *Cedrèla odoràta*.

Velvety Bastard-cedar. Clt. 1793. Tree 50 feet.

† *Species not sufficiently known.*

7 C. alternifòlia (Steud. nom. 170.) leaves alternate, simple, cordate-ovate, acute, fruit pentagonal, mucronated. ♄. S. Native of Campechy. Cèdrus alternifòlia, Mill. dict. no. 3. This probably belongs to a distinct genus, not belonging to the present order.

Alternate-leaved Bastard-cedar. Clt. ? Tree.

8 C. rosmarìnus (Lour. coch. p. 160.) leaves simple, linear; peduncles 1-flowered; seeds not winged. ♄. G. Native of Cochin-china and about Macao in China. This shrub yields an essential oil, and a spirit, not inferior to that which is drawn from rosemary. It probably belongs to a distinct genus, not belonging to this order.

Rosemary Bastard-cedar. Shrub 4 feet.

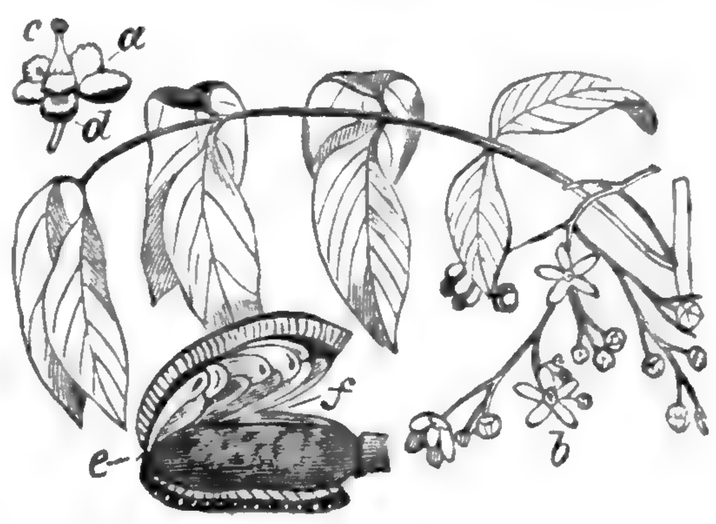
Cult. These trees will thrive well in a mixture of loam and peat; and large ripened cuttings will strike root in sand under a hand-glass, in heat.

II. SWIETE'NIA (in honour of Gerard Van Swieten, a Dutch botanist, author of several botanical works; died in 1772. He was physician to the Empress Maria Theresa). Lin. gen. no. 575. D. C. prod. 1. p. 625.

Lin. syst. *Monadélphia, Octo-Decándria.* Calyx small, 4 or 5-cleft (f. 116. *a.*), deciduous. Petals 4-5 (f. 116. *b.*). Stamens 8 or 10; filaments joined together into a toothed tube, bearing the anthers on the inside of the tube. Style 1. Stigma capitate (f. 116. *c.*). Capsules prickly, egg-shaped, woody, 5-celled, many-seeded (f. 116. *f.*). Valves opening from the base (f. 116. *e.*) or apex; margins opposite to the angles of the pentagonal central placenta. Seeds imbricating downwards, expanded into a wing, fixed to the placenta. Albumen fleshy. Embryo straight. Cotyledons flat, leafy. (Gært. fruct. 2. p. 89. t. 96.)—Trees with alternate, abruptly-pinnate leaves, and axillary panicles or racemes of small, white flowers.

1 S. Mahógoni (Lin. spec. 271.) leaflets usually 4 pairs, ovate-lanceolate, unequal at the base, acuminated at the apex; panicles axillary. ♄. S. Native of South America, Cuba, Jamaica, St. Domingo, but particularly Honduras Bay. Cav. diss. 7. p. 365. t. 209. Hook. bot. misc. pt. 1. t. 16 and 17.

FIG. 116.



—Cèdrus Mahógoni, Mill. dict. no. 2.—Cat. carol. 2. t. 81. The figure given by Gærtner, and that given in the Fl. mex. shew the capsule opening from the top, not from the base, therefore there are probably two species, varying in the dehiscence of the capsule. *Mahogoni* is the American name of the tree. The excellence of mahogany for all domestic purposes has been long known in England, and it is a matter of surprise that for a long time the only author who mentioned this tree was Catesby. Browne informs us, that mahogany was formerly very common in Jamaica, and while it could be had in the low lands, and brought to market at an easy rate, furnished a very considerable branch of the exports from that island, that it thrives in most soils, and varies both in grain and texture with each, that which grows among rocks being smaller, but very hard and weighty, of a close grain and beautifully shaded, while

the produce of the low and richer lands is observed to be more light and porous, of a paler colour and open grain. The tree grows very tall, with a straight trunk, sometimes 4 or 6 feet in diameter, and usually bears a great number of capsules. The flowers are of a whitish or saffron colour, and the fruit is about the size of a turkey's egg.

The first discovery of the beauty of mahogany wood is attributed to the carpenter on board Sir Walter Raleigh's ship at the time that vessel lay off the harbour of Trinidad in 1595. At Honduras 200 years is considered to be necessary from the time of the plant being reared by seed to that of its perfection and fitness for cutting, which commences about the month of August; at this time the leaves assume a yellowish hue. The Honduras mahogany is not so good as the Jamaica and St. Domingo mahogany, and is probably a distinct species. The bark of mahogany is astringent and bitter, and in its action on the human frame has been said to coincide nearly with Peruvian bark.

Common *Mahogany*. Clt. 1734. Tree 80 feet.

2 S. FEBRI'FUGA (Roxb. cor. 1. p. 18. t. 17.) leaflets usually 4 pairs, oval, obtuse or emarginate, and oblique at the base; racemes rising from the axils of the upper abortive leaves, therefore constituting a terminal panicle. ♄. S. Native of the East Indies in the mountainous parts of the Rajahmundry Circar, north of Samulcotah and Peddapore. S. Sóymida, Dunc. tent. edin.1794. Valves of fruit smooth, opening from the top. Flowers small, cream-coloured. The wood of this tree is of a dull-red colour, remarkably hard and heavy; it is reckoned by the natives the most durable wood they know, and on that account it is used for all the wood-work in their temples; it is also very serviceable for various other purposes. The bark is internally of a light-red colour; a decoction of it dyes brown of various shades, according as the cloth has been prepared. Its taste is a bitter and astringent united, and very strong, particularly the bitter, but is not in any way nauseous or disagreeable, and may be used in the same way as Peruvian bark. *Soymida* is its name among the Telingas.

Febrifuge Mahogany. Clt. 1796. Tree 60 feet.

3 S. Senegale'nsis (Desr. in Lam. dict. 3. p. 679.) leaflets usually 3 pairs, oval-oblong, coriaceous, bluntish; panicle terminal; flowers octandrous; fruit globose, 4-valved. ♄. S. Native of Senegal. Flowers small, whitish. The wood of this tree is very hard, and of a beautiful grain. It is brought to this country from Sierra Leone.

Senegal or African Mahogany. Tree 60 feet.

4 S. trilocula'ris (Roxb. mss. in herb. Lamb.) leaves pinnate; leaflets alternate, ovate, smooth, acuminated, rather unequal at the base; panicle terminal, composed of racemes; capsule 3-celled, 6-valved, opening from the apex, not prickly. ♄. S. Native of the East Indies.

Three-celled-capsuled Mahogany Tree. Tree 100 feet.

Cult. These trees will thrive well in a mixture of loam and peat, and ripe cuttings with their leaves not shortened will strike root in sand, in a moist heat.

III. CHLORO'XYLON (from χλωρος, *chloros*, yellow, ξυλον, *xylon*, wood; colour of wood). D. C. prod. 1. p. 625.

Lin. syst. *Monadélphia*, *Decándria*. Calyx small, 5-cleft. Petals 5. Stamens 10; filaments protruding from the back of the urceolus, the rest awl-shaped, free, radiately spreading. Capsules opening from the top, 3-valved, 3-celled; valves bearing a dissepiment in the middle. Seeds 4 in each cell, ending in a wing fixed to the dissepiments on the valves.—A tree with abruptly-pinnate leaves, and terminal panicles of small, whitish flowers.

1 C. Swiete'nia (D. C. prod. 1. p. 625.) ♄. S. Native of the East Indies on the mountainous parts of the Circars. Swietènia chloróxylon, Roxb. cor. 1. p. 46. t. 64. Leaves abruptly-pinnate, with many pairs of small, unequal, ovate, somewhat rhomboid, obtuse leaflets. The wood of this tree is of a deep-yellow colour, remarkably close grained, heavy, and durable; it is used for various purposes, and comes nearer to boxwood than any other in its native country. It is called *Billoo* by the Telingas.

Mahogany-like Chloroxylon. Clt. 1820. Tree 50 feet.

Cult. This tree will succeed in a mixture of loam and peat, and ripe cuttings, with their leaves not shortened, will strike root in sand under a hand-glass, in a moist heat.

IV. FLINDE'RSIA (Captain Michael Flinders, R.N. a celebrated circumnavigator, who explored the coast of New Holland in the beginning of the present century; he was accompanied by Mr. R. Browne, as naturalist, whose works on the botany of New Holland are well known). R. Br. gen. rem. p. 63. t. 1. D. C. prod. 1. p. 625.

Lin. syst. *Monadélphia*, *Decándria*. Calyx 5-cleft, short. Petals 5. Stamens 10, protruding from the back of the urceolus, with their bases dilated; filaments awl-shaped, spreading, alternate ones sterile. Capsule 5-valved, 5-celled, partible into 5 single segments, which are divided each by a longitudinal dissepiment, at length free, with 2 seeds on each side. Seeds erect, winged at the apex. Albumen absent. Cotyledons transverse, thick, leafy.—Trees with impari-pinnate leaves, small white flowers, and echinated capsules.

1 F. austra'lis (R. Br. l. c.) leaflets 1 to 3 pairs; flowers panicled; fruit ovate, very blunt at both ends. ♄. G. Native of New Holland on the eastern coast. Leaves full of pellucid dots, as in the orange. The wood is useful for various domestic purposes, and is said not to be much inferior to mahogany.

Southern Flindersia. Clt. 1823. Tree 66 feet.

2 F. Amboine'nsis (Poir. suppl. 4. p. 650.) leaflets 3 or 7 pairs; flowers almost solitary; fruit ovate-oblong, tapering to both ends. ♄. S. Native of the islands of Hitoe and Ceram. —Rumph. amb. 3. p. 201. t. 129. The trunk of the tree is used for pales. The spiny part of the fruit is formed into rasps by the natives of Amboyna; it is therefore called *Arbor radulifera* by Rumphius.

Amboyna Flindersia. Tree 60 feet.

Cult. These fine trees will thrive well in a mixture of loam and peat, and ripened cuttings, with their leaves not shortened, will strike root in sand under a hand-glass, those of the last species in heat.

V. OXLE'YA (in honour of Mr. Oxley of New South Wales). Cung. mss. in Hook. bot. misc. pt. 3. p. 286. t. 54.

Lin. syst. *Decándria*, *Monogýnia?* Flowers unknown. Capsule 5-celled, dividing even to the base into 5 valves, with a dissepiment in the middle of each, at length separating from the central receptacle, with 3 seeds on each side of the dissepiment. Seeds fixed by their middle, edged all round and extended into a wing at both ends. Albumen wanting. Radicle towards the hylum. This genus differs from *Flindérsia* in the valves separating from the base, in having 3 seeds on each side of the dissepiment, and in the seeds being winged at both ends.

1 O. xanthóxyla (Cung. mss. l. c.). ♄. G. Native of the eastern coast of New Holland. This is a tree 100 feet high, and 4 or 5 feet in diameter at the base. Leaves impari-pinnate, sometimes ternate, but usually with 4-5 pairs of opposite, lanceolate, quite entire, acuminated, bluntish, coriaceous leaflets, full of minute dots, on short stalks. The wood is very yellow. It is found to be useful in various kinds of carpentering, and in building boats.

Yellow-wooded Oxleya. Clt. 1829. Tree 100 feet.

Cult. A mixture of loam and peat with a little sand, will suit this tree. Ripened cuttings, with their leaves not shortened, will root in sand under a hand-glass.

Order LIII. AMPELI'DEÆ (from αμπελος, *ampelos*, a vine, and ειδος, *eidos*, form; plants like the grape-vine). H. B. et Kunth, nov. gen. amer. 5. p. 223. D. C. prod. 1. p. 627.—Vites, Juss. gen. 267.—Sarmentàceæ, Vent. tabl. 3. p. 167.—Viníferæ, Juss. mem. mus. 3. p. 144.

Calyx small, with an entire or toothed (f. 118. *a.*) margin. Petals 4-5, alternating with the teeth of the calyx, round the base of the ovary, and inserted on the outside; they are therefore between hypogynous and perigynous, broadest at the base, rarely connected into a lobed, monapetalous corolla (f. 118. *b.*), somewhat valvate and inflexed at the apex in æstivation. Stamens equal in number with the petals, inserted in the disk in front of the petals, sometimes sterile from abortion; filaments free or joined at the base (f. 118. *f.*); anthers ovate, birimose, inserted by their back, oscillatory. Ovary globose, free. Style 1, short or almost wanting, crowned by a simple stigma. Berries globose (f. 117.), younger ones 2-celled; cells 2-seeded. Adult berries usually with the dissepiments vanished, therefore 1-celled, watery or fleshy, not separating from the epicarp. Seeds 4-5, or fewer from abortion, sometimes wanting, erect, bony, fixed to the central axis by short funicles (f. 118. *c.*). Albumen fleshy, hard. Embryo erect, one-half shorter than the albumen, with a terete inferior radicle, and lanceolate cotyledons, which are keeled on one side and flat on the other.

This order is composed of sarmentose and climbing shrubs, with the lower leaves opposite, and the upper ones alternate, stalked, simple, lobed or compound, furnished with stipulas at the base. Peduncles racemose, thyrsoid, corymbose, cymose or umbellate, opposite the leaves; sometimes these peduncles are changed into tendrils. Flowers small, insignificant, greenish or greenish-yellow, rarely purple. The vine is the type and representative of this order, the other genera differ but little from it in botanical character, and not at all in habit. The common grape is the only species that bears really good fruit, the American kinds, with large fleshy berries, being spoiled by a disagreeable foxy flavour, which is not found to be removed by cultivation.

Synopsis of the Genera.

Tribe I.

Vini'feræ. *Corolla polypetalous. Stamens opposite the petals. Peduncles often changed into tendrils.*

1 Ci'ssus. Calyx nearly entire. Petals 4. Stamens 4. Ovary 4-celled. Berry 1-4-seeded.

2 Pterisa'nthes. Perigone leafy, lobately-winged. Calyx urceolate, entire. Petals 4. Stamens 4. Stigma sessile, bluntish. Ovary immersed in the disk. Berry 1-2-seeded.

3 Ampelo'psis. Calyx nearly entire. Petals 5. Stamens 5. Style 1, crowned by a capitate stigma. Ovary not immersed in the disk.

4 Vi'tis. Calyx 5-toothed. Petals 5, cohering. Stamens 5. Style wanting. Berry 2-celled, 4-seeded (f. 117.).

Tribe II.

Leea'ceæ. *Corolla monopetalous* (f. 118. *b.*). *Stamens alternating with the lobes of the corolla, usually monadelphous* (f. 118. *f.*). *Peduncles never changed into tendrils.*

5 Lee'a. Calyx 5-toothed (f. 118. *a.*). Corolla 5-cleft (f. 118. *b.*). Urceolus of stamens 5-lobed (f. 118. *f.*); filaments adnate to the urceolus between the segments. Style simple (f. 118. *d.*). Capsule 4-6-lobed, 4-6-celled; cells 1-seeded.

6 Lasianthe'ra. Calyx 5-toothed, bracteate on the outside. Corolla 5-cleft. Stamens 5, inserted in the bottom of the corolla, and alternating with its lobes; anthers hairy. Style short.

Tribe I.

VINI'FERÆ (from *vinum*, wine, *fero*, to bear; produce wine,) or SARMENTA'CEÆ (from *sarmentum*, a twig; plants twiggy). D. C. prod. 1. p. 627. Corolla polypetalous. Stamens opposite the petals. Fruit and seeds as in the character of the order. Peduncles usually changed into tendrils.

I. CI'SSUS (from κισσος, *kissus*, ivy, said to come from the Arabic *qissos*, signifying ivy). Lin. gen. no. 147. D. C. prod. 1. p. 627.

Lin. syst. *Tetrándria, Monogýnia.* Calyx almost entire. Petals 4, separating from each other to the base. Stamens 4. Ovary 4-celled. Berry 1-4-seeded.—Climbing plants, with simple, trifoliate or palmate leaves, and cymes or corymbs of small, greenish, yellow, or purplish flowers.

* *Leaves simple, cordate, entire, and sometimes rather lobed.*

1 C. vitigínea (Lin. spec. 170.) leaves cordate, roundish, serrated, smoothish, or clothed with rusty pubescence beneath; stipulas cordate. ♄. ◡. S. Native of the East Indies.—Pluk. mant. 27. t. 337. f. 4. Vahl. symb. 3. p. 18. Berries pear-shaped, 1 or 2-seeded, black, clothed with a bluish-glaucous pollen. Plant with the habit of the grape-vine. Flowers red.

Var. β, Cochinchinénsis (D. C. prod. 1. p. 627.) leaves smooth, toothletted, 3-lobed; berries roundish. ♄. ◡. S. Native of Cochin-china. C. vitigínea, Lour. cochin. 83.

Vine-like Cissus. Fl. July, Aug. Clt. 1772. Shrub cl.

2 C. repa'nda (Vahl. symb. 3. p. 18.) leaves cordate, entire, somewhat lobed, repand, adult ones smooth on both surfaces. ♄. ◡. S. Native of the East Indies. Young branches downy, adult ones smooth. Berries pear-shaped, about the size of peas, mucronate.

Repand-leaved Cissus. Shrub cl.

3 C. adna'ta (Roxb. fl. ind. 1. p. 423.) leaves roundish, cordate, acuminated, bristle-toothed, smooth above, velvety beneath, as well as the round branches; stipulas ovate-orbicular, adnate, with a gibbous centre, and scarious margins; flowers nodding. ♄. ◡. S. Native of the East Indies near Dacca. C. aristàta, Blum. bijdr. 4th number. Berries black, size of peas.

Adnate-stipuled Cissus. Fl. July, Aug. Clt. 1818. Shrub cl.

4 C. latifòlia (Vahl. symb. 3. p. 18. exclusive of the synonyme of Lam.) leaves cordate, ovate, acuminated, bristly-serrated, smooth above, but clothed with rusty hairs beneath; branches tetragonal; stipulas oblong. ♄. ◡. S. Native of the East Indies in woods.—Rumph. amb. 5. t. 164. f. 1. Berries pear-shaped.

Broad-leaved Cissus. Fl. July, Aug. Clt. 1824. Shrub cl.

5 C. glau'ca (Roxb. fl. ind. 1. p. 425.) leaves cordate, acuminate, sometimes somewhat lobed, bristly-serrated, smooth on both surfaces, as well as the petioles and peduncles; stipulas

broad, furrowed, blunt; cymes decompound; berries 1-seeded. ♄. ◡. S. Native of Madagascar and the East Indies.—Rheed. mal. 7. t. 11. C. latifòlia, Lam. dict. 1. p. 30. but not of Vahl. C. compréssa, Blum. bijdr. 4th number. Berries round, about the size of peas, purple.

Glaucous Cissus. Fl. July, Aug. Clt. 1818. Shrub cl.

6 C. I'NDICA (Rottl. et Willd. nov. act. nat. cur. 4. p. 183.) leaves roundish-cordate, acuminated, with bristly serratures, pubescent beneath; branches roundish, and are, as well as the petioles clothed with short down. ♄. ◡. S. Native of the East Indies.

Indian Cissus. Shrub cl.

7 C. CORDIFÒLIA (Lin. spec. 170.) leaves cordate, quite entire, pubescent beneath; peduncles trifid, dichotomous. ♄. ◡. S. Native of South America.—Plum. icon. t. 259. f. 3. Berries blue, 1-seeded.

Heart-leaved Cissus. Shrub cl.

8 C. ROTUNDIFÒLIA (Vahl. symb. 3. p. 19.) leaves cordate, roundish, smooth, serrated; umbels simple; branches pruinose, with swollen joints. ♄. ◡. S. Native of Java. Sælánthus rotundifòlius, Forsk. descr. icon. t. 4. Berry 1-seeded, large, oblong.

Round-leaved Cissus. Shrub cl.

9 C. RE'PENS (Lam. dict. 1. p. 31.) leaves cordate, ovate, somewhat toothed, and are, as well as the branches, smooth; flowers umbellate; stems creeping. ♃. ◡. S. Native of Malabar.—Rheed. mal. 7. t. 48. C. cordàta, Roxb. fl. ind. 1. p. 425. Stems succulent. Berries red, 1-seeded. Stipulas oval. Flowers dull-purple. Taste of leaves very acrid.

Creeping Cissus. Clt. 1821. Pl. cl.

10 C. PUNCTICULÒSA (Rich. act. soc. hist. nat. par. 106.) leaves broad-cordate, very blunt, with an abrupt, blunt point, and remote, bristle-like serratures; branches dotted. ♄. ◡. S. Native of Cayenne.

Dotted-branched Cissus. Clt. 1818. Shrub cl.

11 C. TAMOÌDES (St. Hil. fl. bras. 1. p. 342.) branches unarmed, terete, scabrous; leaves simple, cordate, acuminate, sharply-denticulated, full of pellucid dots, scabrous; pedicels and flowers smooth. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers umbellate at the tops of the branches. Petals yellow.

Tamus-like Cissus. Shrub sarmentose.

12 C. UVÍFERA (Afz. rem. guin. 69. ex Spreng. neue. entd. 3. p. 235.) leaves somewhat peltately-cordate, quite entire, smooth, spotted at the base; shoots round, smooth. ♄. ◡. S. Native of Sierra Leone. Berries black, pulpy, with an austere, acid taste, but are eaten by the natives.

Grape-bearing Cissus. Shrub cl.

13 C. TILIA'CEA (H. B. et Kunth, nov. gen. et spec. amer. 5. p. 222.) smooth; leaves roundish, ovate, cordate, sharply-toothed, somewhat coriaceous; branches tetragonal; cymes dichotomous. ♄. ◡. S. Native near the city of Mexico.

Lime-tree-leaved Cissus. Shrub cl.

14 C. QUADRANGULA'RIS (Lin. mant. 39.) leaves cordate, kidney-shaped, serrated, smooth, fleshy; stem tetragonal, winged. ♃. ◡. G. Native from Arabia to Cochin-china. Root tuberous.—Rumph. amb. 5. t. 44. Sælánthus quadragònus, Forsk. descr. 33. icon. t. 2. Roxb. fl. ind. 1. p. 426. Berries red, 1-seeded, about the size of peas.

Quadrangular-stemmed Cissus. Clt. 1790. Pl. cl.

15 C. COMPRESSICAU'LIS (Ruiz et Pav. fl. per. 1. p. 64. t. 100.) leaves cordate, acutely-serrated, pubescent; flowers umbellate; partial peduncles dichotomous; stem tetragonal, compressed. ♄. ◡. S. Native of Peru among rubbish near Chancay. Berries dark-purple.

Compressed-stemmed Cissus. Shrub cl.

16 C. DI'SCOLOR (Blum. bijdr. 4th number.) leaves cordate-oblong, acuminated, discoloured, with bristly-serratures, and are, as well as the angular branches, smooth; cymes somewhat quinquefid, shorter than the leaves. ♄. ◡. S. Native of Java.

Discoloured-leaved Cissus. Shrub cl.

17 C. NODÒSA (Blum. bijdr. 1. c.) leaves somewhat cordate, oblong, pointed, with bristly serratures, smooth; corymbs dichotomous; pedicels umbellate; stem round, herbaceous, knotted. ♃. ◡. S. Native of Java.

Knotted-stemmed Cissus. Pl. cl.

18 C. JAVA'NA (D. C. prod. 1. p. 628.) leaves somewhat cordate, ovate-lanceolate, acuminated, smooth, somewhat serrated; serratures bristly; branches roundish, furrowed; peduncles trifid, rather corymbose. ♄. ◡. S. Native of Java.

Java Cissus. Shrub cl.

19 C. PENTAGO'NA (Roxb. fl. ind. 1. p. 426.) leaves cordate, rarely somewhat lobed, serrulated, acuminated, smooth; branches shining, pentagonal, with roundish angles and furrowed sides. ♃. ◡. S. Native of the East Indies in the forests of Chittagong.

Pentagonal-branched Cissus. Pl. cl.

20 C. SICYOÌDES (Lin. spec. 170.) leaves cordate, ovate, smooth, thickish, with adpressed, bristly serratures; branches round. ♃. ◡. S. Native of Jamaica and Guadaloupe in waste places, and by the sides of walls.—Sloan. hist. 1. t. 144. f. 1.—Brown. jam. t. 2. f. 1 and 2. Lam. ill. t. 84. f. 1. Jacq. amer. 22. t. 15. pict. 16. t. 20. The berries are black and oblong, and are eaten by the natives, as well as several other of the species, but are chiefly food for birds.

Choco-like Cissus. Fl. July, Aug. Clt. 1768. Pl. cl.

21 C. FULIGI'NEA (H. B. et Kunth, nov. gen. amer. 5. p. 224.) the whole plant of a rusty-black; leaves roundish-ovate, deeply-cordate, remotely-toothletted, hairy above, and clothed with soft down beneath; lower leaves 3-5-lobed, upper ones entire; branches round, and are, as well as the peduncles, clothed with hairy down. ♄. ◡. S. Native of South America on the banks of the river Magdalena.

Blackish Cissus. Shrub cl.

22 C. ANTA'RCTICA (Vent. choix. t. 21.) leaves ovate, somewhat cordate, loosely serrated, smoothish; nerves glandular at the base; petioles and branches clothed with rusty-pubescence. ♄. ◡. G. Native of New Holland. Sims, bot. mag. 2488. C. glandulòsa, Poir. suppl. 105. Vìtis Kánguruh, Hortul. C. Baudiniàna, Brouss.

Antarctic Cissus or Kanguruh Vine. Clt. 1790. Shrub cl.

23 C. CAPE'NSIS (Willd. spec. 1. p. 655.) leaves somewhat cordate, 5-angled, toothed, clothed with rusty down beneath; flowers somewhat capitate. ♄. ◡. G. Native of the Cape of Good Hope. Vìtis Capénsis, Thunb. fl. cap. 2. p. 105.

Cape Cissus. Clt. 1792. Shrub cl.

24 C. RUGÒSA (D. C. prod. 1. p. 629.) leaves cordate, trifid or quinquefid, wrinkled; flowers racemose. ♄. ◡. S. Native of Jamaica on the mountains. C. nov. sp. Lunan, hort. jam. 2. p. 216. Berry black, large, 4-seeded. Leaves almost like those of the common vine.

Wrinkled-leaved Cissus. Shrub cl.

25 C. CANE'SCENS (Lam. ill. no. 1620.) leaves ovate, oblong, unequally-cordate at the base, toothed, clothed with short, hoary down; branches angular; peduncles and cymes villously-tomentose. ♄. ◡. S. Native of Peru. H. B. et Kunth, nov. gen. amer. 5. p. 223.

Hoary Cissus. Shrub cl.

26 C. UMBRÒSA (H. B. et Kunth, nov. gen. amer. 5. p. 223.) leaves ovate, unequal-sided, obliquely-cordate, sharply-toothletted, hairy above, but clothed with hoary, downy pubescence beneath; branches rather tetragonal, hairy; peduncles and cymes smoothish. ♄. ◡. S. Native of South America on the shady banks of the river Magdalena.

Shaded Cissus. Shrub cl.

** *Leaves simple, not cordate, entire or toothed, sometimes lobed.*

27 C. SMILA'CINA (H. B. et Kunth, nov. gen. amer. 5. p. 224.) leaves ovate-oblong, somewhat acuminated, obliquely truncate at the base, smooth above, hairy beneath, as well as the furrowed branches; cymes and peduncles smooth. ♄. ◡. S. Native of South America on the banks of the river Magdalena in shady places. C. sicyoìdes, Poir. dict. suppl. 1. p. 104. ex H. et B.

Smilax-like Cissus. Clt. 1820. Shrub cl.

28 C. OVA'TA (Lam. ill. no. 1619. St. Hil. fl. bras. 1. p. 343.) leaves ovate-oblong, acuminated, smooth, rather scabrous, with sharply-toothletted serratures; branches unarmed, channelled, smooth; pedicels and flowers smooth. ♄. ◡. S. Native of Guadaloupe, Jamaica, and Brazil in the province of Rio Janeiro. Irsiòla, Brown. jam. t. 4. f. 1 and 2. Very like *C. sicyoìdes*, but the leaves are ovate, not cordate. It is perhaps the C. smilácina of Willd. enum. 163.? The berries are oblong and black, and are eaten by the natives. Flowers yellowish-green.

Ovate-leaved Cissus. Clt. 1822. Shrub cl.

29 C. ELLÍPTICA (Schlecht. et Cham. in Linnæa. 5. p. 221.) leaves elliptical-ovate or obovate, truncate at the base; branches obscurely quadrangular. ♄. ◡. S. Native of Mexico. This species differs from *C. sicyoìdes* in the leaves neither being cordate, nor acuminated, nor smooth beneath.

Elliptical-leaved Cissus. Shrub cl.

30 C. OBSCU'RA (D. C. prod. 1. p. 629.) leaves ovate-lanceolate, acuminated, smooth, with a few awn-like, pressed serratures. ♄.? ◡. S. Native of South America? Large panicles, much branched, sterile, small ones fertile. This is perhaps the C. ovàta of Rich. act. soc. hist. nat. par. p. 105. a native of Cayenne, but not of Lam.

Obscure Cissus. Shrub cl.

31 C. UMBELLA'TA (Lour. fl. coch. 84.) leaves ovate, smooth, quite entire; umbels compound; corollas woolly inside. ♄. ◡. S. Native of China about Canton. Calyx truncate, surrounding the berry, which is 1-seeded.

Umbellate-flowered Cissus. Shrub cl.

32 C. GLANDULÒSA (Gmel. syst. 256.) leaves ovate, acute, serrate-toothed, fleshy; pedicels and calyxes glandular at the base. ↾. ◡. G. Native of Arabia. Sælánthus glandulòsus, Forsk. descr. 34. Root tuberous. Stems round. Perhaps this is the same as C. glandulòsa of Horn. hort. hafn. 1. p. 143. which is said to have hispid pedicels and calyx.

Glandular-calyxed Cissus. Clt. 1819. Pl. cl.

33 C. PRODU'CTA (Afz. rem. guin. 63. ex Spreng. neue. entd. 3. p. 234.) leaves ovate-oblong, acuminated, with rather bristly teeth; flowers panicled; shoots very long, striated, compressed. ↾. ◡. S. Native of Guinea.

Produced Cissus. Shrub cl.

34 C. TUBERÒSA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 629.) leaves obovate, smooth, coarsely-serrated or trifid, with cut lobes; root tuberous. ↾. ◡. S. Native of New Spain. Very like *C. sicyoìdes* and *C. ovàta*, and is probably only a variety of one of them.

Tuberous-rooted Cissus. Pl. cl.

35 C. MICRA'NTHA (Poir. suppl. 1. p. 105.) leaves smooth, ovate, somewhat 3-lobed, with acute-serrated lobes, middle lobe longest; peduncles quinquefid at the apex, umbellate, length of petiole. ↾? ◡. S. Native of St. Domingo.

Small-flowered Cissus. Pl. cl.

36 C. TOMENTÒSA (Lam. ill. no. 1613.) leaves somewhat pentagonal, bluntly-toothed, smooth above, and clothed with rusty down beneath; petioles compressed. ♄. ◡. S. Native of Bourbon. Flowers and fruit unknown.

Tomentose Cissus. Shrub cl.

37 C. ANGULA'TA (Lam. ill. no. 1614.) leaves ovate, somewhat pentagonal, and angularly lobed, downy beneath; peduncles flat, longer than the leaves. ↾. ◡. S. Native of the East Indies. Berry dark-purple.

Angular-leaved Cissus. Pl. cl.

38 C. DUARTEA'NA (St. Hil. fl. bras. 1. p. 343. t. 71.) hairy; branches unarmed, furrowed; leaves trisected or profoundly 3-lobed, obtuse, sinuated. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers umbellate at the tops of the branches.

Duarte's Cissus. Shrub cl.

39 C. TRILOBA'TA (Lam. dict. 1. p. 31.) leaves 3-lobed or trisected; lobes ovate, acute, toothed, rather fleshy; branches round. ♄. ◡. S. Native of Malabar.—Rheed. mal. 5. t. 45.

Three-lobed-leaved Cissus. Clt. 1822. Shrub cl.

*** *Leaves trifoliate.*

40 C. A'CIDA (Lin. spec. 170.) leaflets obovately-cuneated, fleshy, smooth, toothed at the apex, but almost entire at the base. ♄. ◡. S. Native of South America and the West Indies. Jacq. schœnbr. 1. t. 33.—Plum. ed. Burm. t. 259. f. 3. Sícyos angulàta, Lin. spec. ed. 1. p. 1013. Berries black, surrounded by the calyx. The whole plant has an acid taste.

Acid Cissus. Fl. June, Aug. Clt. 1692. Shrub cl.

41 C. SETÒSA (Roxb. fl. ind. 1. p. 428.) leaves sessile; leaflets 3, rarely 5, fleshy, smooth, oval, wavy, coarsely and unequally bristly-toothed; stipulas cordate; stems round, beset with glandular bristles. ↾. ◡. S. Native of the East Indies in hedges and forests in the Rajamundree Circar. Berries 1-seeded. Root fusiform. Every part of the plant is exceedingly acrid. The leaves toasted and oiled are applied to indolent tumours to bring them to suppuration.

Bristly-toothed-leaved Cissus. Pl. cl.

42 C. CARNÒSA (Lam. dict. 1. p. 31.) leaflets oval, obtuse, serrated, fleshy, smooth; branches and petioles round. ↾. ◡. S. Native of the East Indies. C. pergamàcea, Blum. bijdr. 4th number.—Rumph. amb. 5. t. 166. f. 2.—Rheed. mal. 7. t. 9. Roxb. fl. ind. 1. p. 427. Berries black, 4-seeded. Flowers small, white. Branches rather flattened.

Fleshy-leaved Cissus. Clt. 1818. Pl. cl.

43 C. TRIFOLIA'TA (Jacq. amer. 23.) leaflets obovate, deeply serrated, acute, fleshy, smooth; branches subalate. ♄. ◡. S. Native of Jamaica and Surinam in hedges. Swartz, obs. p. 50. —Sloan. jam. t. 142. f. 5-6.? Sícyos trifoliàta, Lin. spec. ed. 1. p. 1013. Berries small, black. This is probably distinct from *C. ácida*. C. trifoliàta of Lour. is most probably a very distinct species. Every part of the plant is acid.

Trifoliate Cissus. Fl. June, Aug. Clt. 1739. Shrub cl.

44 C. CAU'STICA (Tuss. ant. t. 16.) leaflets ovate, obtuse; branches round, jointed, succulent; petioles channelled. ♄. ◡. S. Native of the Caribbee Islands. Flowers corymbose, blood-coloured. The plant is very caustic.

Caustic Cissus. Shrub cl.

45 C. SALUTA'RIS (H. B. et Kunth, nov. gen. amer. 5. p. 225.) leaflets oblong, sharply serrated, full of pellucid dots, hairy above, and clothed with rusty hairs beneath; branches round, and are as well as the peduncles hairy and striated. ♄. ◡. S. Native of New Andalusia near Quetepe and Cumana in arid places. The root of this species is useful against dropsy.

Salutary Cissus. Shrub cl.

46 C. SPINÒSA (St. Hil. fl. bras. 1. p. 345.) branches spinose, angular, young ones tomentose; leaves ternate; leaflets unequal, lanceolate, dentately serrated, covered with white tomentum beneath; pedicels pilose; flowers puberulous. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers umbellate at the tops of the branches. Petals violet?

Spinose-stemmed Cissus. Shrub sarmentose.

47 C. SYLVA'TICA (St. Hil. fl. bras. 1. p. 345.) branches unarmed, angular, smoothish; leaves ternate; leaflets unequal, lanceolate, sharply serrated, smooth, full of pellucid dots; pedicels pilose; flowers smoothish. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers umbellate at the tops of the branches.

Wood Cissus. Shrub sarmentose.

48 C. A'LBIDA (St. Hil. fl. bras. 1. p. 344.) branches terete, tomentose; leaves ternate; leaflets unequal, acute, unequally-toothed, tomentose beneath; pedicels tomentose; flowers hairy. ♄. ◡. S. Native of Brazil in the province of Minas Geraes. Flowers in umbels at the tops of the branches. Petals green.

White Cissus. Shrub cl.

49 C. OBOVA'TA (Vahl. symb. 3. p. 19.) leaflets smooth, membranaceous, obovate, quite entire, mucronated; peduncles trichotomous, longer than the leaves. ♃? ◡. S. Native of Santa Cruz.

Obovate-leaved Cissus. Pl. cl.

50 C. PAUCIFLÒRA (D. C. prod. 1. p. 630.) leaflets obovate, almost entire, cuneated at the base, blunt at the apex, smooth, stiff; peduncles few-flowered, shorter than the leaves. ♄. ◡. G. Native of the Cape of Good Hope. Burch, cat. no. 3009.

Few-flowered Cissus. Shrub cl.

51 C. TERNA'TA (Gmel. syst. 1. p. 256.) leaflets smooth, stiff, ovate, cordate, acute, serrated; branches round. ♄. ◡. G. Native of Arabia in corn-fields. Sælánthus ternàtus, Forsk. descr. 35. Common petioles wanting.

Ternate-leaved Cissus. Shrub cl.

52 C. LU'CIDA (Poir. suppl. 1. p. 106.) leaflets smooth, shining, ovate, setaceously-toothletted; branches compressed, tetragonal, somewhat winged, glandular. ♄. ◡. S. Native of Cayenne. Allied to *C. alàta*.

Shining-leaved Cissus. Shrub cl.

53 C. QUADRIALA'TA (H. B. et Kunth, l. c.) leaflets smooth, obtuse, crenate-toothletted, and full of pellucid dots, middle ones ovate and acuminated at the base, lateral ones unequal-sided; branches tetragonal, 4-winged; peduncles and cymes hairy. ♄. ◡. S. Native of the Isle of Panumana in the mission of the Orinoco.

Four-winged-stemmed Cissus. Shrub cl.

54 C. MICROCA'RPA (Vahl. ecl. 1. p. 16.) leaflets oblong, serrated, mucronulate, smooth, membranaceous; branches angular. ♄. ◡. S. Native of the Caribbee Islands.—Plum. icon. ed. Burm. t. 259. f. 4. Berries oblong, black.

Small-fruited Cissus. Fl. June, Aug. Clt. 1820. Sh. cl.

55 C. ACUTIFÒLIA (Poir. suppl. 1. p. 106.) leaflets ovate, toothed, somewhat lobed, smooth, membranaceous; lobes acute; branches angular, somewhat compressed. ♄. ◡. S. Native of the East Indies.

Acute-leaved Cissus. Shrub cl.

56 C. ERÒSA (Rich. act. soc. hist. nat. par. 106.) leaflets membranaceous, smooth, oblong-ovate, rather acute at the base, erosely-toothed; petioles rather marginate; cymes on long peduncles. ♄. ◡. S. Native of Cayenne.

Erose-toothed Cissus. Shrub cl.

57 C. TIMORIE'NSIS (D. C. prod. 1. p. 630.) leaflets membranous, smooth, stalked, acute, broadly toothed; panicles loose, trichotomous. ♄. ◡. S. Native of Timor.

Timor Cissus. Shrub cl.

58 C. EMARGINE'LLA (Swartz. in act. holm. 1825. p. 427.) leaflets obovate, emarginate, remotely crenated, smooth; branches and petioles quadragonal. ♄. ◡. S. Native of the Caribbee Islands.

Emarginate-leaved Cissus. Shrub cl.

59 C. PAPILLÒSA (Blum. bijdr. 4th number,) leaflets ovate-oblong, acuminated, coarsely and sharply toothed, smooth, coriaceous; corymbs axillary, divaricating; stem woody, papillose, much branched. ♄. ◡. S. Native of Java.

Papillose-stemmed Cissus. Shrub cl.

60 C. GENICULA'TA (Blum. bijdr. l. c.) leaflets oblong, acuminated, bluntly toothletted, membranaceous, pubescent on the rib on both surfaces, lateral leaflets half-cordate; corymbs dichotomous, jointed; stem suffruticose, roundish. ♄. ◡. S. Native of Java.

Jointed-stemmed Cissus. Shrub cl.

61 C. RHODOCA'RPA (Blum. bijdr. l. c.) leaflets ovate-elliptical, acuminated, membranaceous, smooth, coarsely and unequally toothed, lateral leaflets cordate; corymbs dichotomous, shorter than the leaves; stem somewhat tetragonal. ♄. ◡. S. Native of Java. Fruit red, eatable.

Red-fruited Cissus. Shrub cl.

62 C. HIRTE'LLA (Blum. bijdr. l. c.) leaflets ovate-oblong, membranous, unequally serrated, downy beneath as well as the petioles; corymbs dichotomous, axillary. ♄. ◡. S. Native of Java.

Hairy Cissus. Shrub cl.

63 C. ALA'TA (Jacq. amer. 23. t. 182. f. 10.) leaves hairy; leaflets ovate, cordate, acute, serrated; branches with membranous angles. ♄. ◡. S. Native of Jamaica and Carthagena, climbing among trees and shrubs.—Sloan. hist. 1. p. 233. t. 144. C. trifoliàta, Lin. spec. 170.? Petals red; nectary yellow.

Winged-stemmed Cissus. Clt. 1822. Shrub cl.

64 C. PUBE'SCENS (H. B. et Kunth, nov. gen. amer. 5. p. 226.) leaflets acute, sharply toothletted, puberulous above, hoary-pubescent beneath, middle one largest, stalked, ovate-oblong, narrow-cuneated at the base; branches quadrangular, striated, hairy. ♄. ◡. S. Native of South America, plentiful on the banks of the river Magdalena between Mompox and Buenavista. Flowers and fruit unknown.

Pubescent Cissus. Shrub cl.

65 C. RHOMBIFÒLIA (Vahl. ecl. 2. p. 10.) leaflets pubescent, serrulated, lateral ones semicordate; middle one ovate-rhomboid; branches angular. ♄. ◡. S. Native of the Island of Trinidad.

Rhomb-leaved Cissus. Shrub cl.

66 C. CINE'REA (Lam. ill. no. 1624.) leaflets thickish, pubescent, ovate, toothed, lateral ones somewhat cordate; branches angular; petioles round. ♄. ◡. S. Native of the East Indies, particularly Java. C. pubinérvis, Blum. bijdr. 4th number.

Grey Cissus. Shrub cl.

67 C. CIRRHÒSA (Pers. ench. 1. p. 142.) leaflets fleshy, villous, ovate, serrated; branches and petioles compressed; berries hairy. ♄. ◡. S. Native of the Cape of Good Hope. Vìtis cirrhòsa, Thunb. fl. cap. 2. p. 106. There is a variety of this totally smooth according to Thunberg, it may probably prove a distinct species.

Tendrilled Cissus. Shrub cl.

68 C. CRENA'TA (Vahl. symb. 3. p. 19.) leaflets roundish, crenated, young ones villous. ♄. ◡. S. Native of the East Indies. Vìtis trifòlia, Lin. spec. 293.—Rumph. amb. 5. t. 166. f. 2. C. obtusifòlia, Lam. dict. 1. p. 31.?

Crenate-leaflëtted Cissus. Shrub cl.

69 C. ANGUSTIFÒLIA (Roxb. fl. ind. 1. p. 427.) flowers dioecious; leaflets smooth on both surfaces, lanceolate, serrated; stipulas ovate, acute; cymes shorter than the petioles; stem much compressed. ♄. ◡. S. Native of Sumatra. Berries white, round, 1-2-seeded, about the size of peas.

Narrow-leaved Cissus. Fl. Feb. Clt. 1818. Shrub cl.

* * * * *Leaves palmate, with 5 leaflets.*

70 C. QUINA'TA (Ait. hort. kew. ed. 2. vol. 1. p. 260.) leaflets

obovate, wedge-shaped, serrated above. ♄ . ◡. G. Native of the Cape of Good Hope.

Quinate-leaved Cissus. Fl. July. Clt. 1790. Shrub cl.

71 C. PENTAPHY'LLA (Willd. spec. 1. p. 659.) leaflets smooth, ovate, serrated, acuminated. ♃. ◡. G. Native of Japan. Vitis pentaphýlla, Thunb. fl. jap. 106.

Five-leaved Cissus. Fl. April, Sept. Clt. 1790. Pl. cl.

72 C. STRIA'TA (Ruiz et Pav. fl. per. 1. p. 64. t. 100.) leaflets smooth, sessile, oblong-lanceolate, serrated; stem striated, flexuous; cymes arched. ♄ . ◡. S. Native of Peru.

Striated-branched Cissus. Shrub cl.

73 C. MEXICA'NA (Moc. et Sesse, fl. mex. icon. ined. and D. C. prod. 1. p. 631.) leaflets smooth, stalked, oblong-lanceolate, serrated; stem somewhat tetragonal. ♄ . ◡. S. Native of Mexico.

Mexican Cissus. Shrub cl.

74 C. PALMA'TA (Poir. suppl. 1. p. 107.) leaflets 5-7, smooth, sessile, linear-lanceolate, sinuated, with bristle-like teeth; branches tetragonal. ♄ . ◡. S. Native of the Isle of France. Flowers umbellate.

Palmate-leaved Cissus. Shrub cl.

75 C. GRANULÒSA (Ruiz et Pav. fl. per. 1. t. 101.) leaflets smooth, obovate, toothed; stem angular, granular; cymes spreading. ♄ . ◡. S. Native of Peru among broken rocks.

Granular-stemmed Cissus. Shrub cl.

76 C. DIGITA'TA (Lam. ill. no. 1627.) leaves smooth, upper ones trifoliate; leaflets ovate, serrated; branches round. ♄? ◡. G. Native of Arabia. Sælánthus digitàtus, Forsk. descr. 35. icon. t. 3.

Digitate-leaved Cissus. Shrub cl.

77 C. DIVERSIFÒLIA (D. C. prod. 1. p. 631.) leaves smooth, radical ones simple, middle ones trifoliate, upper ones with 5 leaflets; leaflets acuminated, tapering to the base, acutely-crenated; petioles with a pubescent line. ♄ . ◡. S. Native of? C. heterophýlla, Link. enum. 1. p. 143. but not of Poir.

Diverse-leaved Cissus, Clt. 1822. Shrub cl.

78 C. FEMÍNEA (Roxb. fl. ind. 1. p. 428.) leaves digitate, shining, with stalked, broad-lanceolate, entire, or somewhat crenulate leaflets; style wanting; petals and stigmas 4 or 5. ♄ . ◡. S. Native of the East Indies on wooded mountains. Flowers small, green, or greenish-yellow.

Female Cissus. Shrub cl.

79 C. ELONGA'TA (Roxb. fl. ind. 1. p. 429.) leaves digitate, smooth, with stalked, oblong, acute, remotely serrated leaflets; stipulas and bracteas cordate; cymes trichotomous; branchlets fleshy, polished, a little compressed. ♄ . ◡. S. Native among the mountains on the coast of Coromandel and Bengal. Plant climbing over trees to a considerable extent. Berries round-turbinate, the size of a cherry, when ripe black, 1-seeded.

Elongated Cissus. Clt. 1818. Shrub cl.

80 C. AURICULA'TA (Roxb. fl. ind. 1. p. 630.) leaflets stalked, oblong, acute, bluntly serrated, smooth above, villous beneath; stipulas ear-shaped; branches round, villous. ♄ . ◡. S. Native of Mysore. Shoots climbing over trees to a great extent. Berries size, shape, and appearance of a common cherry, 1-seeded.

Eared-stipuled Cissus. Fl. year. Clt. 1820. Shrub cl.

81 C. TUBERCULA'TA (Blum. bijdr. 5th number,) leaflets oblong, acuminated, serrated, smooth, coriaceous; corymbs shorter than the petioles; stem compressed, tubercled. ♄ . ◡. S. Native of Java.

Tubercled-stemmed Cissus. Shrub cl.

82 C. MUTA'BILIS (Blum. bijdr. 1. c.) leaflets oblong, acuminated, lateral ones bluntish, remotely serrated; serratures scarious; cymes axillary; stem woody; berries 3-4-seeded. ♄ . ◡. S. Native of Java.

Changeable Cissus. Shrub cl.

83 C. SCARIÒSA (Blum. bijdr. 1. c.) leaflets oval, bluntish, coriaceous, coarsely serrated at the apex; serratures scarious at the top; stem chinky. ♄ . ◡. S. Native of Java.

Scarious Cissus. Shrub cl.

84 C. LÆVIGA'TA (Blum. bijdr. 1. c.) leaflets ovate, acute, with glandular serratures, smooth, coriaceous; corymbs axillary; stem round, warted. ♄ . ◡. S. Native of Java.

Smooth-leaved Cissus. Shrub cl.

85 C. DICHÓTOMA (Blum. bijdr. 1. c.) leaflets coriaceous, smooth, ovate-lanceolate, acuminated, with glandular serratures; corymbs dichotomous, shorter than the leaves. ♄ . ◡. S. Native of Java.

Dichotomous Cissus. Shrub cl.

86 C. THYRSIFLÒRA (Blum. bijdr. 1. c.) leaflets ovate-oblong, acute, serrulated, clothed beneath with rusty down as well as the branches; thyrse tendrilled. ♄ . ◡. S. Native of Java.

Thyrse-flowered Cissus. Shrub cl.

87 C. QUINQUEFÒLIA (Sol. mss. bot. mag. t. 2443.) leaflets 5, oblong-lanceolate, tapering to both ends, deeply serrated, smoothish; branches round, knotted, smooth; branches of panicle divaricating; pedicels puberulous; flowers smooth, umbellate. ♄ . ◡. S. Native of Brazil. C. Simsiàna, Schult. 3. p. 545. Flowers green.

Five-leaved Cissus. Fl. Jul. Clt. 1800. Sh. cl.

* * * * * *Leaves pedate, with 5-7-9 leaflets; middle leaflet solitary, lateral ones in twos, threes, or fours.*

88 C. JAPÓNICA (Willd. spec. 1. p. 659.) leaflets 5, smooth, oval, with awned serratures, lateral ones obtuse; peduncles longer than the leaves. ♃. ◡. G. Native of Japan.

Japan Cissus. Pl. cl.

89 C. NIPAULE'NSIS (D. C. prod. 1. p. 632.) leaflets 5, smooth, oval, acute, tapering to the base, with awned serratures; peduncles shorter than the leaves. ♃ . ◡. G. Native of Nipaul.

Nipaul Cissus. Pl. cl.

90 C. CORIA'CEA (D. C. prod. 1. p. 632.) leaflets 5, smooth, rather coriaceous, oval, tapering a little to both ends, broadly and distantly crenated; peduncles shorter than the leaves. ♄ . ◡. S. Native of the island of Timor. There are 2 varieties of this plant, one with broader and the other with narrower leaflets.

Leathery-leaved Cissus. Shrub cl.

91 C. LANCEOLA'RIA (Roxb. fl. ind. 1. p. 430.) leaflets 5, smoothish, rather coriaceous, lanceolate, acuminated, irregularly somewhat serrated; cymes stalked, almost the length of the petioles. ♄ . ◡. S. Native of the East Indies. C. dioíca, Roxb. in herb. Lamb.—Rheed. mal. 7. p. 15. t. 8. Flowers dioecious, female ones unknown.

Lanceolate-leafletted Cissus. Fl. Feb. Mar. Shrub cl.

92 C. SERRULA'TA (Roxb. fl. ind. 1. p. 432.) leaflets 5, oblong, serrulated; stem polished. ♃ . ◡. S. Native of Chittagong. C. glabràta, Blum. bijdr. no. 4.

Serrulated-leafletted Cissus. Fl. April, May. Pl. cl.

93 C. HETEROPHY'LLA (Poir. suppl. 1. p. 107.) leaflets 5, smooth, upper ones somewhat rhomboid, crenated, lower ones oblique, obtuse; stem fistular, striated. ♄ . ◡. S. Native of Java. C. leucocárpa, Blum. bijdr. no. 4. Berries white.

Variable-leaved Cissus. Shrub cl.

94 C. PEDA'TA (Lam. dict. 1. p. 31.) leaflets 7-9, lanceolate, acuminated, serrated, clothed with downy pubescence beneath; branches and petioles hoary. ♄ . ◡. S. Native of the East Indies.—Rheed. mal. 7. t. 10.? but the flowers are said to be 5-cleft. Roxb. fl. ind. 1. p. 431. C. heptaphýlla, Retz. obs. v. 22. Berries white, 4-lobed, depressed, 4-seeded.

Pedate-leaved Cissus. Shrub cl.

* * * * * * *Leaves pinnate or bipinnate, with opposite leaflets.*

95 C. PINNA'TA (Russ. besch. alep. ex Rœm. et Schult. syst. 3. p. 317.) leaves pinnate and trifoliate, smooth, membranaceous, with ovate, cut leaflets. ♄? ◡. S. Native of Aleppo.

Pinnate-leaved Cissus. Shrub cl.

96 C. OBLÍQUA (Ruiz et Pav. fl. per. 1. p. 65. t. 101. f. 6.) leaves pinnate, pubescent, with 2 or 3 oblique, cordate leaflets. ♄? ◡. S. Native of Peru.

Oblique-leafletted Cissus. Shrub cl.

97 C. MA'PPIA (Lam. ill. no. 1631.) leaves somewhat bipinnate, smooth, rather fleshy; leaflets ovate, quite entire. ♄. ◡. S. Native of the Isle of France, where it is called *Mappia*.

Mappia Cissus. Shrub cl.

98 C. ORIENTA'LIS (Lam. ill. p. 332. t. 84. f. 2.) leaves bipinnate, smooth; leaflets ovate, serrated. ♄. ◡. S. Native of the Levant.

Eastern Cissus. Shrub cl.

99 C. CONNI'VENS (Lam. ill. no. 1630.) leaves somewhat bipinnate, smooth; leaflets ovate, bluntish, a little toothed; petals conniving. ♄. ◡. S. Native of Madagascar. Differing from *C. orientàlis*, in having smaller and fewer leaflets.

Conniving-petalled Cissus. Shrub cl.

Cult. *Cissus* is a climbing genus of plants, hardly distinguishable from *Vìtis*. They are hardly worth cultivating, except in general collections; they will grow freely in any light soil, and cuttings will root readily under hand-glasses; those of the stove species should be placed in a moist heat.

II. PTERISA'NTHES (from πτερον, *pteron*, a wing, and ανθος, *anthos*, a flower; winged perigone). Blum. bijdr. no. 4.

LIN. SYST. *Polygàmia, Dioècia.* Perigone leafy, lobately-winged, coriaceous, deformed. Flowers polygamous, marginal ones male, pedicellate, hermaphrodite ones in the disk sessile. Male flowers with an urceolate, entire calyx, 4 rhomboid, erectish petals, 4 stamens which are opposite the petals, and with a tumid disk in the centre. Hermaphrodite flowers, with a short entire calyx, spreading petals, and with the stamens as in the male. Ovary immersed in the disk, crowned by a sessile, bluntish stigma. Berries obovate, 1 rarely 2-seeded. Seeds gibbous on the back, compressed on the other side, and with a longitudinal furrow. Albumen cartilaginous, 2-lobed. Embryo straight.

1 P. INVOLUCRA'TA (Blum. l. c.) leaves digitate; leaflets oblong, acuminated, repandly-toothed; flowers disposed in involucrated fascicles, outer ones on pedicels, inner ones sessile. ♄. ◡. S. Native of Java. Cissus involucràta, Spreng. syst. append. p. 44.

Involucrated-flowered Pterisanthes. Shrub cl.

Cult. Any light soil will suit this shrub, and cuttings will root readily under a hand-glass, in heat. Not worth cultivating unless in general collections.

III. AMPELO'PSIS (from αμπελος, *ampelos*, a vine, and οψις, *opsis*, resemblance; resembling the vine in every respect). Mich. fl. bor. amer. 1. p. 159. D. C. prod. 1. p. 632.

LIN. SYST. *Pentándria, Monogýnia.* Calyx almost entire. Petals 5 (as in *Vìtis*) but separating from each other from the apex to the bottom (as in *Cissus*). Stamens 5. Style 1, crowned by a capitate stigma. Ovary not immersed in the disk, 2-4-seeded (Kunth, nov. gen. amer. 5. p. 222.). This is an intermediate genus between *Cissus* and *Vìtis*.

* *Leaves simple.*

1 A. CORDA'TA (Mich. fl. bor. amer. 1. p. 159.) leaves cordate, acute, toothed, somewhat 3-lobed; nerves villous beneath; racemes doubly bifid. ♄. ◡. H. Native of North America from Pennsylvania to Carolina on river sides and among hedges. Císsus ampelópsis, Pers. ench. 1. p. 142. Vìtis indivìsa, Willd. baumz. 538. Flowers reddish. Berries pale-red.

Cordate-leaved Ampelopsis. Fl. June, July. Clt. 1803. Shrub cl.

2 A. BÓTRIA (D. C. prod. 1. p. 633.) leaves cordate, crenated, 3-5-lobed, downy; racemes subdivided. ♄. ◡. S. Native of the eastern coast of Africa on the shores of Zanquebar. Bótria Africàna, Lour. coch. 154. Flowers reddish. Berries black and eatable.

Grape Ampelopsis. Shrub cl.

* * *Leaves palmate, with 3 or 5 leaflets.*

3 A. HETEROPHY'LLA (Blum. bijdr. 4th number,) leaves simple or ternate, cordate, crenate-serrated, smooth; corymbs dichotomous. ♄. ◡. S. Native of Java. Vìtis Javánica, Spreng. syst. app. p. 90.

Variable-leaved Ampelopsis. Shrub cl.

4 A. HEDERA'CEA (Mich. fl. bor. amer. 1. p. 160.) leaves palmate, with 3 and 5 leaflets, smooth on both surfaces; leaflets stalked, oblong-acuminated, mucronately toothed; racemes corymbose, dichotomous. ♄. ◡. H. Native of North America from Pennsylvania to Carolina on the Alleghany mountains. Hédera quinquefòlia, Lin. spec. 292. Vìtis quinquefòlia, Lam. ill. no. 2815. Císsus hederàcea, Pursh, fl. amer. sept. 1. p. 170. Vìtis hederàcea, Willd. spec. 1. p. 1182,—Corn. can. t. 100. Stems climbing and rooting. Flowers greenish-purple. Fruit small, black. This shrub is used for covering walls like ivy. The leaves turn red in autumn.

Five-leaved *Ivy*, Virginian Creeper, or *Ivy-like* Ampelopsis. Fl. June, July. Clt. 1629. Shrub cl.

5 A. HIRSU'TA (Donn, hort. cant. 166.) leaves palmate, with 3 or 5 ovate, acuminated, coarsely toothed leaflets, which are pubescent on both surfaces. ♄. ◡. H. Native of the Alleghany mountains. Císsus hederàcea, var. β, hirsùta, Pursh, fl. amer. sept. 1. p. 170.

Hairy Ampelopsis. Fl. April, May. Clt. 1806. Shrub cl.

6 A. CAPREOLA'TA (D. Don, prod. fl. nep. p. 188. under *Vìtis*) leaflets 5, elliptical, acuminated, bristly-toothed, coriaceous, pubescent beneath; umbels axillary, 4-rayed, shorter than the leaves. ♄. ◡. H. Native of Nipaul. Resembles *A. hederàcea*, but is one half smaller. Flowers axillary, umbellate.

Climbing Ampelopsis. Shrub cl.

7 A.? TERNA'TA (D. C. prod. 1. p. 633.) leaves trifoliate, clothed with cinereous down beneath; leaflets oblong-oval, mucronate, doubly serrated, lateral ones oblique; stems and tendrils downy. ♄. ◡. S. Native of the East Indies. Vìtis ternàta, Roth. in Rœm. and Schult. syst. 5. p. 319.

Ternate-leaved Ampelopsis. Shrub cl.

* * * *Leaves pinnate or bipinnate.*

8 A. PINNA'TA (Rœm. et Schult. syst. 3. p. 322.) leaves pinnate, smooth, with 5 toothed leaflets. ♄. ◡. S. Native? Vìtis pinnàta, Vahl. symb. 3. p. 43. Branches purplish. Flowers small.

Pinnate-leaved Ampelopsis. Shrub cl.

9 A. BIPINNA'TA (Mich. fl. bor. amer. 1. p. 160.) leaves bipinnate, smooth; leaflets deeply lobed; racemes stalked, twice bifid. ♄. H. Native of Virginia and Carolina, in shady woods on river sides. Vìtis arbòrea, Willd. spec. 1. p. 1183. Císsus stáns, Pursh, fl. amer. sept. 1. p. 170.—Pluk. mant. t. 412. f. 2. Stem upright. Flowers small, green. Berries globose, cream-coloured.

Bipinnate-leaved Ampelopsis. Fl. June, Aug. Clt. 1700. Shrub 10 feet.

Cult. The hardy species of this genus are well adapted for covering walls, or planting with other climbing plants over bowers or trellis-work; they are easily increased by layers or cuttings in the autumn. The stove species are not worth growing, except in general collections; cuttings of these will strike root readily in a pot of sand under a hand-glass, in a moist heat.

IV. VI'TIS (from the Celtic word *guid*, which signifies a tree or shrub, that is to say, the best of trees; in Spanish it is called *vid*; in French *vigne*; in English *vine*. Wine comes from the celtic word *gwin*). Lin. gen. no. 284. D. C. prod. 1. p. 633.

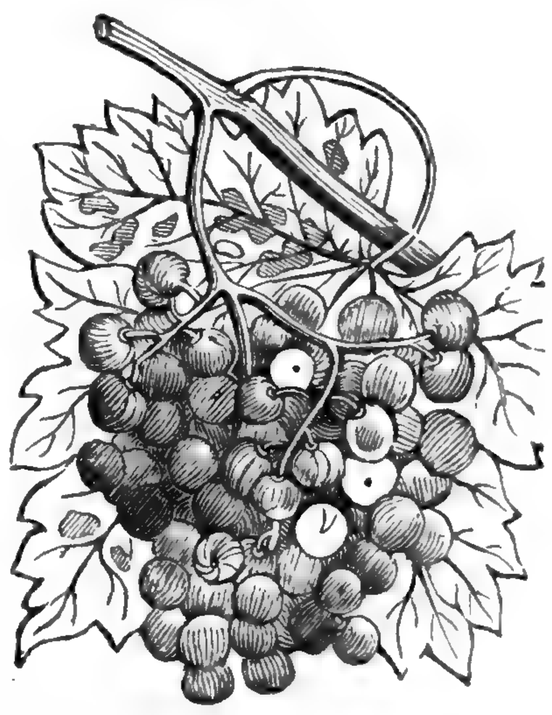
Lin. syst. *Pentándria, Monogýnia.* Calyx usually 5-toothed. Petals 5, cohering at the top, with a likeness to a calyptra, separating at the base, and deciduous. Stamens 5. Style none. Berry 2-celled, 4-seeded; cells and seeds often abortive. Climbing shrubs, with simple, lobed, cut or toothed, rarely compound leaves, and thyrsoid racemes of small, greenish-yellow flowers. The grape-vine belongs to this genus.

† *Hermaphrodite species, natives of the old world.*

* *Leaves entire, toothed, or lobed, seldom jagged.*

1 V. vinífera (Lin. spec. 293.) leaves lobed, sinuately toothed, naked, or downy. ♄. ◡. H. Native, indigenous, in the southern parts of Asia, but now cultivated every where.—Blackw. herb. t. 154. There are varieties with the leaves more or less lobed, smooth, pubescent, or downy, flat or curled, pale or deep-green. Branches prostrate, climbing, or erect, tender or firm. Racemes loose or crowded, ovate, or cylindrical. Berries red, black, pale-white, or green, watery or fleshy, sweet, musky, or sour. Seeds variable in number, often without. See the great number of varieties enumerated by Duhamel in abr. fr. 2. t. 16. Rox. Clem. var. vid. 1 vol. 8vo. madrid 1807. Chapt. vign. 2 vol. 8vo. Paris 1801. Rœm. et Schult. syst. 5. p. 300. See also the catalogue of the Luxemburg Garden at Paris, which includes 1400 varieties, gathered from various fruit catalogues. There are about 600 varieties in the gardens about Geneva.

FIG. 117.



The vine attains a great age in warm climates. Pliny speaks of a vine which had existed 600 years, and Bosc says that there are vines in Burgundy 400 years old. In Italy there are vineyards which have been in a flourishing state upwards of 300 years, and Miller says that a vineyard 100 years old is reckoned young. The extent of the branches of a vine in certain situations is commensurate with its produce and age. In the hedges of Italy they are found overtopping the highest trees, and in England one plant trained against a row of houses in Northallerton covered a space of 137 square yards, then about 100 years old, in the year 1785. There is one at Hampton Court nearly the same age, occupying 116 square yards. The vine sometimes attains a girth of 4 feet in circumference, and will afford planks 15 inches broad. The timber is of great durability. The vine is generally considered of Persian origin, and Dr. Sickler has given a curious account of its migration to Egypt, Greece, and Sicily. From Sicily it is supposed to have found its way to Italy, Spain, and France, and in the latter country it is believed to have been cultivated in the time of Antoninus. In the old world the culture of the vine forms a branch of rural economy from the 21st to 51st degree of north latitude, or from Schiraz in Persia to Coblentz on the Rhine. Some vineyards are even to be found near Dresden and in Moravia, and by means of garden-culture it is made to produce fruit for the table still farther north, being grown to a considerable degree of perfection in the hothouses of St. Petersburgh and Stockholm. The vine is supposed to have been introduced to Britain by the first Roman governors, though from Tacitus it appears to have been wanting in Agricola's time. There is evidence, however, to prove that vineyards were planted here in the year 280 A. D. and Bede, writing in 731, says there are vineyards growing in several places. Harte observes that the religious fraternities of the dark ages spread out from Italy in all directions, carrying with them the knowledge of agriculture and gardening, and from the celebrated nursery of the wealthy fathers of the Chartreuse of France, which contained 24 acres, all sorts of fruit-trees were sold and distributed in Europe and in Asia and Africa, during several centuries previous to the French Revolution, and there is little doubt, Professor Martyn observes, that orchards and vineyards were common appendages to abbeys and monasteries from their first establishment to the time of the Reformation. From this period they have disappeared in part, perhaps from the culture of the vine being little understood by those to whom the lands of religious houses were sold or granted; and in part because a better article could be introduced from our French provinces in the time of the Henries, and continued to be imported when we lost these. In modern times vineyards have been planted and wine produced nearly, if not entirely equal to that of France. It is stated in the Museum Rusticum, that at Arundel Castle in Sussex the Duke of Norfolk had a vineyard, of which there were in his Grace's cellar in 1763, about 60 pipes of excellent Burgundy. In Miller's time the hon. Charles Hamilton of Painshill had a vineyard which succeeded for many years and produced excellent champaigne. There are also accounts of several other individuals who have succeeded in the culture of vineyards. There can be no hesitation therefore in agreeing with these authors, and with Miller, Martyn, and Speechley, that vineyards would succeed in various parts of England, and particularly of Ireland, and produce wine equal to much of that imported from France. Whether this branch of rural economy would be profitable is doubtful to say. It may, however, afford much satisfaction to individuals in favourable situations to form vineyards and drink their own wine.

Grapes appear to have been in demand for the table as early as the 16th century, for Tusser includes "grapes white and red" in his list of fruits published about the year 1560, but as far as appears the vine has only been cultivated as dwarf standards, or trained against walls or buildings till the beginning of the 18th century. Stoves for preserving curious exotics had been introduced soon after the middle of the 17th century, but no mention is to be found of artificial heat to the vine till 1718, when Laurence informs us in his Fruit Garden, published that year, that the Duke of Rutland at Belvoir Castle, has done so much justice to the vine, as to have fires constantly burning behind his sloped walls from Lady-day to Michaelmas, whereby he is rewarded with the largest grapes and even the best Frontignacs in July. These sloped walls were afterwards covered with glass as we are informed. Switzer (Pract. fruit gard. 2d ed. 1763.) appears to be the first author who gives a regular plan of a vinery, with directions for forcing the grape. He advises making fires as early as the middle of December, so as to make vines push by the middle of January. However, since his time the art of forcing has made such rapid progress, that no kitchen-garden worth notice is now without them; the fruit is produced in some vineries during every month of the year; and in the

London market is to be had in the highest degree of perfection from March to January. Vines are grown at the same time on walls, unaided by fire-heat, and in favorable seasons the more hardy sorts attain a tolerable degree of maturity, but they are of little value compared with those grown in vineries and hot-houses. The uses of the grape in Britain are well known, in the dessert it ranks next to the pine-apple, and is by some preferred to it. The leaves form an excellent garnish to other table-fruits. Wine is sometimes made in England by expressing and fermenting the juice, either alone or with that of other fruits; and it has even been made from a decoction of the leaves, as well as from a decoction of the young shoots. In warmer climates it is not only used in the dessert, but eaten with bread, either newly gathered or dried as raisins; and in these countries from the fermented juice a wine is made superior to all others for stimulating the stomach and exhilarating the spirits. The medical products of the vine are verjuice, used as the juice of lemons; tartar, a gentle cathartic; vinegar, used as a condiment; for extracting the virtues of other medicines; for counteracting the effects of vegetable poisons. Even wine itself is given as a medicine in typhus fevers, in nervous disorders, in putrid sore-throat, and even in the plague. Martyn says wine is the most grateful and efficacious cordial that can be furnished from the whole class of aromatics.

The varieties of the vine are exceedingly numerous, partly from its antiquity, it having, as Professor Martyn remarks, been cultivated since the time of Noah, and partly from the influence of the soils and climates in changing the qualities of grapes, there being hardly two vineyards in France or Italy where the sorts, though originally the same, remain long precisely alike, but chiefly, as far as respects this country, from the facility with which new sorts are produced from seed. Parkinson, in 1627, enumerates 23 varieties. Ray, in 1688, enumerates 12 sorts as then much in request. Rea, in 1702, adds 5 sorts to Ray's list. Switzer, in 1717, says, "It is to Lord Capel and Sir William Temple that we are owing that collection of good grapes now so plenty in England; the latter," he says, "brought over the *Chasselas*, *Parsley* and *Frontignac;* and also the *Amboyna*, *Burgundy*, *Black Muscat*, and *Grisly Frontignac;* all highly approved varieties. The most valuable additions to the varieties have been procured by sowing the seeds of sorts ripened in this country. Many varieties have been sent from Spain, France, and Italy, so that the list of some British nurserymen exceed 250 names. No successful attempt has been made to class the numerous varieties of the vine either in France or England, as Duhamel did those of other fruits. M. Bosc was employed to compare and class those collected at the Luxemburg, but in 1809 he had only succeeded in figuring and describing 50 distinct sorts. In the catalogue published of the Luxemburg collection by Hervey in 1802, the arrangement is, 1st, vines with black oval fruits 37 sorts; 2nd, black round fruits 98 sorts; 3rd, white oval fruits 44 sorts; 4th, white round fruits 73 sorts; 5th, grey or violet oval fruits 5 sorts; and 6th, grey or violet round fruits 10 sorts, making 267 in all.

A list of British grapes cultivated in nurseries, arranged according to the colour and shape of their berries.

* *Grapes with round black berries.*

1 *Early Black* or *July Grape. Morillon noir hatif*, or *Raisin de la Madaleine* (Fr.). An old variety from France, principally esteemed for being early ripe, berries small.—Lang. P. t. 47. f. 3.

2 *Black Muscadine* or *Black Frankindale. Muscat noir* (Fr.). An approved variety, common on dwelling-houses about London. It is a good bearer; the leaves change to a fine scarlet and yellow colour in autumn.—Lang. p. t. 36. Excellent for a vinery.

3 *Black Grape from Tripoli.* This is a free growing kind. The berries are nearly all of a size, and are slightly undulated, some are without seeds, but when they are present small, compared to any other kind; they do not possess that fine, rich bloom that the Black Damascus does. It is, however, a month earlier, and is an excellent, tender, rich grape.

4 *Black Damascus* or *Worksop Manor Grape.* A large, excellent, late grape, full of rich, vinous juice, but is not a good bearer. Imported from Damascus by Edward the ninth duke of Norfolk.

5 *Black Lisbon, Black Spanish* or *Alicant, Black Portugal, Black Valentia* or *Black Prince.* A large, juicy berried variety, received from Portugal.

6 *Black* or *Purple Frontignac*, or *Purple Constantia. Muscat noir de Frontignac* (Fr.). A large, mealy, rich, and vinous-berried variety, which is much esteemed. It must be kept a long time before it becomes black, and then its rich flavour is gone. Lang. p. t. 38. Excellent for a vinery.

7 *Blue* or *Violet Frontignac. Noir Précoce* (Fr.). This is the true old Frontignac. No grape will stand early forcing better. The bunches are small, and separate easily.

8 *Black Sweet-water.* A small-berried variety, apt to crack, and not much in repute on that account. It is an improper kind for a Pine stove. Lang. p. t. 51.

9 *Black Morocco. Le cœur raisin d'Afrique, Raisin de Maroc* (Fr.). Berries tawny-coloured, of a high musky flavour. It is not worth growing unless in large collections. The bunches are short and stinted.

10 *Claret. Clarette rose* (Fr.). Wine from white berries may be coloured with the leaves of this sort. The berries are small and black, and the juice of a blood-colour and harsh tasted. The leaves are beautifully veined in autumn. Lang. p. t. 47.

11 *Black Prince.* The bunch and berries are large. It well deserves a place in a vinery, and ripens well on the open wall.—Hook. p. 45.

12 *Turner's Hardy, Black Esper*, and *Hardy Blue.* A very prolific, hardy grape. Aiton considers it one of the best we have for a wall.—Hort. trans. 3. 93.

13 *Black Corinth, Zante, Ascalon Currant.* Berries small and sweet, generally without seeds, and is the sort which produces the dried corinths or currants of the shops. From Ascalon in Palestine.—Lang. p. 46.

* * *Grapes with long black berries.*

14 *Black Muscadel.* An old variety from France. The berries are large, and have a pleasant taste. It is a shewy, good grape, and forms a handsome contrast, grafted on the white muscat of Alexandria, their habits of growth being in unison.

15 *Black Hamburg* or *Warner's Grape.* An old variety. The berries are large, pleasant, and vinous. It is one of the best grapes we have, and a plentiful bearer. Excellent for a vinery.

16 *Purple Hamburgh. Muscat violet* (Fr.). The berries are large, pleasant, and vinous, of a very dark colour. It is a good bearer.

17 *Small Black Cluster, Auvernat*, or *Black Burgundy.* An old variety, originally from Burgundy, with hoary leaves. It is a good wall fruit. The berries are small and pleasant.—Lang. p. t. 41.

18 *Miller's Burgundy, Miller's Cluster, Meunier Grape*, or *Miller's Grape.* This variety was originated from seed by Miller about 1720. It is a hardy grape, and was used for making wine at Painshill vineyard in 1750. The berries are middle-sized and pleasant.

19 *Large Black Cluster.* This variety was sent to Speechly from Portugal in 1740. The berries are middle-sized, rough, and harsh.—Lang. p. t. 42.

20 *Black Raisin. Augibert noir* (Fr.). This variety came from Languedoc. The berries are large and thick skinned. The same as the black Muscadel. Excellent for a late crop in a vinery.

21 *Black* or *West's St. Peter's*, or *Black Lombardy, Black Palestine.* The berries are large and juicy. It is an approved late grape. Excellent for a late crop in a vinery, only requiring more heat than other varieties.

22 *Black Cornichon. Cornichon noir, Dedos de Damas* (Fr.). *Pitzotella* (Port.). A curious finger-shaped fruit. It is a worthless grape.

23 *Damson Grape.* The succulent character of the leaves of this variety is very remarkable. This grape, even when well ripened, has an austere medlar-like flavour, which to some palates may be agreeable.

* * * *Grapes with round, white, or green berries.*

24 *Royal Muscadine*, or *White Portugal, Amber Muscadine, Chasselas blanc, D'Arboyce* (Fr.). This variety is said to have been introduced by Sir W. Temple in 1660. The bunch is large, the berries are middle-sized, rich, and vinous. It is one of the best hardy grapes, and an excellent bearer, but is not so good in flavour as the white Muscadine.

25 *Malmsey Muscadine* or *Parsley-leaved. Malvoisie musqué Ciotat, Raisin d'Austriche* (Fr.). *Vìtis laciniòsa*, species no. 2. p. 709. It is an old variety from France. The clusters are large, the berries middle-sized, rich, and musky. It is a good bearer, with fine leaves and fine fruit. Hort. trans. 4. t. 1.

26 *Common White Muscadine*, or *Chasselas*, or *Early White Teneriffe Grape, Amber Muscadine, Chasselas musquée* (Fr.). This variety was introduced by Sir W. Temple in 1660. Both bunch and berries are middle-sized and sugary. It is the best grape we have for a wall, and a great bearer. Not good for early forcing.—Lang. p. t. 35.

27 *White Frontignac* or *White Constantia. Muscat blanc* (Fr.). The bunch is large, with exquisite berries. It is a much esteemed hot-house and vinery grape.—Lang. p. t. 37.

28 *White Sweet-water* or *Pearl-drop. Pareyl druyf* (Dutch). This is a favourite Dutch grape. The clusters are middle-sized, and the berries are large and sugary. Esteemed an excellent grape.—Lang. p. t. 50. The kind called *Stillward's Sweet-water* is better than the old Dutch kind, as the bunches and berries are both larger. It is an improper kind for a pine stove, as its berries crack in a high humid atmosphere.

29 *White Corinth, White Ascalon, Yellow Stoneless*, or *Sultana raisin. Corinthe blanc* (Fr.). This variety is from Ascalon in Palestine. The berries are small, often without seeds, with a fine flesh, and an agreeable flavour. It is subject to decomposition immediately after maturity.—Duh. monc. fr. p. 273. t. 7.

30 *Pitmaston new white cluster.* Raised by Williams of Pitmaston from seeds of the black cluster. The bunches are crowded, and berries middle-sized. It is very hardy, and a great bearer.—Hort. trans. 3. p. 249. t. 8.

31 *Pitmaston Mignon white cluster.* Originated at Pitmaston, described in Hort. trans. The bunch is close, the berries small, juicy, and sweet. It is very hardy, and a great bearer.

32 *Scotch white cluster.* This variety was raised from seed by a blacksmith at Edinburgh about 1812. The bunch is middle-sized and close, the berries are small, juicy, and sweet. It is a very hardy kind, and a great bearer.

33 *Scarlet-leaved black cluster.* Originated from seed by Williams of Pitmaston in 1816. The bunch is small, as well as the berries, which are sugary. A hardy grape, remarkable for the beauty of its leaves in autumn.

34 *Kismush Grape.* Bunches small and well shouldered; berries small, sweet, and juicy, of a pleasant flavour, free from seeds.—Hort. trans. 4. t. 4.

* * * * *Grapes with long, white, or green berries.*

35 *White Muscat of Alexandria, Alexandria Frontignac, Muscat d'Alexandrie* or *Passe longue musquée* (Fr.), sometimes called *White Tokay* in the northern counties. Bunch large, as well as berries, which are vinous, musky, and rich. It is one of the richest grapes we have, and particularly well adapted for vineries.—Duh. monc. fr. p. 270. t. 5.

36 *Tottenham Park Muscat Grape.* (Hort. trans. vol. 6. p. 123). This variety was obtained from seeds of the Muscat of Alexandria by Mr. Henry Burn, for which he received the silver medal of the Horticultural Society. It is a free grower, abundant bearer, and its produce both in size of bunch and berry is equal to the old Muscat, but of superior flavour.

37 *White Muscat of Lunel.* Bunch middle-sized. Berries large, rich, and vinous, a good bearer, and highly esteemed grape.

38 *White Morillon* or *Genuine Tokay.* The berries are large and juicy. A good grape; the bunches are much larger than that of blue Tokay. It is an abundant bearer, and of very rich flavour; it has a thin, delicate skin, which renders it a bad packing grape, which is the only fault it has. Leaves downy underneath.

39 *Golden Galician.* Berries large, and of tolerable flavour.

40 *White Raisin*, or *White Hamburgh* or *Portugal.* The berries are large, with a thick skin and firm flesh.—Lang. p. t. 43.

41 *White Syrian.* Bunch very large. Berries very large, with a thick skin and firm flesh. It is a good bearer, and the largest of all both for bunches and berries. For a late grape no moderate collection should be without it.

42 *White Cornichon. Cornichon blanc, Doigt de Donzelle, Zeta de Voca* (Fr.). A curious pudding-shaped like berry, but not otherwise remarkable.—Duh. monc. fr. p. 271. t. 6.

43 *Verdelho.* Bunch small. Berries small, with a rich saccharine flavour. A hardy fruit, and fit for a common wall, but the stones eaten with the fruit prove deleterious. This is the kind from which Madeira wine is made.—Hort. trans. 1. p. 260.

44 *Amiens* or *Leon Native.* A very hardy grape, and ripens at Amiens in July.

45 *Greek Grape.* This is a good grape, but it does not keep many days after maturity. It is called in Durham and Northumberland *Green chee.*

46 *Cat's Grape.* A more worthless grape cannot be imagined.

47 *White Grape from Alcobaca.* It is much like the white Lombardy.

* * * * * *Grapes with red, rose-coloured, blue, greyish, or striped berries.*

48 *Red Muscat of Alexandria. Muscat rouge* (Fr.). This resembles the white Muscat except in colour. Bunch large and long. Berries rich, musky, and vinous. A rich hot-house grape like the white Muscat of Alexandria. Excellent for a vinery.—Duh. monc. fr. p. 268. t. 4.

49 *Red Muscadel.* Bunch large. Berries large, with a pleasant juice. It is a shewy, good fruit, but does not keep well. The flavour is rather better than that of red Syracuse.

50 *Red Frontignac. Muscat rouge de Frontignac* (Fr.). Bunch middle-sized. Berries large, oval, and brick-coloured. It is an excellent keeping fruit, but not so good as the following kind. Excellent for a vinery.

51 *Grizzly Frontignac. Muscat gris* (Fr.). Bunch small. Berries round, brownish, red, and yellow-coloured, with an excellent flavour, and keeps well. Excellent for a vinery.

52 *Red Hamburgh*, or *Hampton Court Vine*, or *Gibraltar.* Originated by Warner of Rotherhithe about 1730. Bunch large.

Berries large, globose, thin-skinned, rich, and vinous. Reckoned the best of the Hamburgh grapes.

53 *Giles's Seedling Hamburgh.* A new variety raised from Warner's Hamburgh. The leaves are elegant, both as to form and colour.

54 *Red Parsley-leaved Muscadine. Ciotat rouge* (Fr.). Berries middle-sized, red.

55 *Aleppo, Striped Aleppo,* or *Party-coloured Grape.* Berries middle-sized, with juicy flesh, of a very fine flavour. It is a curious grape, the berries frequently striped with black and white. The berries are liable to decomposition soon after maturity.

56 *Red Syracuse.* Bunch large. Berries large and oval, with a thick skin. A coarse fruit as to flavour, but very shewy and durable. It is a very vigorous kind.

57 *Blue Tokay. Malvoisie* (Fr.). Berries small and vinous, powdered with a blue bloom; the bunches about the size of those of the black cluster. It is not good if kept after maturity. It is a free bearer.

58 *Red Smyrna.* A very good grape, with a fine flavour.

59 *Brick Grape, Lombardy, Flesh-coloured Tokay,* or *Red Rhenish.* Berries small, sweet, of a brick-colour, but very inferior in flavour to the other Tokay kinds. The brick grape is probably a distinct variety. Lang. p. t. 39.

60 *Red Chasselas* or *Red Muscadine coral. Chasselas rouge* (Fr.). Berries red, small, and round.

61 *New Muscat of Jerusalem.* Originated by Miller about 1738. Bunch large. Berries very large, highly musky, vinous, and rich. Forsyth has seen the berries of this as large as a gooseberry.

62 *Variegated Chasselas.* This variety was originated from the Aleppo and Muscadine by Knight about 1811. Beautifully variegated berries and leaves.—Hort. trans. 1. p. 258. t. 15.

63 *Chasselas Panaché* or *Striped Muscadine. Chasselas doré's* or *Bar sur Aube blanc* (Fr.). This is a French ornamental grape, variegated both in the leaves and fruit.

64 *Elford's Seedling.* Is a tolerable grape.

The most elaborate descriptions of the varieties of the vine which have yet appeared are contained in a Spanish work by Don de Roxas Clemente, Librarian to the botanical garden of Madrid, which we shall give an outline of, more that it may assist some individual in the classification of English grapes, than for the description of the varieties he gives.

Spanish varieties of the vine grape, extracted from Ensayo sobre las variedades de la vid comun que vegetan en Andalucia, con un Indice etimologico y tres listas de plantas en que se caracterizan varias especias nuevas, by Don de Roxas Clemente y Rubio, Librarian to the royal botanic garden of Madrid. *8vo. Madrid.* 1807.

Sect. 1. *Leaves tomentose.*

Tribe 1. *Forénses. Listanes* (Span.). *Branches prostrate, long, and tender. Leaves palmate, with the recesses cordate or subcordate. Berries round, firm, sweet, and early.*

1 *ubérrima;* branches smooth; recesses of leaves cordate; racemes numerous; berries crowded, white, with a thin skin. Listan, comun. p. 131. f. 5.—2 *hyacínthina;* berries of a hyacinth-red. Listan Morado, p. 136.—3 *Antiliàna;* branches tomentose at the base; racemes very few; berries crowded, yellowish. Listan Landrenado, p. 136.—4 *Ligèri;* recesses of leaves subcordate; peduncles slender; berries much crowded, middle-sized, white. Colgadera, p. 137.—5 *Fuenteduénnæ;* recesses of leaves subcordate; peduncles hard; berries very much crowded, middle-sized, white, with thickish skin. De Fuenteduenna, p. 138.—6 *Capàni;* berries very black. Tempranillo, p. 138.

Tribe 2. *Fissiles. Polominos* (Span.). *Branches prostrate, long, and tender. Leaves palmate, with cordate recesses. Berries black, soft, and sweetish.*

7 *fissiles;* berries rather pellucid. Polomino, comun. p. 140.—8 *Venatòrum;* berries very pellucid. Polomino bravio, p. 140.

Tribe 3. *Pénsiles. Mantuos* (Span.). *Branches firm, white, with long internodes. Leaves lobed or palmate. Berries firm and sapid.*

9 *fállax;* leaves yellowish; berries roundish, of a deep green. Mantuo Castellano, p. 141.—10 *sylvática;* branches slender; leaves deep-green, lower ones very large; berries green, late. Mantuo bravio, p. 143.—11 *rubélla;* berries red. Mantuo morado, p. 143.—12 *pénsilis;* leaves greenish-yellow; berries large, very round, and very late. Mantuo de Pillas, p. 144.—13 *confertíssima;* leaves very downy, yellowish-green; berries crowded, yellowish, late, with conspicuous veins. Mantuo Laeren, p. 145.—14 *pellùcida;* leaves yellowish-green; berries large, yellow, pellucid, with very conspicuous veins. Cordovi, p. 145.—15 *Merlèti;* leaves yellowish-green; berries round, green, late, never abortive. Fray Cusano de Miraflores, p. 146.—16 *issophýlla;* leaves deep-green; racemes cylindrical; berries much crowded, round, and yellow. Torrontes, p. 146.

Tribe 4. *Durácinæ. Jaenes* (Span.). *Branches rather erect, brittle. Peduncles woody. Berries crowded, firm, with very thick skin.*

17 *Stephàni;* berries blackish. Jaen negro de Sevilla, p. 147.—18 *Crescéncii;* berries very black. Jaen negro de Grenada, p. 148.—19 *Varrònis;* berries white. Jaen blanco, p. 149.

Tribe 5. *Helvòlæ, Mollares* (Span.). *Branches tender. Leaves large, roundish, nearly entire, or a little toothed, soft. Berries large, round, very soft, and sapid.*

20 *móllis;* berries black, sapid. Mollar negro, p. 151.—21 *versícolor;* berries party-coloured. Mollar cano, p. 153.—22 *Duhamèli;* berries black, rather acid. Mollar negro bravio, p. 153.

Tribe 6. *Dápsiles. Albillos* (Span.). *Branches prostrate, long, tender. Leaves small, dark-green. Racemes rather cylindrical. Berries crowded, soft.*

23 *racemosíssima;* peduncles woody; berries much crowded, obovate, green, and very juicy. Albillo castellano, p. 154.—24 *succòsa;* berries black. Albillo negro, p. 155.—25 *Lalénnæ;* peduncles tender; berries crowded, green. De Lalenna, p. 556.—26 *Beguillèti;* racemes small; berries much crowded, green, and juicy. De Beguillet, p. 156.—27 *Héppe;* leaves tomentose; racemes middle-sized; berries much crowded, roundish, pale greenish-yellow, with conspicuous veins. Albillo pardo, p. 157.—28 *Herrèræ;* racemes large; berries much crowded, roundish, pale greenish-yellow. Albillo de Huelba, p. 157.

† *Singular varieties of the same tribe.*

29 *válida;* branches firm; leaves large, tomentose; berries round, much crowded, green, soft. Albillo loco, p. 158.—30 *Lienwebèri;* branches brittle; leaves middle-sized, tomentose; berries crowded, middle-sized, rather oblong, white, and soft. Albillo de Granada, p. 159.—31 *acérba;* branches firm; leaves large, tomentose; berries much crowded, roundish, green, and acid. Verdaguilla, p. 160.—32 *Millèri;* branches firm; leaves deep-green; berries oblong, green, soft, austere. Verdal,

p. 161.—33 *impàtiens;* branches erectish; leaves large, green; berries much crowded, obovate, green, very juicy, with conspicuous veins. Abejera, p. 162.—34 *lacrymòsa;* leaves palmate, greenish-yellow; racemes small; berries much crowded, rather oblong, green, and very juicy. Lorona, p. 163.—35 *anómala;* tendrils opposite. Gallega, p. 163.—36 *mollíssima;* branches spotted with black at the base; leaves nearly entire, when the fruit is mature they change to a red; berries black, middle-sized, very juicy, and very crowded. Mollor de Cadiz, p. 164.—37 *dulcíssima;* branches erect; leaves middle-sized, greenish-yellow; berries middle-sized, very round, white, and juicy. Malvasia, p. 165.—38 *Ximenezioìdes;* branches brittle; leaves palmate, greenish-yellow; berries few, middle-sized, rather oblong, white, soft, and very sweet. Ximenez Zumbon, p. 166.—39 *Liebáulti;* branches erect, reddish-brown, brittle; berries small, round, black. Tintilla, p. 167.—40 *maculàta;* branches brittle; leaves palmate; berries middle-sized, round, black, and very soft. Tinto, p. 169.—41 *Bretonnèria;* branches brittle; leaves middle-sized, palmate; berries middle-sized, round, black, rather soft, of an austere-sweetish taste, and with a thick skin. Romé, p. 170.—42 *diversifòlia;* branches tender; leaves palmate, and nearly entire; racemes small; berries much crowded, small, round, black. Garabatona, p. 171.—43 *Valcarcèlia;* branches short, tender; leaves middle-sized, palmate; berries few, small, round, black, soft, very sweet, and late. Morrastell, p. 172.—44 *Virgiliàna;* leaves greenish-yellow; racemes small; berries obovate, black, and very soft. Virgiliana, p. 173.—45 *bullàta;* branches tender; leaves large, blistered; berries crowded, large, roundish, white. Beva, p. 174.—46 *Galàna;* leaves large; berries rather crowded, middle-sized, roundish, white, and firm. Galana, p. 175.—47 *Dussieux;* branches tender; berries middle-sized, white, firm, very sapid, with a thin skin. Montuo Castellano, p. 175.—48 *pícta;* branches tender; leaves large; berries crowded, middle-sized, obovate, hard, and very fleshy. Pecho de Perdiz, p. 176.—49 *bipartìta;* branches tender; leaves middle-sized, greenish-yellow; berries few, middle-sized, rather oblong, white, rather firm, very sapid, and late, with a thin skin. Zurumi, p. 177.—50 *Columéllæ;* branches long, tender; leaves obscurely green; racemes large; berries rather crowded, large, roundish, white, and firm. De Columela, p. 178.—51 *prolífera;* branches thick; leaves acutely-sinuated, toothed; racemes small; berries crowded, round, white, and soft. Sepa canasta, p. 179.—52 *Colònia;* berries few, large, roundish, white, soft, subacid, early. Colona, p. 179.—53 *rotundifòlia;* leaves somewhat orbicular, nearly entire, soft, greenish-yellow; racemes small; berries obovate, very soft. Fray Cusana de Mayna, p. 180.—54 *subcompréssa;* branches tender, compressed at the base; leaves large, cordately-sinuated, greenish-yellow; racemes small; berries very round, white, soft, and very sweet. Cienfuentes, p. 181.—55 *aurántia;* branches very brittle; berries middle-sized, much crowded, rather obovate, firm, austere, yellow. Doradilla, p. 181.—56 *canìna;* branches brittle; leaves middle-sized, greenish-yellow; berries much crowded, middle-sized, round, yellow, firm, and austere. Montuo Perruno, p. 183.—57 *paupérrima;* branches brittle, spotted at the base, with short internodes; leaves small, acuminately-toothed, yellow; berries, few, middle-sized, round, white, firm, fleshy, and sweet. Listan de Paxarete, p. 184.—58 *frágilis;* branches erect, shining, firm; leaves acutely-sinuated, greenish-yellow; racemes long; peduncles very brittle; berries very few, unequal, round, yellow, fleshy, austere, late. Heben, p. 184.—59 *macrophýlla;* leaves large, with the tomentum deciduous; berries few, fleshy, yellow, austere. Rabo de Baca, p. 185.—60 *ignóbilis;* branches tender; leaves large, tomentose or pilose; berries round, dirty-yellow, firm, austere. Rebazo, p. 186.

Sect. 2. *Leaves pilose or nearly smooth.*

Tribe 7. *Ximenèciæ. Ximenecias* (Span.). *Branches erect and horizontal. Leaves acutely-sinuated, greenish-yellow, rather pilose. Berries rather crowded, middle-sized, white.*

61 *Forsỳthii;* branches horizontal. Ximenez loco, p. 183.—62 *Ximenecia;* branches erect. Ximenez, p. 188.

Tribe 8. *Flavéntes. Perrunos* (Span.). *Branches firm and brittle. Leaves yellowish. Berries crowded, middle-sized, roundish.*

63 *flàva:* branches very brittle; peduncles brittle; berries firm, yellow. Perruno comun. p. 192.—64 *Rozièri;* branches very brittle; peduncles brittle; berries firm, black. Perruno negro, p. 193.—65 *Quintìnea;* branches brittle; peduncles firm; berries black, rather firm. Quintinea, p. 194.—66 *Bernàla;* branches brittle; berries black, soft. Bernala, p. 194.—67 *firmissima;* branches firm; leaves very hairy; berries white, firm. Perruno duro, p. 195. f. 3.

Tribe 9. *Prostràtæ. Vigiriegos* (Span.). *Branches prostrate, very tender. Leaves yellowish. Berries large, soft.*

68 *prostràta;* berries roundish, greenish-white. Vigiriega comun, p. 196.—69 *Catònis;* berries black. Vigiriega negra, p. 197.—70 *Bidèti;* berries oblong, greenish-white. De Bidet, p. 197.

Tribe 10. *Oxicárpæ. Agraceras* (Span.). *Leaves deep-green. Berries middle-sized, round, and large oblong, rather acid.*

71 *álbicans;* branches white, firm; racemes middle-sized; berries middle-sized, black, late. Blanquecina, p. 198.—72 *Sòti;* branches white, firm; racemes oblongish, large; berries middle-sized, black, late. De Soto, p. 198.—73 *vittàta;* berries black or greyish-black. Melonera, p. 199.—74 *florentìna;* peduncles very tender; berries large, black. Agracera, p. 200.—75 *Langlèya;* peduncles black, very flexile; berries large, black. Langleya, p. 201.

Tribe 11. *Pergulànæ. Ferrares* (Span.). *Branches prostrate. Leaves greenish-yellow. Berries rather crowded, round, firm, and sapid.*

76 *autumnàlis;* branches tender; berries large, blackish. Ferrar comun. p. 202.—77 *speciòsa;* branches tender; berries large, white. Ferrar blanco, p. 202.—78 *Jonèsia;* branches firm; berries large, blackish. Jetubi loco. p. 203.—79 *exquisìta;* berries middle-sized, obtuse, black. Colona negra, p. 204.—80 *saccharàta;* berries middle-sized, umbilicate, black. Zucari, p. 204.—81 *mellìta;* berries large, yellow. Melcecha, p. 206.

Tribe 12. *Bumásti. Tetas de vaca* (Span.). *Berries large, ovately-conical.*

82 *sulcàta;* berries umbilicate, rather furrowed, red. Leonada, p. 207. f. 10, 11. 22.—83 *exsúcca;* leaves rather pilose; berries black. Corazon de Cabrito, p. 209.—84 *Martinècii;* berries rather yellow. Martinecia, p. 210.—85 *longíssima;* berries tapering to both ends, white. Santa Paula de Granada, p. 211.—86 *macrobótrys;* leaves pilose, rather tomentose; berries black. Caco de Tinaja, p. 213.

Tribe 13. *Oleagíneæ. Cabrieles* (Span.). *Leaves deep-green. Berries middle-sized and large, oblong, firm, austere, or very sapid.*

87 *rùbra;* branches whitish, striped longitudinally with red, tender; berries black, middle-sized, and large. Cabriel, p. 214.—

88 *Pliniàna;* branches whitish, firm; berries middle-sized, black. Jetubi bueno, p. 216.—89 *prædùra;* berries large, green. Ataubi, p. 216.—90 *prægrándis;* peduncles red; berries large, red. Santa Paula de Xerez, p. 218.—91 *Garidèli;* peduncles green; berries large, black. Moravita, p. 218.—92 *ovàta;* berries middle-sized, red. Arrobal, p. 219.

Tribe 15. *Dactylìdes. Datileras* (Span.). *Branches prostrate. Berries oblong, firm, and sweet.*

93 *Dáctylus;* berries red. De Ragol, p. 220.—94 *ténera;* leaves obscurely-green; berries middle-sized, black. Teta de vaca negra, p. 220.—95 *teretiúscula;* berries large, black. Teta de negra, p. 221.—96 *grácilis;* branches very short; racemes short; berries few, white. Teta de vaca blanco, p. 221.—97 *exímia;* branches long; racemes large; berries crowded, white. De Loxa, p. 222. f. 2.—98 *lónga;* racemes slender; berries very few, oblong, slender, white. Almunnecar, p. 223.—99 *orchídea;* branches long; racemes small; berries crowded, yellow, very sweet. Boton de Gallo, p. 225.—100 *jucúnda;* leaves greenish-yellow; berries black, very sweet. Boton de Gallo negra, p. 225.

Tribe 15. *Apiàna. Moscatelles* (Span.). *Berries musky.*

101 *generòsa;* berries round, yellow. Muscatel melnudo blanco, p. 226.—102 *moschàta;* berries round, red. Muscatel melnudo morado, p. 227.—103 *obovàta;* berries obovate, violet. Moscate gordo Morado, p. 228. f. 1.—104 *Isodòri;* berries obovate, rather yellow. Moscatelon, p. 229.

† *Singular varieties of the same tribe.*

105 *Boutelòui;* berries large, subobovate, yellowish, rather sweet. De Boutelou, p. 230.—106 *Sáchsi;* branches prostrate, brittle; leaves greenish-yellow; berries middle-sized, round, greenish-white, sweet. Vigiriego de Motril, p. 231.—107 *vìvax;* branches erect; leaves yellowish-green; berries middle-sized, very round, dark-violet, sapid. Jami, p. 231.—108 *Teràna;* branches rather firm; leaves small, yellowish-green; berries very crowded, middle-sized, very round, firm, and yellow. Terana, p. 233.—109 *sphærocárpa;* branches rather firm; leaves green, hardly pilose; berries large, very round, white, and sapid. Alban real, p. 234.—110 *pseudoapiàna;* leaves greenish-yellow, hardly pilose; berries large, very round, green. Muscatel de Flandes, p. 235.—111 *Elisabeth;* branches firm; leaves rather pilose; berries large, round, white, soft, insipid. Santa Isabel, p. 236.—112 *Vaòa;* berries few, minute, oblong-ovate, blackish, firm, and acid. Vaoa, p. 236.—113 *Ruízia;* leaves palmate; berries few, middle-sized, roundish, black, and fleshy. Ruizia, p. 237.—114 *Zèæ;* branches very brittle; leaves yellowish-green; berries middle-sized, party-coloured, soft, and sapid. Molar de Granada, p. 237.—115 *hirsùta;* branches rather erect, brittle; leaves very hairy, yellowish; berries very round, yellow, soft. Cannocazo, p. 238.—116 *regàlis;* leaves yellowish-green; berries few, large, cylindrically subovate, white, rather firm. Uva de Rey, p. 239.—117 *Pallàdii;* branches prostrate; leaves yellowish; berries much crowded, middle-sized, rather oblong, yellowish, firm, and rather acid. Ciuti, p. 240.—118 *Búcci;* leaves yellowish; berries crowded, middle-sized, subcylindrical, yellowish, firm, and subacid. Casta de Oñanez, p. 242.—119 *Nievàsea;* berries few, large, oblong, red, subacid, sapid. Nievasea, p. 243.

Descriptive List of the varieties of Vìtis Vinífera or Grapevine, cultivated in the regions on the Rhine, by Professor Dierbach in Heidelberg, extracted from Schlecht. Linnæa. vol. 3. p. 142 to 152.

§ 1. *Humilìores. Stem shrubby, usually dwarf, with the nodes of the branches approximate. Berries usually small and dense.*

* *Sphærocárpæ. Berries globose.*

α *Nóbiles. Grapes from which a generous wine is obtained.*

1 *pusílla;* leaves 3-5-lobed, villous beneath; bunches small, dense; berries small, pellucid, with a thin, yellowish-green skin which is dotted, and operculated, and with a juicy aromatic sweet flesh. There are varieties of this with green, cream-coloured, red, and black berries. Riesling, p. 144.—2 *peregrìna;* leaves 3-5-lobed, pubescent beneath; bunches middle-sized, pyramidal, and rather dense; berries greenish-yellow, covered with a greyish bloom with a thin skin, and aromatic sweet flesh. Walsch-Riesling, p. 145.—3 *xanthocárpa;* leaves 3-lobed, villous beneath; bunches small, dense; berries yellowish, pellucid, covered with white, pruinose dots, with a thin skin and a sweet juicy flesh. There is a variety of this with greenish fruit. Gelber-Riesling, Ortlieber, Knakkerle, p. 145.—4 *nàna;* leaves 5-lobed, covered with white pubescence beneath; bunches rather dense, branched; berries green, covered with pruinose dots, with a thick skin and sweet flesh. Kleiner Gutedel, p. 145.—5 *Campàna;* leaves slightly 3-lobed, flat, pubescent beneath; bunches small, dense; berries whitish-green, with a thin dotted skin, and sweet juicy pulp. This is the grape from which champaigne is made. Champagner, Kleiner-Heinsch, p. 145.—6 *Burgundìaca;* leaves 3-5-lobed, villous beneath; bunches small, dense; berries greenish-yellow, dotted, with a thin skin, covered with a grey bloom, and with juicy, aromatic, sweet pulp. Weisser Burgunder, p. 145.—7 *nicarìna;* leaves 5-lobed, scabrous beneath; bunches middle-sized, dense, oblong; berries greenish-yellow, covered with a white bloom; the skin is thin and dotted, and the pulp is green, juicy, and sweet. Futterling, p. 145.—8 *péndula;* leaves 3-lobed or entire, pubescent beneath; bunches on long peduncles, dense; berries unequal-sized, green, with a thick skin, covered with a white bloom, and with succulent sweet flesh. There is a variety of this with black berries. Hangling, p. 145.

β *Plebèiæ. Grapes which produce bad and cheap wines.*

9 *crépitans;* leaves 3-5-lobed, covered with white villi beneath; bunches loose, branched, oblong; berries on long pedicels, white, dotted, covered with a grey bloom; skin thin and pulp pellucid, watery, and sweet. Weisser Rauschling, p. 146.—10 *xanthóxylon;* leaves 3-5-lobed, villous beneath; bunches dense; berries on short pedicels, dotted, covered with a grey bloom; skin rather thick, and pulp red and sweet. Schwarzer Rauschling, Gelbholzer, p. 146.—11 *pulverulénta;* leaves slightly 3-lobed, blistered, clothed beneath with white villi; bunches dense, oblong, middle-sized, nearly simple; berries blue, covered with a grey bloom; the skin is thin and the pulp is red. Blaue Mullertraube, p. 146.—12 *Austrìaca;* leaves 3-lobed or nearly entire, hairy beneath; bunches crowded; berries green, dotted, covered with a grey bloom; skin thin; pulp watery, usually containing only 1 seed. Oesterreicher sylvaner, p. 146. There are varieties of this with red and black berries.—13 *acérba;* leaves 5-lobed, smooth; bunches ovate, middle-sized, dense, simple; berries without dots, greyish-red, with a thin skin, and red, juicy, acid, astringent pulp. Schlehentraube, p. 146.—14 *tinctòria;* leaves 5-lobed, hairy beneath; bunches crowded; berries blue, with a thick skin and firm, acid, purple pulp, which stains the hands. Farbertraube, p. 146.

* * *Dactylìdes. Berries more or less oblong.*

α Nóbiles. Grapes from which good wines are obtained.

15 *Clavennénsis;* leaves on long petioles, slightly 3-lobed, with red teeth, pilose beneath; bunches small, dense; berries red, covered with brownish bloom; skin rather thick, and the pulp juicy, aromatic, and sweet. There is a variety of this with black berries and red pulp. Clavner, Rulander, Burgunder, p. 147.—16 *Tyrolénsis;* leaves on short petioles, slightly 3-lobed; bunches small, broad, branched, dense; berries pruinose, red, with a thin skin, and juicy, aromatic, sweet pulp. Traminer, p. 147.

β Plebèiæ. Grapes from which cheap wines are obtained.

17 *præ̀cox;* leaves on long petioles, 3-lobed, or entire, rather pubescent beneath; bunches small, crowded; berries blue, covered with a grey frosted bloom; skin thick; pulp firm and acid. Jacobstraube, p. 146.—18 *Omphacìna;* leaves 5-lobed, smooth; bunches elongated, flaccid; berries cream-coloured, dotted, covered with a white bloom, with a thick skin, and firm acid pulp. Sauertraube, Verjus, p. 147.

γ Apyrènæ. Berries without seeds.

19 *Corinthìaca;* leaves slightly 3-lobed, villous beneath; bunches middle-sized, rather flaccid; berries cream-coloured, covered with white bloom; skin thin, pulp succulent and sweet. Rosinentraube, Corinthe, p. 147.

§ 2. *Elatiòres. Trunk shrubby, tall and climbing, or arboreous and erect, with the internodes of the branches elongated. Bunches usually large, and flaccid.*

1 *Fruticòsæ. Stems tall.*

* *Sphærocárpæ. Berries globose.*

α Nóbiles. Grapes from which excellent wines are obtained.

20 *Aminea;* leaves 5-lobed, smooth, or pubescent beneath; bunches large, flaccid; berries greenish-yellow, dotted with brown, and covered with white bloom; skin thin; pulp pellucid, juicy, sweet, and very savoury. There are varieties of this with smaller white and red berries. Gruner oder weisser Gutedel, p. 148.—21 *æstivàlis;* leaves 5-lobed, pubescent on the nerves beneath; bunches early, large, flaccid; branches thin; berries large, dotted, whitish-green, covered with grey bloom; skin thin; pulp juicy and savoury. Fruher Gutedel, Perltraube, p. 148.—22 *rùbra;* leaves 5-lobed, coloured; bunches large, flaccid; berries purple, covered with a grey bloom; skin thin, pulp red and savoury. Rother Gutedel, Konigs-gutedel, p. 148.—23 *durácina;* leaves 5-lobed, smoothish; bunches large, flaccid; berries greenish-yellow, dotted with brown, covered with white bloom; skin thick; pulp firm, fragile, and very savoury. There is a variety of this with deeply jagged leaves, and loose bunches. Krachgutedel, p. 148.—24 *Lugiàna;* leaves 5-lobed, smooth; bunches large, rather dense; berries green, dotted, covered with grey bloom; skin thin; pulp juicy and savoury. Lugiane, p. 149.

β Plebèiæ. Grapes from which bad and cheap wines are obtained.

25 *mìsera;* leaves on long petioles, slightly 3-lobed, clothed with white villi; bunches large, pyramidal, flaccid, branched; berries large, greenish-yellow, dotted, covered with white bloom; skin thin; pulp yellow, watery. Elender, Putzcheere, Tokayer, p. 149.—26 *caudàta;* leaves on long petioles, 5-lobed, woolly beneath; bunches large, tapering into a tail, flaccid; berries cream-coloured, dotted, covered with a white bloom; skin thin; pulp juicy. Hammelchewanz, Lamberttraube, p. 149.—27 *leucophýlla;* leaves 5-lobed, covered with white hairs beneath; bunches large, flaccid; berries red, covered with grey bloom; skin thick; pulp firm, acid. Weislauber, Hudler, p. 149.—28 *cathártica;* leaves 3-lobed, pubescent beneath; bunches large, rather dense; berries greenish-white, pellucid, with a thin skin and juicy, watery, acid pulp. There are varieties of this with cream-coloured and red berries. The wine obtained from this grape is cathartic in a strong degree as well as the berries, Heinisch, p. 149.—29 *albuèlis;* leaves 3-lobed, on short petioles; bunches large, dense, pyramidal; berries white, dotted, pruinose, with a thin skin and juicy watery pulp. There are varieties of this with larger and smaller berries, cream-coloured, red, and black. Alben, Elbling, p. 149.

* * *Dactylìdes. Berries more or less oblong.*

α Nóbiles. Grapes from which pleasant wines are obtained.

30 *Malvática;* leaves rather hairy beneath; bunches large, rather dense, berries green, dotted, pruinose, with a thin skin, and juicy, savoury pulp. There are varieties of this with white and black berries. Malvasier, Seidentraube, p. 150.—31 *Rhæ̀tica;* leaves on long petioles, 5-lobed, villous beneath; bunches dense, large; berries unequal, flesh-coloured, covered with grey bloom; skin thick; pulp firm, sweet, and savoury. There are varieties of this with white and green berries. Fleischtraube, Valteliner, p. 150.

β Plebèiæ. Grapes from which bad wines are obtained.

32 *Francónica;* leaves on long petioles, 3-lobed, pubescent beneath; bunches large, flaccid, on long peduncles; berries green, dotted, pruinose, with a thick skin, and juicy, sweetish pulp. Franken, p. 150.—33 *callòsa;* leaves slightly 3-lobed, on long stalks, rough beneath; berries green, pruinose, with a callose skin, and firm, sweetish pulp. There is a variety of this with red berries. Hartheinsch, p. 150.—34 *rostràta;* leaves 3-5-lobed, on long stalks, pubescent beneath; berries acuminated, very long, green, pruinose, with a thick skin and acid pulp. There is a variety of this with blue berries. Spitzwalscher, Vogelschnabel, p. 150.

2 *Arborescéntes. Stems gigantic.*

* *Sphærocárpæ. Berries globose.*

α Nóbilis. Grapes from which excellent wines are obtained.

35 *Apiàna;* leaves 3-5-lobed, rather pilose beneath; bunches large, dense; berries cream-coloured, dotted, pruinose, with a thick skin, and a peculiar musky firm pulp, resembling the berries of the black-currant. There are varieties of this with red, blue, and black berries. Muscateller, p. 151.

β Plebèia. Grapes from which bad wines are obtained.

36 *microcárpa;* leaves 5-lobed, on long petioles, smoothish; bunches large, pyramidal, branched, flaccid; berries large, black, covered with grey bloom; skin thick; pulp firm and sweet. There is a variety of this with red berries. Trollinger, Schwarzer-gutedel, Malvasier, p. 151.—37 *Chenopòdea;* leaves 5-lobed, smooth; bunches large, rather dense, pyramidal, on long peduncles, much branched; berries middle-sized, blue, covered with grey bloom; skin thick; pulp reddish, of a sweetish-acid flavour. Gansfussler, p. 151.

* * *Dactylìdes. Berries more or less oblong.*

38 *Aureliàna;* leaves 3-lobed, on long stalks, hispid beneath; bunches early, very dense; berries cream-coloured, pellucid,

pruinose, with a thick skin, and firm, sweet, savoury pulp. There are varieties of this with white and green berries. Orleans, Seidentraube, p. 151.—39 *Africàna;* leaves 5-lobed, tomentose beneath; bunches large, flaccid; berries very long, blue, covered with a grey bloom; skin thick; pulp rather acid. Marokkaner, p. 151.—40 *Damascèna;* leaves 3-lobed, pubescent beneath; bunches large, branched, flaccid; berries large, blue, covered with grey bloom, with a thick skin, and sweet, savoury pulp at maturity. There are varieties of this with cream-coloured and white berries. Damascenertraube, Zibebe, p. 151.—41 *Alexandrìna;* leaves 5-lobed, smoothish; bunches large, flaccid, branched; berries unequal, greenish-yellow, covered with white bloom; skin thin; pulp very savoury and aromatic. Zibeben-Muskateller, p. 152.

Propagation.—The vine is propagated from seeds, layers, cuttings, grafting, and budding. By seeds for the sake of obtaining new varieties, by layers to obtain strong shewy plants the first year; by cuttings for economy in management, and to get plants with tops proportioned to their roots; and by grafting and budding for various useful and curious purposes.

By seed.—Select seed from the finest and best ripened berries, of approved sorts, if the object be to propagate an esteemed variety, or to procure a subvariety of an esteemed sort. But if the object be to procure an entirely new variety, the first object is to bring two or more sorts close together when in flower, so as that the pollen may effect a promiscuous impregnation, or by cutting out with small scissors the stamens from the flowers intended for the female parent before the anthers burst, and introducing the pollen of the variety intended for the male parent by dusting the stigma with the ripe anthers. This last is the most certain and effectual method, because the pollen of the stranger plant, operating alone, must have more influence on the progeny than when operating in conjunction with that of the blossoms to be crossed. The object of this should be to obtain a superior variety in every particular, therefore particular attention should be paid both to the kind impregnated and to the kind impregnating. Were the *Red Frontignac* and *White Sweet-water* wedded together, their union would probably produce a very valuable sort, as there would be a good chance of the berries being both large and delicate. Grapes for seed should be permitted to remain on the plant until they are perfectly mature, and until the seeds become of a dark brown. The seeds should be separated from the pulp and preserved till February or March. They should then be sown in pots filled with light earth, plunged in a moderate hot-bed, and the plants will come up in about a month; and when the plants are about 6 inches high, they should be planted singly into 48-sized pots, and shifted into larger pots from time to time as they grow. Water gently as circumstances require, give plenty of light and air, and in the following autumn cut the plants down to within two buds of the ground, and suffer only one of these to extend itself in the spring. They will produce fruit in 4 or 5 years, when the approved sorts should be selected and the others destroyed, or be kept for stocks to graft or inarch good sorts upon. Forsyth and some other authors recommend planting seedling vines the second year of their growth against a wall in the open air. Where there is abundance of walling to spare and no great haste requisite to prove the fruit, this is a good mode, as the fruit is sure of growing larger, and give a better opportunity of judging of their merits; but keeping the plants under glass in pots is the most eligible method, as the plants will produce fruit much sooner, and of better flavour. It would not, however, be prudent to plant out seedlings in a vinery in their untried state. The fruit of seedlings is not even always such as would be advisable to introduce into a vineyard; for although it may not have the sweetness, flavour, bulk, or precocity desired in an eating grape, it may be of that insipid large-berried kind, which is fit only to make the most inferior wines. In most vine countries, a small black berry, with an austere taste and aromatic flavour, and in a close bunch like that of our black cluster, is preferred to all others. It may be observed that vines raised from the seeds of black-berried kinds do not produce always black berries, nor the white-berried white berries.

By layers.—The advantage of layers is generally stated to be that of procuring large plants, that come immediately into bearing. A deep incision is made at a joint, or a ring of bark is taken off, and the shoot pegged down and covered with earth. However, vine plants raised from layers are supposed to be shorter lived and far inferior to those raised from cuttings.

By cuttings.—The advantage of propagating by cuttings is economy in labour. There are three kinds of cuttings used: 1 Long cuttings, from a foot to a foot and a half in length, consisting of new or young wood, with a joint or two of that of the preceding year. This is the sort recommended by Miller, adopted in forming vineyards on the Continent, and formerly used in this country for planting walls and vineries. They are inserted in the earth so as only to leave two eyes above ground, with the earth firmly pressed round them, they are mulched, and water is supplied regularly in dry weather. They strike freely in this way, either with or without bottom heat. In France they will even produce bunches of grapes the first year. 2 Short cuttings are formed with only one eye on the young wood, and 2 inches of that of the preceding year attached, plant in pots, one cutting in each, at first in 48-sized pots, and as soon as these pots are full of roots shift them into 32-sized pots. 3 Single-eyed cuttings; for this last method ripened wood should always be chosen at the pruning season, and preserve the shoot till wanted in spring by covering their lower ends with earth. The upper part of the cutting should be cut in a sloping direction with a sharp knife about a quarter of an inch above the eye, and cut about 3 inches below the eye horizontally, or they may be cut horizontally or slopingly at both ends at equal distances from the bud. Plant in pots, and bury the whole cutting in the soil, with the eye uppermost; apply bottom heat as in propagating short cuttings.

By grafting.—The advantages of this mode of propagation is when a wall or vinery is planted with inferior sorts of vines, the nature of the vines may be changed without loss of time and without expence; or in small vineries where it would be inconvenient to have a number of sorts from different roots, they may be procured by grafting different kinds on one and the same plant. But the most important advantage, Speechly considers, is by grafting the weak and delicate growing vines, as the *Blue Frontignac* upon robust and vigorous kinds, as the *Syrian.* The *Syrian*, raised from seed, is greatly preferable to all others for stocks. If the seedlings degenerate to a kind of wildness, so much the greater will be the vigour of the plants and the higher the flavour of the sorts grafted on them. At the pruning season select cuttings for grafts, preferring the bottom part of the last year's shoots, preserve them by inserting three parts of their length in pots filled with earth till wanted. The season for grafting in stoves is the beginning of January, in the open air the beginning of March. On small stocks, not more than an inch in diameter, cleft-grafting will be found the most proper, but upon larger stocks whip-grafting is to be preferred. Vine grafts do not take so freely as those of most other fruits; the operation must be performed with the greatest care. But the most eligible manner of grafting vines is that by approach, in which case either the stock or scion must be growing in a pot. Strong plants, 2 years potted, are to be preferred for the open air, but for a vinery or hot-house, plants from the nursery may be potted or shifted and inarched the same season. Here the clay and bandage should remain 2 or 3 months after the grafts have

formed a union, lest the grafted part spring from the stock. But in whip or cleft-grafting the clay may be taken off when the scion has made shoots 5 or 6 inches long.

Culture of the vinery.—On the culture of so important a fruit as the vine, it is not surprising that there should be a great variety of opinions. We shall only give those of modern British gardeners.

Soil.—Speechly, late gardener at Welbeck, made use of the following compost. One-fourth part of garden mould (strong loam); one-fourth of the turf from a pasture where the soil is sandy loam; one-fourth of the sweepings and scrapings of pavements and hard roads; one eighth of rotten cow and stable-yard dung mixed, and one eighth of vegetable mould from decayed leaves, turned over and broken with the spade; then put it to the other materials and work the whole well together.—Treat. on the vine, p. 25. He also covers his vine beds with a coat of gravel 2 inches thick. Abercrombie recommends "of top spit sandy loam from an upland pasture, one-third part; unexhausted brown loam from the garden one-third part; scrapings of roads free from clay one sixth part; vegetable mould or old tan reduced to earth, or rotten stable-dung, one-eighth part." The borders he recommends "to be from 3 to 5 feet in depth, and where practicable, not less than 4 feet wide in surface within the house, communicating with a border outside the building of not less than 10 feet wide." M'Phail gives the following directions: "To make a suitable border where it is required for the grape-vine, provide a large quantity of earth of a loamy nature, that from arable land or from a ridge, in which a hedge-row, or hazel, maple, &c. have grown many years and have been grubbed; or a spit deep from the surface of a common, long pastured, or from the head or end lands of a corn-field. For forcing vines do best in a strong deep loam, not destitute of a mixture of sand and well manured with rotten dung, on a dry bottom of hard clay." Nicol says, "the average depth of a border should not be less than a yard, if 4 feet so much the better. The border should not be narrower outside and inside of the house than 30 feet. The soil should be thus composed: one half strong hazelly loam, one fourth light sandy earth, an eighth part of vegetable mould or decayed tree-leaves, and an eighth part of rotten dung; to which may be added a moderate quantity of lime or shell marl. These articles should be well mixed before planting." Wm. Griffin, who has received the medal of the Horticultural Society for his skill in cultivating vines at Woodhall in Hertfordshire, forms his vine borders as follows. After being completely drained, the whole bottom is covered with brick, stone, or lime rubbish about 6 inches thick, and on this is laid a compost of "half good loamy soil with its turf, one quarter of rich solid old dung, and one quarter of brick and lime-rubbish, the turf well rotted, and the whole well incorporated." Hort. trans. vol. 4. p. 100. D. Judd (Hort. trans. vol. 4. p. 4.) uses the following compost: half of rich gritty loam from a common; a quarter of rich old dung; and a quarter of lime-rubbish and leaf-mould mixed together. These materials were kept separate and frequently turned during winter, and when afterwards mixed, were not sifted, but laid on a prepared bottom to a depth of 3 feet. He says he does not use so much dung as is usually done, because though the vine will bear an extraordinary quantity of manure, yet its growth is thereby retarded, especially when young. He recommends the addition of old tan, from having experienced (with Speechly, Mitchell, and others) that the vine will root in that more freely than in any other substance.

Choice of plants.—Those raised from eyes and have been properly trained to a single shoot the second year after having been struck are preferred; but where plants have to be sent from a great distance, Justice prefers cuttings to plants containing an inch or two of the old wood and 12 of the new; these he plants at once where they are to remain, as practised in France. Mr. Neill, Edinb. encyc. art. hort. details a speedy mode of storing a new grape-house. However, this mode can only be practised where a vinery exists previously, or where there is a friend's vinery in the neighbourhood. In the end of June or the beginning of July, when the vines have made shoots 10 or 12 feet long, and about the time of the fruit setting, select any supernumerary shoots, bend them down so as to make them a double or flexure, into a pot filled with earth, taking care that a portion of last year's wood, containing a joint, pass into the soil in the pot; keep them each in a wet state, and at the same time maintain a moist warm air in the house, and in a week or 10 days roots will be seen proceeding from the joint. The layer may now be safely detached. Very frequently it contains 1 or 2 bunches of grapes, which continue to grow and come to perfection. A new grape-house may be furnished in this way with plants in 3 months as by the usual method in 3 years; for in the second year they will yield a good crop of grapes, but they should be allowed only to bear a moderate crop the first year, for if allowed to bear a full crop the first year, the plants would necessarily show their exhausted state by barrenness the following year. A mode of more general utility is to select the plants in the nursery a year before wanted, and to order them to be potted into rather large pots, baskets, or tubs, filled with richish earth and plunged into a tan bed. They will thus make shoots, which, the first year after their final destination will, under ordinary circumstances, produce fruit.

Planting.—Vines are commonly trained against a back wall or a trellis under the glass roof. In the first case, the plants are always planted in the inside of the house; but in the latter, there are two opinions among practical men, one in favour of planting outside, and the other inside the parapet wall. Where the vines are to be drawn out when in a dormant state, as is generally the case with those trained under the rafters in pineries, outside planting must be adopted; but for vineries, where this practice is not requisite, it seems preferable to plant them inside. Abercrombie says, "let them be carefully turned out of the pots, reducing the ball a little, and singling out the matted roots. Then place them in the pits, just as deep in the earth as they were before, carefully spreading the roots, and filling them up with vegetable mould or light earth. Settle all with a little water, and let them have plenty of free air every day, defending them from severe frost and wet till they begin to push young shoots." D. Judd (hort. trans. 4. p. 4.). The vines being reared from eyes in March, cut them down to one eye the following March, put them into bottom heat, there to stand until they produce shoots 2 feet long, afterwards harden them in the green-house, where a temperature of 60 degrees is kept; there to remain until they grow 2 feet longer. Holes are made in the border in the beginning of May, and about a barrowfull of old rotten tan put in each hole, in the middle of which the balls are placed, after having been treated as follows: the leaves are cut from the lower part of the stem 2½ feet of its length; the end of the shoot is then drawn through the hole in the wall, the ball is placed 2 feet distant from the wall on its side, so that the stem will lie in a horizontal position, about 6 inches below the level of the surface of the border, and that part of the stem which is to be covered with earth is slit or tongued at every eye, to the centre of the joint. This being done, the stem is covered with old tan, and abundance of roots will be produced from every eye so slit. After the roots had issued from the slits, it was surprising the progress the shoots made, under Judd's management they were from 25 to 30 feet long, and proportionate in strength.

Season of planting.—Plants that are in pots may be planted at any time of the year, but the autumn and spring months are preferred.

Distance.—This must depend entirely on the kind of vine planted. Speechly recommends 6 feet between each plant for the weak and delicate kinds, and 12 for the more robust, on a wall or trellis 12 feet high. At first temporary plants may be introduced between them; these should have been grown in large pots 2 or 3 years previous, so as to come immediately into bearing, and to be trained so as to occupy the upper part of the wall, while the permanent plants are furnishing it below.

Pruning and training.—Each author lays much stress on his own mode of pruning and training; but as M'Phail observes, good crops depend more upon management, soil, and climate, than upon any method of pruning or training that ever can be adopted. The long or new method of pruning has been adopted, and reduced to a regular system by J. Mearns of Shobben-court, Hertfordshire. The vines are planted in the inside of the house at $2\frac{1}{2}$ feet apart, nearly close to the front wall, and are headed down to within a foot of the soil, one shoot only is allowed to proceed from each plant, which at the end of the first season is cut down to the second or third eye; next year two leading shoots are encouraged, the strongest of which is stopped when it has grown three or four joints beyond the middle of the roof, and the weaker after having grown 3 or 4 feet, for the purpose of strengthening the eyes. At the fall of the leaf, the leading shoots are reduced, the main one to the length of the middle of the roof, and the lower one to the third eye. In the third season, one leading shoot is trained from each shoot, and fruit-bearing side shoots are produced, and no side shoot is allowed to proceed from the spur. The leading shoot from which is to become the bearing shoot next year. Thus in the autumn of the third season, the lower part of the house is furnished with a crop of grapes from a shoot proceeding from the wood of the preceding year; and parallel to this bearing shoot, is a young shoot for next year's crop. In winter, the shoot from the extremity of the bearing branch is cut off at the top of the roof, or within a few inches of it, and the shoot from the stem is cut down to the middle of the root, and all the spurs which had borne grapes are cut out. Each vine is now furnished with 2 shoots of bearing wood, a part of old barren wood, and a spur for producing a young shoot the following year. In the fourth summer a full crop is produced both in the upper and lower part of the house, the longer shoot bearing on the upper part of its length, and the shorter one its whole length; a leading shoot is produced from the short shoot and another from the spur. In the pruning season of the fourth year the centre shoot is entirely removed and replaced by the side shoot, and this side shoot is supplanted by a shoot from the spur in its turn, while a spur is prepared to succeed it. J. Mearns has followed this system since 1806, and has had abundant crops and large bunches, and he considers that it may be continued for any length of time.

M'Phail describes three modes of pruning. The first he calls the old method, the general shape of the plant when pruned being that of a trained peach. The second is what is called spur pruning, which is to head down the natural leader, so as to cause it to throw out 2 or 3 or more principal shoots; these are trained as leading branches; laterals from these are cultivated about 12 inches apart, as mother bearers, those in fruit are stopped, and after the fall of the leaf are cut into one or two eyes. The third is the long or new method described above. J. Seton, of Stamford-hill, plants his vines at the front and ends of the house, and trains the leading branches horizontally along long rods, and spurs are left annually on the old wood to produce fruit, and when these leading branches have reached the end of the house, they are then returned to the end from which they proceeded.

Mr. W. Smith (Hort. trans. 6. p. 522.) gives a description of arched hanging trellises in certain vineries of Scotland, which he considers a superior plan to training vines on the rafter, or to one or more wires, that while it admits air to the house it increases the space for training considerably. He thinks the plan capable of further improvement, and that the principle might be extended to peach-houses, in which case the trellis would require to be somewhat differently constructed.

Mr. Beattie (Hort. trans. vol. 5. p. 495.) gives an account of training his vine-trees in a vinery at Scone in Perthshire. To enlarge the surface to the utmost he has erected a trellis under each rafter, and from these the vines are trained along the back wall horizontally, not exactly to the top of the house, but so as to allow the free admission of air and sun to the trellis, as well as to the back wall, this method gives a great extent of surface. The vines are planted in the inside of the house, and the glasses are never taken off, but are ventilated by means of a ventilator at the top of each sash, and he has always had large crops of grapes.

Summer pruning depends generally on the necessity of admitting light and air to the fruit and young wood; and particularly on the sort of winter pruning to be adopted. The gardener must therefore have a predestinating eye to the following season. "Whatever methods of pruning are used," M'Phail remarks, "the grape-vine, through the whole course of the growing season, requires constant attendance, so as not to suffer the plant to be crowded in any part with superfluous branches or leaves, and no more fruit ought to be suffered to dwell on the plant than it is well able to bring to perfection. The berries also on each bunch should be thinned, so that they may have room to swell, without pressing too hard upon each other." M'Phail and Abercrombie agree in directing, that "as the shoots advance on newly planted vines, they must be kept regularly fastened to the rafters. Divest them of their tendrils, and also take off their lateral shoots as they appear. Vines may in general be allowed to extend 25 or 30 feet before they are stopped. Stop the shoots by pinching off their tops, after this 2 or 3 lateral shoots will come out near the top, let these extend 12 inches, then pinch off their tops; these again will send out lateral shoots, which should be stopped at the second joint. In the second season, as soon as the shoots are half a span long, the rudiments of the flower-bunches will be perceptible. Having thus ascertained the most promising shoots, divest the vines of supernumerary branches as they rise. On the leading shoots preserve the best laterals 3, 4 or 5 feet distance, according to the strength of the plant. Train the shoots retained on each side the rafter, tying them with matting to the trellis. Pinch off the bearing laterals at the second joint above the fruit, leaving only one or two bunches of fruit on each. Rub off water-shoots from the older wood. Pinch off inferior laterals and tendrils. After selecting the shoots to be trained for the production of a crop next season, and others necessary for filling the trellis from the bottom, which shoots should generally be laid in at the distance of 1 foot or 15 inches from each other; rub off all the others that have no clusters. For this purpose go over the plants every 3 or 4 days, till all the shoots in fruit have shown their clusters, and shorten those one joint above the uppermost cluster, at the same time rub off all water-shoots that may rise from the old wood. Train in the shoots to be retained, using fresh matting, and allowing sufficient room for the shoots to swell. The spurs or short shoots on which the clusters are placed will probably push again after being stopped, if so stop them again and again."

Hayward (Hort. trans. 1. p. 172.) takes off all collaterals as they arise, and any shoots, although laid in for fruit, that turn out unproductive, that the whole strength of the tree may be properly applied.

J. Mearns (Hort. trans. 4. p. 225.) stops the bearing

branches at the bunch instead of the next joint, the usual practice. He also blinds all the eyes on each fruit-spur as soon as they push, except the uppermost, which he retains to draw up the sap to nourish the fruit, however he never suffers eyes to push above a joint or two, he pinches them back, and he is always particularly cautious not to injure the leaf accompanying the bunch, for if that is lost the fruit of course will come to nothing.

Thinning the leaves and fruit.—The fruit clusters should be regularly thinned out with narrow-pointed scissars, in order to allow those berries left room to swell. This must entirely depend upon the kind so thinned. Cutting off the clusters, to a certain extent, of plants overloaded, and pushing weak wood, is the only means to cause them to produce shoots fit to bear fruit next year, and this should be duly attended to so long as the future plants are a matter of importance. The leaves should be thinned in order to admit air and light among the berries, always however taking care the leaf accompanying the bunch of fruit be retained uninjured.

Remedies for bleeding.—If pruning has been timely, the vine is not liable to bleed. But if the sap rises before the wound is healed bleeding ensues, and is not easily stopped. This of course retards the plant; but the consequences are not so disastrous as many seem to apprehend. The following remedies rank among the best: Sear and cover the wound with melted wax, or with warm pitch spread over a piece of bladder; or peel off the outside bark to some distance from the place, and then press into the pores of the wood a composition of pounded chalk and tar, mixed to the consistence of putty.—Abercrombie. However the best preventative is not to prune till the wood is thoroughly ripe in autumn, for plants pruned too late in spring, and forced too soon afterwards, will bleed. But when the vine is in full leaf it is not liable to bleed; therefore the largest branches may be cut off during the growing season with perfect safety. Mr. Knight (Hort. trans. vol. 1.) recommends four parts of scraped cheese to be added to one-part of calcined oyster-shells or other pure calcareous earth, and this composition pressed strongly into the pores of the wood. This done, he says, the sap will instantly cease to flow.

Stirring the soil and culture of the borders.—The surface of an open border should be turned with a three-pronged fork, not digging so deep as to injure the roots. This design is merely to revive the surface. When it is necessary to recruit the soil, dig the exhausted part up, and work in such a compost as has been described under soil. The dung out of the cow-house, perfectly rotted, is a fine manure for the vine. From the time the buds rise till the fruit is set, manure the border once in 10 days with the drainings of dung-hills poured over the roots of the plants.—Abercrombie. A week or two previous to commencing to force, the border should be forked over carefully, and let it be watered all over with drainings of the dung-hill, which repeat at the end of 4 or 5 days, giving as much as will sink down to the deepest roots and fibres. The border on the outside should already have been covered to a good thickness with stable-yard dung, the juice of which may be washed down to the roots. The intention of this covering is to answer as a manure, and also to keep severe frost from the roots, from the time the sap is put in motion till the spring is so advanced, as that the plants will sustain no injury. Previous to laying on the dung the border should be pointed, in order that the juices of the dung may descend the more readily.—M'Phail. Speechly covered the vine borders in front of his hot-house with gravel. The best gardeners do not crop them, or only with the most temporary crops of vegetables.

Time of beginning to force.—The best time to begin to force is the beginning of March, if the object be simply to obtain grapes in perfection moderately early. Those who begin earlier have a great number of obstacles and discouraging contingencies to intercept final success, from the adverse state of the weather. Gardeners, however, who work a number of houses, and who have to provide as well as they can against demands for grapes in early succession, begin to force about the 21st of December, and successively, in other houses, the 1st of January, the 1st of February, and so on. Attempts are made to lay forward for a crop in March by beginning to force in August; ripe grapes may be cut in 5 months or less, but when short days compose the third part of the course in about 6 months.—Abercrombie. M'Phail considers the month of February to be the best time to begin to force, if grapes be not wanted very early. To begin to force in August, M'Phail says, it would not be adviseable, unless you have several vineries, for there are many things which might reasonably be urged against the probability of success; however, by custom, vines may be brought, as it were naturally, to shoot in the autumn, and their fruit may be set before the shortest days; the greatest art will then be to preserve them through the dead of winter in a lively growing state. This can be done only by much attention in making gentle fires, and admitting an easy circulation of fresh air into the house every favourable opportunity. On the supposition that the earliest crop of grapes were over by the end of June, and the glasses laid aside, and if it is desirable to have grapes early, prune your vines in August, and put your house in order; and if it is necessary, dig and manure your border, and if dry give it a good watering with dung-water. When this is done, draw on the lights, and keep the air in the house to a moderate degree of heat, and they will shoot out and shew fruit; treat them as before directed. Speechly begins to force in November to have grapes in April. Griffin (Hort. trans. 4. p. 106.) begins early in January; no fire is used the first week, in the second a little fire is given every other night, the third week the heat is kept up to 50 or 52 degrees, but never allowed to exceed 55 till the vines begin to break; from that time until they flower the heat is kept between 52 and 57 degrees, and while they are in bloom the heat is raised to 57 and 65 degrees. Air is given regularly and plentifully through all these stages until the blossom appears, when the house is kept close, unless the sun be very powerful. When the bloom is past, attention is paid to thinning the grapes, a regular heat is kept up, and air given in due quantity when the weather permits, giving a larger proportion when the heat of the sun is strong, and shutting up early in the afternoon. The crop so treated generally ripens in July.

James Acon (Hort. trans. vol. 7. p. 1.) is enabled to furnish a regular supply of grapes throughout the year. He commences forcing on the 1st of September, and the fruit begins to ripen about the beginning of March, and continues to be gathered to the middle of May. The vines are trained horizontally on an arched trellis, a considerable distance from the glass, some on the walls and some on the rafters; but these last are introduced six weeks after the forcing of those on the trellis has begun, and they yield a succession of crops, which begin to ripen early in May. The fires of the house are directly under the trellis. The vines are planted within the house, but so as the earth is not heated by the fire. In pruning these vines, he leaves as little wood as possible. He prefers stopping them one joint above, having no joint without a cluster. When the crop is over, the branches should be laid near the ground and shaded, until the time of again beginning to force. This shade will have some affinity to the gloom of winter, which never fails to give vegetation increased energy. In May he shuts up his late vinery as soon as the bunches become visible. The vines are trained on a trellis near the glass. Till they are out of blossom the air is kept very warm. By this means the wood grows more compact, for if the house be kept cold the wood will become soft and

long jointed, and subsequently barren. As much air as possible is given during the summer, but as the autumn advances more caution on this point is observed. He endeavours to have the fruit perfectly coloured before the approach of the dark season, for if the colouring be deferred too long the berries will never acquire their proper flavour. The first object is to ripen the fruit well, after that to maintain a more passive vegetation; if this be managed well the bunches will remain for months without any apparent alteration. Great care must be observed to remove any berries inclining to damp, otherwise the crop will soon be spoiled. The *Muscat of Alexandria, St. Peter's,* and *Black Damascus* are best adapted for late crops. The gathering begins about the middle of January, and continues till the end of March, when the early house is in bearing. The pruning is the same as that adopted for the early house; no wood is suffered to remain without fruit. It will sometimes happen that the plants will bleed at the spring pruning; the best way to stop this is by keeping the house warmer for a few days, which seldom fails. After the crop is gathered the house is unroofed, to restore the elastic power of the wood. Vines in pineries should always be turned out of doors for a few weeks, for it has been observed that vines always push vigorously after having been exposed to frosty weather for a few weeks.

Care of outside stems.—The stems on the outside of the house should be guarded against the stagnating effects of cold, by a bandage of hay or moss, and a mulching of dry litter over the roots. The excluded stems must be protected in the same way at the beginning of the forcing season. It will also be adviseable, while the vines are young, to cover the outside border in winter with strawy dung taken from the outside of the hot-beds. Abercrombie. J. Griffin keeps the stems of the vines inside moist, from the time of beginning to force till the bunches show themselves, by daily watering them with a syringe. Some gardeners lap the stems round with moss, which they keep moist for two or three months. These two methods contribute to the production of vigorous shoots.

Temperature.—Abercrombie says, begin at 50° min. to 55° max., in a week raise the min. to 55°, the max. to 60°. Till the time of budding it should not exceed 60° by artificial means, and 64° by collected sun heat. After the buds are in full motion, it may be raised to 60° min. 64° max. from fire, and 68° from sun heat. By the time the bloom expands it should be 66° min. and 72° max. by fire, and when the sun's influence is strong, let it be accumulated by confining the interchange of air to the ventilators till the heat rises to 80°. After the fruit is set, the min. should be 75°, and fresh air plentifully admitted. M'Phail observes, nature should be imitated by increasing the heat as the days lengthen, but it should be remembered that to ripen the best sort of grapes they require as great a heat as the pine-apple does to ripen it in summer; for the vine has no artificial heat to its root. Nicol observes, that forcing must begin slowly by not allowing the heat to pass 50° or 55° mornings and evenings. For if forcing is begun with a dash, as many fast-going gardeners term it, the chance is that the fourth part of the buds will not push; therefore there will be a great falling off in the expected crop. When the whole of the buds are in an evident state of vegetation, the temperature may be gradually raised to 60°, 65°, and 70°, at which it may continue till the bloom begins to open. This rise should not be effected in less time than a fortnight, but three weeks is better. When the plants come into bloom, it should be raised to 75°. When the fruit is ripening let it be raised from 75° to 85° with sun heat, and plenty of air. Mearns (Hort. trans. 4. p. 254.) considers it of the utmost importance to the bold breaking of the buds, and to the strength of the wood, not to force vines hard until the first leaves arrive nearly at their full size. After that period, he gives them a much less portion of air, suffering the sun to raise the thermometer to 90° or 100° before he gives any air. He says there is no danger of drawing the wood after that stage of growth, and if the thermometer sinks to 60° at night, the vines will do better in a higher temperature in the day.

Air.—Abercrombie directs to give air pretty freely by the sashes until the leaves unfold. Before the foliage is fully made out, begin to keep the house close, admitting air only at the ventilators, and particularly observe to have a sultry moist climate while the blossom is coming out, and until it is off and the fruit set. While the fruit is swelling and ripening the plants will require abundance of light and air. M'Phail recommends a little air to be given during a part of the day, while the thermometer is above 65°, and when the sun shines in the winter months, and abundance in the summer season when the heat exceeds 75° or 80°. Nicol observes, in beginning to force air should be admitted freely every day until the foliage begins to expand, to the extent that the thermometer may not rise above 5° above the fire heat, by opening the sashes in the usual way. But after the foliage begins to expand, except in fine weather, the house should be chiefly aired by ventilators until the blossom is over, and the berries begin to set, or at least until the season becomes mild. When grapes are setting, air need not be admitted so freely as before, grapes being found to set best in a high moist temperature. A moderate circulation by the ventilators will be sufficient for this purpose, except when the sun shines strong, when it may be necessary to open a few of the sashes at the top, in order to let the rarified air escape, and to keep the temperature within due bounds. Air is to be increased as the season of the growth of the plants and fruit advance. When the fruit is ripening, it should be admitted more freely than before, in order to give the fruit a flavour, for on this, and the withholding of water, that matter entirely depends. Williams (Hort. trans. vol. 1.) strongly recommends a dry atmosphere for vines, in which, he says, the wood, although of slower growth, is more compact, and the fruit more saccharine. Hence vines growing on the sides of mountains in the province of La Mancha in Spain, yield richer grapes and make stronger wine than when cultivated in the neighbouring valleys, where, however, they experience greater warmth, and the fruit arrives sooner at maturity. Impressed with the importance of ventilation, from the beginning of July until the middle of October, he generally leaves several of the upper lights of his vinery open about 2 or 3 inches all night.

Watering and steaming.—Abercrombie says, vines require a plentiful supply of water from the time the fruit is well set till it begins to colour, particularly if the berries become transparent at the last swelling. Withhold water entirely when the grapes approach maturity. M'Phail recommends a plentiful supply of water to those planted inside, and in dry weather to those planted outside; let the plants be washed occasionally with clean water, with a syringe or engine; but if there is any chance of the paint being washed down from the rafters, it will answer the purpose fully as well by filling the house full of steam now and then, by throwing water on the flues when they are warm. The border, if in the inside of the house, should be watered and sprinkled now and then to keep it moist. Let the flues be watered now and then when they are hot, which is very beneficial to the plants, in promoting their growth, and in preventing them from being infested with the red spider. Steam, however, should not be used too copiously. If the vine borders be in the house, or if there are plenty of plants in pots of earth in it, the evaporation arising from the moist earth is generally sufficient to moisten the air properly. When the fruit is set, until the time of changing colour, the borders should be plentifully supplied, and the flues sprinkled now and then with clean water. Increase

the supplies of water with the advancement of the season. But when the fruit has begun to change colour, and swell off for ripening, the quantity of water hitherto liberally given must be lessened by degrees, and towards the coming to full maturity must be entirely withheld, that it may not be insipid. The operation of engine cleaning must also cease: but previously be particularly severe, and be careful to wash the plants well, that no vestige of the red spider may be left.

Ripening of wood.—Abercrombie says, if the fruit be not off by the middle of August, the continuation of fine dry weather, or the heat dependent on the natural climate, will hardly be sufficient to ripen the wood; and therefore, as soon as the external air declines to 68°, resume gentle fires morning and evening, so as to keep the min. temperature to 70°. Give plenty of air in favourable weather, and if it continues mild after the fruit is cut, take off the glass frames altogether; but in October the glasses should be put on again if the wood is not completely ripe. Nicol says, if the lower parts of the shoots be not by the beginning of August turning brownish, then it is adviseable to apply a little fire heat, in order to further the growth of the plants, and the perfection of the wood. Less trouble and expence for fuel will attend the process of ripening the shoots in September than in October. When the growth of the plants is over, expose the house day and night, except in rain.

Exposure and resting of the wood.—Vines which have been exposed to the weather, or freely to the dry air in a state of rest, when forced, after a proper interval, generally break at almost every eye. But if the plants are in the pinery, the branches must be withdrawn from the house after the fall of the leaf, to remain outside till the proper time of again beginning to force the plants. M'Phail says, "I advise that the glass frames of grape-houses be suffered to remain on all the year excepting in July and August, and the grape-vines in pineries should not be taken out to remain for any length of time at any season of the year. It is natural for the grape-vine to produce only one crop in the year, and when it is accustomed to grow in a hot-house appropriated for the pine-apple, its nature is not changed, nor will it offer to put forth its buds before January in hot-houses kept to a heat sufficient to grow the pine-apple, when the pine plants are plunged in a bed of warm tan." T. A. Knight is highly favourable to putting the vine into a state of repose as early as possible in the autumn preceding the season in which it is to be forced. Nicol exposes the house day and night, except in rain. After the autumn pruning he shuts up the house for 10 days, particularly if there be any appearance of frost, admitting air freely during the day. The object in this is in order that the pores may contract and their wounds heal gradually, or otherwise they are apt to bleed.

Forcing vines in a pinery.—Speechly considers that vines and pines may be grown advantageously together; but most gardeners prefer growing them separately. Abercrombie says, if any gardener gets a good fine-flavoured crop of grapes in a pinery, it is sufficient to confer very great credit on the manager. M'Phail says, in the month of November or December cut down all the old wood to about the height of the pit, leaving only two young shoots, the one to bear the crop, the other to be cut short, to grow long shoots to bear the fruit the succeeding year. As soon as they begin to shoot, let them down from the glass about a foot, so that they may receive the benefit of warm air round about them; if the stem miss shewing fruit on the fourth or fifth joint they will shew none at all, and therefore these ought to be cut out, as they would only take the nourishment from others that have shown fruit. T. A. Knight (Hort. trans. 6. p. 232.) had a Verdelho vine growing in a pot in the stove early in the spring of 1823, where its wood became perfectly ripened in August. It was then taken from the stove and placed under a north-wall, where it remained till the end of November, when it was replaced in the stove, and it ripened its fruit early in the following spring. In May it was again transferred to the north wall, where it remained in a quiescent state till the end of August. It then vegetated strongly and shewed abundant blossoms, which, upon being transferred to the stove, set freely, and the fruit having been subjected to a very high temperature, ripened early in February. The plant will retain its foliage till April, and will not be prepared to vegetate again till late in the spring. The experiment will probably succeed well with those varieties of the vine which produce blossoms somewhat freely and are of hardy habits; abundant crops of these may be obtained at all times of the winter and spring, by proper previous management of the plants, and by the application of a higher or lower degree of temperature.

Forcing vines by dung heat.—Justice, Lawrence, and Switzer state instances of this being done on wooden walls in their time. Fletcher, a market gardener near Edinburgh, has practised it with great success in a glass-case, keeping constantly, till the fruit is about to ripen, a heap of dung or dung and weeds in a state of fermentation in the area of the house. J. French, about the beginning of March, commences to force by introducing a quantity of new long dung, taken from under the cow-cribs, which is laid upon the floor of his house, extending from end to end, leaving a path next the wall. The dung being new, at the beginning a profuse steam arises, which is beneficial in destroying the ova of insects, but which would prove injurious if permitted to rise in so great a quantity when the leaves have pushed forth. In a few days the violence of the steam abates, and the buds open, and in the course of a fortnight the heat begins to diminish, and then it becomes necessary to carry a small addition of fresh dung, laying it in the bottom and covering it over with the old. The quantity of new dung to be introduced at each turning must be regulated by the degree of heat in the house. The temperature kept up is pretty regular, being from 65° to 70°.—Anderson, in hort. trans. vol. ii. J. Mearns (Hort. trans. 4. p. 256.) approves greatly of applying the steam and heat of dung to the forcing of grapes, and uses it in the earliest part of forcing with great advantage, forming a large ridge of it in the back part of his vinery, and introducing the recent litter always under the old dung. Dung heat is always highly noxious to insects. A method of forcing vines in beds raised above dung is described in Hort. trans. which does not appear to us worth trying.

Forcing the vine in hotbed-frames and other glass-cases.—T. A. Knight says (Hort. trans.) I have often used with great success a frame and hotbed thus formed for forcing grapes, by placing the bed at 3 feet distance from the wall, to which the vines are trained, and introducing their branches into the frame through holes made on the north end of it, as soon as the first violent heat of the bed had subsided, the vines having been trained to a south wall. The *White Chasselas* grape thus ripens in July if the branches of the vine be introduced in April; but the branches that have been forced, having been so closely pruned, renders them unproductive next season, therefore others must be substituted from the wall. Small holes should be made through the sides of the frame, through which the young shoots of the vines can extend themselves in the open air; for this purpose the frames should not be more than 8 or 10 feet long and 5 or 6 wide. The holes should of course be closed till wanted. When the grapes are nearly full grown, and begin to ripen, it will be advantageous to draw off the glasses altogether during the day in fine weather, by which means the fruit will obtain a degree of perfection that it rarely acquires in the vinery or hothouse. J. Mean (Hort. trans. 2. p. 330.) has practised a mode similar to that of Mr. Knight's. This method is parti-

cularly applicable to cases where vines are trained to walls and do not ripen their fruit nor bear well. The frame must be high enough on the sides to admit of the vines being trained horizontally on a trellis, to keep the pendant branches clear of the dung, and to give free room between the vine branches and the glass for the leaves. In the first or second week of April, just before the vines begin to move, you make up a common dung hotbed at a convenient distance from the wall, or from the place where the shoots of the vines are, the branches must then be introduced into the frame, the back board of the frame being so constructed as to slide off; these you train along the trellis already mentioned, with their points directed downwards towards the front of the frame. Vines produce an abundant crop in this way, and it is found that the ripening of the fruit is accelerated by laying slates on the dung; the wall always yielding a supply of young shoots for next year's crop. Various gardeners, as well foreign as British, construct temporary frames or glass-cases against vines on walls. Sometimes a temporary furnace and flue is built, and excellent crops are obtained. Small vine plants will produce fruit under a common hand-glass.

Forcing vines in pots.—This method is occasionally attempted by gardeners, in pits and stoves, and several bunches are obtained from each plant. The soil must be very rich and frequently supplied with water and liquid manure. Marsland (Hort. trans. 3. p. 363.) had a succession of grapes during eleven months in the year by forcing in pots. The pots were placed on stages, and as the fruit is cut they are replaced by others; at the age of 4 years they bear abundantly and produce large bunches. In a temporary vinery or glass-case, placed against a wall on which grapes were trained, T. Thorborn has ripened a late crop, and kept the fruit on the trees in a state fit for use till February. Mr. Ninian Niven (Loud. gard. mag. 3. p. 311.) forces grapes in pots in flued pits, and trains the shoots along the trellis under the glass. The pots are plunged in leaves or tan. After the vines have fruited 2 or 3 times they may be thrown away and their place supplied by others: by this means large fruit will always be produced.

Diseases and insects.—Nicol considers the red spider the grand enemy of the vine. After every winter pruning he recommends the branches, shoots, and trellis to be anointed with the following composition to destroy their larvæ: soft soap 2 pounds; flower of sulphur 2 pounds; nux vomica 4 ounces; turpentine a gill, boiled in 8 gallons of soft water. The composition to be laid on milk-warm with a hair brush, then with a sponge carefully anoint every part of the plant, walls, flues, rafters, &c. Abercrombie recommends all the shoots to be washed with soap and water, and it may be mixed with sulphur, the stems being previously stripped of loose bark. For the destruction of the turtle-bug, syringing the stems and shoots with a strong infusion of tobacco-stem-water. Watering is the best preventative of the red spider and green fly. To prevent birds, wasps, and flies, several gardeners direct them to be excluded by gauze frames, some recommend putting bags of gauze on each bunch. M'Phail recommends nets with meshes an inch square.

Gathering and keeping the fruit.—Grapes should be allowed to hang till fully matured and ripened, especially the thick-skinned and fleshy sorts. Even the thin-skinned and juicy kinds, which are cut usually before they are perfectly ripe, are much improved in flavour by being allowed to remain till they are ripe, particularly the *White Frontignac*, *White Sweetwater*, and *White Muscadine*. The vinery, when the fruit is ripe, ought to be kept dry and cool, in order to preserve the fruit as long as possible on the branches, and thus to prolong the grape season. The leaves round the bunches are to be picked off, and a fire to be made in the day-time in gloomy weather. J. Thomson (Hort. trans. 4. p. 132.) preserves grapes in the vinery till February, by lighting fires in the day-time to dry the air and dispel damp, and at the same time giving plenty of air, and shutting the house close up at night. Fires at night, with the house close shut, occasions a vapour, and causes the fruit to become mouldy and to decay. Some kinds will keep on the trees a long time by keeping the house dry and cool. Covering the floor of the vinery with dry coal-ashes, 3 inches thick, prevents damp. Forsyth (Treat. on fruit trees) preserves grapes by removal from the tree, cutting off the branch when there are 2 or 3 bunches on one, sealing both ends of the branch with common wax, then hanging them across a line in a dry room, cutting out with a pair of scissors any of the berries which begin to decay. He has kept grapes till February in this way. He says grapes may also be kept in packing jars, by wrapping every bunch in soft paper, with a layer of grapes and one of bran alternately, till you have filled the jar, covering the top with a bladder closely. These jars may be kept in a room where you can have a fire in damp weather.

Culture of the vine in the open air.—Vines require soil that has a dry bottom; in such as are rich and deep it will grow luxuriantly and produce abundance of large fruit; but on a dry, gravelly, chalky, or schistous soil, it will produce less fruit, but of better flavour. The greater part of the French vineyards, Bosc observes, are on a argil-calcareous soil. Argillaceous gravel is frequent near Nismes and Montpelier, and is that which produces the *vins des graves* of Bordeaux. Both good and bad wines are produced from the debris of granites, such as the *hermitage* of the Rhone. The excellent wines of Anjou are made from vines growing among schistous rocks. Wines made from vines on chalky soils, are weak, colourless, and do not keep, as those of Champagne. Retentive clays are the worst soils for the vine; in such a soil the shoots do not ripen, and the flowers prove abortive. Switzer (Fr. gard. 149.) observes that the soil for the vine should be light, with a chalky or gravelly bottom, free from springs. Hitt (Treat. on fruit trees, 12.) advises a mixture of lime-rubbish, brick-bats, &c. for a foot deep in the bottom of wall borders destined for the vine. The soil and situation, Laurence observes, (Fruit gard.) can never be too dry for the vine.

Manures.—Dung, Speechly says, should never be allowed to approach the roots of vines till it is reduced to a kind of black earth. The dust and dirt of roads he esteems as a manure for vines. He says vines are greatly injured by the common practice of laying lime-rubbish for the bottom floor in the preparation of the ground. Cow-dung is generally preferred for the vine in France, but all kinds are used by vine growers; the more careful use composts of leaves, cleaning of ditches, ponds, &c. which they turn over a year before using. Vines are allowed by all gardeners to be rich feeders; the fertility of both the Hampton Court and Valentines vines are attributed to their roots having found their way, the former into a large sewer, and the latter into a pond of stagnated water (Hort. trans. 3. p. 337.). The cause of the fertility of the vines in the hothouses at Earl's Court is attributed to the nature of the soil, which is composed of equal parts of garden earth and blood mixed together, and repeatedly turned over one year before using. Grapes are sometimes manured in Italy by digging in the pruned shoots.

Vine walls.—A south wall is always preferred; low walls 5-6 feet high, Speechly says, are best, as the plants grow stronger and afford larger grapes; at this height they enjoy both the reflected heat of the wall and the earth. English gardeners do not approve of flued walls for the vine.

Planting.—Where a wall is to be entirely covered with vines, 3 plants of a kind may be planted, weak growing kinds 3 feet distance, and the strong growing kinds 4 feet, the 2 outer plants of the 3 to be considered temporary, the middle one permanent,

which in 5 years will be in a state to cover the wall itself. When vines are planted in the intervals between other fruit-trees, or on piers, then one plant to each is sufficient.

Pruning of vines in the open air.—Any of the modes described above will do; the spur method and the fruit-tree method seem to deserve the preference; but this must entirely depend upon the pruner, for it is almost useless to describe methods of pruning. Horizontal training is considered the preferable mode for the vine. Training the shoots of vines along the ground like those of melons and cucumbers has been proposed and practised by Vispre (Dissert. on the growth of vine, Bath, 1786) and succeeded. Vines in some places are allowed to grow like herbs, spreading upon the ground, and the grapes of these vines are very large. The *Black Hamburgh* is an excellent grape for a wall. The only secret in ripening grapes in the open air is timely summer pruning, this assists ripening the wood. By fixing the bunches close to the wall by a thread they ripen a month earlier.

Growing the vine as espaliers or as standards.—The direction given for walls is sufficient for espaliers; but this practice is not to be considered worth following. As standards they may be grown in extensive plantations as in vineyards, and the plants may be trained either like currants or raspberries; in this case the stems will require to be tied to stakes. The pruning is nearly the same as that for raspberries. Switzer recommends the side or declivity of a hill lying to the south or south-east, which is favored with other hills somewhat higher, clothed with wood, on the north, north-east and north-west, to break the severity of those perishing quarters. Speechly observes that the hills in the counties bordering the English Channel, have in general declivities tending to the south, and are therefore highly favourable for vineyards. Steeps of poor, gravelly, and rocky soils, in warm situations, would produce more under vines than any other crop.

Forming vineyards.—They must be planted in rows at a distance from each other according to the height and mode of training proposed, and according as the soil may be rich or poor, deep or shallow. A square yard may be considered a desirable medium. Where vineyards are formed on the sides and steeps of hills, it may be best to form them into terraces or horizontal beds, rising one above another like steps of stairs, supported each by a wall, if the declivity is very steep, against which the vines may be trained; but in vine countries the terraces are usually wide and the walls so rude, that it is impossible to train the vines against them; in this case the standard or espalier mode is adopted. At Thonning, near Fontainebleau, mud walls are made, and the vines are trained to low trellises, at first horizontal along the bottom of the trellis, then erect upon the trellis.

Sorts proper for a vineyard.—On the Continent vines used for making wine are by no means agreeable to eat, and there is always a distinction made between fruits to eat and fruits to press by nurserymen. The names of vineyard grapes vary in every district. In this country it would be best to select such sorts as are already in the country, such as the *Clusters, Sweet-waters, Burgundy, Large Black Cluster, Miller's Grape*, &c.

Making wine from grapes.—This can hardly be considered as coming under gardening. We shall only suggest that it requires a person who has a knowledge of the general principles of fermentation and chemistry, or who has been concerned in the manufacture of British wines, to succeed properly. An excellent paper on the processes of wine-making will be found in the second volume of the memoirs of the Caledonian Horticultural Society, by Dr. Macculloch of Woolwich. H. S. Mathews (Hort. trans. vol. 2.) has given a receipt for making a tolerable sort of red wine from the leaves of the claret grape; these leaves, it is suggested, might be employed to give a colour to wines made from white grapes or green gooseberries, &c. The numerous varieties of wine depend principally on the proportion of sugar contained in the must, and the manner of its fermentation. When the proportion of sugar is sufficient and the fermentation complete, the wine is perfect and generous, if the quantity of sugar be too large, part of it remains undecomposed, and the fermentation is languid, and the wine is sweet and luscious; if, on the contrary, it be too small, the wine is thin and weak, and if it be bottled before the fermentation be completed, it will proceed slowly in the bottle, and, on drawing the cork, the wine will sparkle in the glass, as for example Champagne. When the must is separated from the husk of the grape before it is fermented, the wine has little or no colour; these are called white wines. If, on the contrary, the husks are allowed to remain in the must while the fermentation is going on, the alcohol dissolves the colouring matter of the husks, and the wine is coloured; such are called red wines. Besides in these principal circumstances wines vary much in flavour.

Qualities.—Grapes, before they are ripe, are extremely harsh and acid, and by expression furnish a liquor which is called verjuice. It contains malic acid, super-tartrate of potass, and may be made to furnish wine by addition of sugar. As the grape advances to maturity, the quantity of sugar in it increases, while that of the malic acid diminishes. It, however, never disappears entirely. The grape, when ripe, is cooling, antiseptic, and when eaten in considerable quantities is diuretic and gently laxative. In inflammatory diseases, and all others where acids are indicated, grapes form an excellent article of diet. Dried grapes or raisins are more saccharine, mucilaginous, and laxative than the recent grapes, but are less cooling. Wine, when taken in moderate quantities, acts as a beneficial stimulant to the whole system. It promotes digestion, increases the action of the heart and arteries, raises the heat of the body, and exhilarates the spirits. Taken to excess, it produces inebriety, which is often succeeded by headache, stupor, nausea, and diarrhœa, which last for several days. Habitual excess in wine debilitates the stomach, produces inflammation of the liver, weakens the nervous system, gives rise to dropsy, gout, apoplexy, tremors, and cutaneous affections. To convalescents and in all diseases of general debility and deficiency of vital powers, wine is the remedy on which medical men must place their chief dependence. It is contraindicated in all inflammatory complaints, and when it sours upon the stomach.

Insects and diseases are the same in the open air as in the vinery, and the modes for their destruction and prevention the same, which see under that head.

Common Vine or Grape, or *Wine-bearing* Vine. Fl., June, July. Clt? Shrub cl.

2 V. LACINIÒSA (Lin. spec. 293.) leaves 5-cut, with stalked, multifid segments. ♄. ⏑. S. Native of? This is perhaps only a variety of the preceding. It is called in France *Ciotat.* —Corn. can. t. 182. Vitis vinifera, var. 24. Rœm. et Schult. syst. 5. p. 314. Berries black. This is usually cultivated as a curiosity, and is called *Parsley-leaved vine.*

Jagged or Parsley-leaved Vine. Fl. June, July. Clt. 1648. Shrub cl.

3 V. DENTA'TA (Link. enum. 1. p. 236.) leaves cordate, usually 5-lobed, unequally and mucronately serrated, roughish. usually 5-lobed, unequally and mucronately serrated, roughish. ♄. ⏑. H. Native of? Flowers and fruit unknown. Petioles rough from indurated glands.

Toothed-leaved Vine. Clt. 1820. Shrub cl.

4 V. FLEXUÒSA (Thunb. Lin. trans. 2. p. 332.) leaves cordate, toothed, villous beneath; stem flexuous; panicles elongated. ♄. ⏑. H. Native of Japan. V. I'ndica, Thunb. fl. jap. 103. Berries of a brownish-green with an austere, acid taste.

Flexuous-branched Vine. Shrub cl.

5 V. WALLI'CHII (D. C. prod. 1. p. 634.) leaves cordately

truncate at the base, acuminated at the apex, acutely toothed, glossy on both surfaces; racemes shorter than the leaves. ♄. ◡. S. Native of Nipaul. Leaves shining, 2 or 3-times smaller than those of *V. vinífera*. Racemes with the peduncle hardly an inch long. Fruit unknown.

Wallich's Vine. Clt. 1822. Shrub cl.

6 V. GLABRÀ'TA (Roth. nov. spec. 156. Rœm. et Schult. syst. 5. p. 318.) leaves cordate, somewhat 3-lobed, serrated, smooth; serratures equal, with blunt lobes; tendrils bearing panicles. ♄. ◡. S. Native of the East Indies. Very like *V. vulpìna*, but the serratures of the leaves are shorter.

Smooth Vine. Clt. 1819. Shrub cl.

7 V. HEYNEA'NA (Rœm. et Schult. syst. 5. p. 318.) leaves cordate, acuminated, undivided, toothed, smooth above, but covered with rusty down beneath; panicles elongated. ♄. ◡. S. Native of the East Indies. V. cordifòlia, Roth. but not of Michx.

Heyne's Vine. Shrub cl.

8 V. I'NDICA (Lin. spec. 293.) leaves cordate, often more or less angled, finely serrated, pubescent beneath. ♄. ◡. S. Native of the East Indies.—Rheed. mal. 7. p. 11. t. 6. Panicles dense, rising solitary from the middle of the tendrils. Ovary embraced by a 5-lobed cup. Berries round, black, 1-2-seeded. Flowers greenish-purple. According to Lour. fl. cochin. 155. the berries are of a brownish-green; this is perhaps a distinct species. V. sylvéstris, Blum. bijdr. is a variety.

Indian Vine. Fl. April. Clt. 1692. Shrub cl.

9 V. LANA'TA (Roxb. fl. ind. 2. p. 474.) leaves cordate, serrated, woolly beneath; racemes panicled, opposite the leaves; petals cohering at the apex. ♄. ◡. S. Native of the East Indies in the forests in the Circar mountains. Flowers numerous, green. Berries round, purple, size of a pea, 1-2-seeded.

Woolly-leaved Vine. Shrub cl.

10 V. TRUNCA'TA (Blum. bijdr. 4th number,) leaves truncate at the base, ovate, acuminated, obtusely and glandularly-serrated; veins pubescent beneath; panicles opposite the leaves. ♄. ◡. S. Native of Java.

Truncate-leaved Vine. Shrub cl.

11 V. CYMÒSA (Blum. bijdr. l. c.) leaves cordate, acuminated, bristly-serrated, downy beneath; cymes stalked, trifid, shorter than the leaves. ♄. ◡. S. Native of Java.

Cymose Vine. Shrub cl.

12 V. CÆ'SIA (Hort. trans. vol. 5. p. 447.) leaves cordate, angularly-sinuated, with distant, bristle-like serratures, wrinkled on both surfaces, clothed with short, white down beneath; shoots terete, glaucous, pruinose. ♄. ◡. S. Native of Sierra Leone in the low lands. Cissus cæ'sia, Afz. rem. guin. ex Spreng. neue. entd. 3. p. 234. Berries black, round, with an austere, acid taste, not very agreeable to Europeans, and are chiefly eaten by the negroes, who are rather fond of them. The leaves are delicately toothed, having the appearance of being edged with fine hairs. The plant is called country grapes by the settlers at Sierra Leone.

Grey Vine. Fl. Feb. Mar. Clt. 1822. Shrub cl.

13 V. GLABE'RRIMA (Wall. fl. ind. 2. p. 476.) fleshy; leaves ovate-oblong, a little cordate, rather obtuse, remotely bristle-crenated; corymbs equal in length to the leaves, almost simple, consisting of many umbellets; flowers nectariferous; petals oblong-linear; berries 2-celled; stipulas fleshy, oval glands; stem 4-cornered. ♄. ◡. S. Native of Penang in the East Indies. Flowers rather large, tetrandrous, greenish. Ripe berries not observed.

Very-smooth Vine. Fl. Dec. Shrub cl.

14 V. GRA'CILIS (Wall. fl. ind. 2. p. 477.) leaves ovate-cordate, tapering to the apex, acuminated, with pointed teeth, pubescent above; nerves villous beneath; stipulas half-cordate, villous; clusters formed of many small, short, villous spikes, cirrhiferous; berries 3-seeded; stem filiform, villous when quite young. ♄. ◡. S. Native of the East Indies at Singapore. Flowers small, tetrandrous, brown, villous.

Slender Vine. Fl. Sept. Shrub cl.

15 V. BARBA'TA (Wall. fl. ind. 2. p. 478.) leaves round, cordate, sinuately-toothed, very slightly 3-lobed, smoothish; clusters disposed in oval bunches, bearing a dichotomous tendril; stem, branches, petioles, and peduncles covered with long capitate bristles. ♄. ◡. S. Native of Silhet in the East Indies. Flowers tetrandrous.

Bearded Vine. Fl. Aug. Shrub cl.

16 V. TRÍFIDA (Roth. nov. spec. 158.) leaves cordate, roundish, trifid at the apex, grey above and covered with rusty down beneath, repandly serrate-toothed; corymbs bifid, glomerate. ♄. ◡. S. Native of the East Indies.

Trifid-leaved Vine. Shrub cl.

17 V. TRÍLOBA (Roth. nov. spec. 156.) leaves cordate, 3-lobed, pubescent above, but clothed with rusty down beneath, deeply serrate-toothed, acuminated; lobes unequal; racemes ovate, downy. ♄. ◡. S. Native of the East Indies. Perhaps this is the same as *V. Labrúsca* of Lour. coch. 1. p. 193.

Three-lobed-leaved Vine. Shrub cl.

18 V. TOMENTÒSA (Roth. nov. spec. 156.) leaves cordate, 3-lobed, downy, serrated, middle-lobe ovate, lateral ones half-moon-shaped; racemes ovate, dense, downy. ♄. ◡. S. Native of the East Indies. Very like *V. tríloba*, but with the leaves simply serrated, and with the peduncles 2 or 3-times longer.

Downy Vine. Shrub cl.

19 V. HETEROPHY'LLA (Thunb. fl. jap. 103.) leaves 3 or 5-lobed, or the upper ones undivided, serrated, smooth; panicles somewhat dichotomous, smooth. ♄. ◡. G. Native of Japan. Teeth of calyx blunt. Style filiform, permanent. Berries globose, green, size of a pea.

Variable-leaved Vine. Shrub cl.

20 V. LATIFÒLIA (Roxb. fl. ind. 2. p. 474.) leaves cordate, 3-lobed, crenate-serrated, smooth; tendrils panicle-bearing; petals oblong; ovaries embracing a nectarial cup. ♃. ◡. S. Native of the East Indies in the warmer maritime parts.—Rheed. mal. 7. p. 13. t. 7. Flowers numerous, of a deep reddish-brown. Berries the size, shape, and appearance of a black currant, containing rarely more than 2 seeds. Root tuberous.

Broad-leaved Vine. Fl. May. Pl. cl.

21 V. PARVIFÒLIA (Roxb. fl. ind. 2. p. 475.) leaves angled, cordate, 3-lobed, crenate-serrated, smooth; stipulas oval; thyrse few-flowered. ♃. ◡. S. Native of the East Indies in the eastern parts of Bengal and Nipaul. Old branches woody, considerably flattened. Flowers very small, green. This plant has the appearance of the common vine.

Small-leaved Vine. Fl. Feb. Pl. cl.

22 V. GLANDULÒSA (Wall. fl. ind. 2. p. 479.) stem dotted, roughish; branches villous; leaves broad, cordate, ovate, 3-lobed, villous, bearing glands in the axils of the nerves beneath; tendrils dichotomous; corymbs short, dichotomous. ♃. S. Natives of the East Indies. Berries small, round, deep-purple, smooth, 4-seeded.

Glandular-leaved Vine. Fl. May, June. Shrub cl.

23 V. RUGÒSA (Wall. fl. ind. 2. p. 480.) all parts of the plant densely clothed with rusty down; leaves broad, cordate, acuminated, unequally 3-lobed, toothed, villous, and wrinkled above but woolly beneath; corymbs ovate, dense, consisting of many umbellets; petals linear, spreading. ♄. ◡. G. Native of Nipaul every where in the mountains and forests. Branches long, obscurely 4-cornered. Flowers small, with a yellow, crenulated disk and purplish stamens. This species resembles *V. lanàta*, Roxb. *tomentòsa* and *tríloba* of Roth., but differs in its far greater size, and its not cohering petals.

Wrinkled-leaved Vine. Shrub cl.

24 V. Pura'ni (Hamilt. mss. in D. Don, prod. fl. nep. p. 188.) leaves cordate, serrate-toothed, acuminated, coriaceous, pubescent above, villous beneath, as well as the petioles, sometimes 3-lobed; thyrse spicate, short, opposite the leaves. ♄. ◡. S. Native of Nipaul in the vicinity of the town, called Thankot. Shrub slender. Leaves small.

Purani Vine. Fl. April. Clt. 1820. Shrub cl.

** *Leaves ternate or quinate, rarely pinnate.*

25 V. semicorda'ta (Wall. fl. ind. 2. p. 481.) leaves ternate; leaflets villous on the under surface, acuminated, bristly-serrated, lateral ones half-cordate, gibbous, intermediate one ovate, tapering to the base; cymes oblong; young branches villous. ♃. ◡. S. Native of Nipaul on the Sheopore mountain. Flowers small, greenish.

Half-cordate-leafletted Vine. Fl. Sept. Pl. cl.

26 V. mollíssima (Wall. fl. ind. 2. p. 482.) leaves ternate; leaflets covered with very dense, white hairs, lateral ones acuminated, unequally crenated, half ovate, intermediate one elliptical, with a narrow, rather retuse base; cymes divaricating, dichotomous, villous; berries round, smooth, 4-seeded. ♄. ◡. S. Flowers tetrandrous. Berries almost the size of a common cherry.

Very soft Vine. Shrub cl.

27 V. bracteola'ta (Wall. fl. ind. 2. p. 483.) smoothish, slender; leaves ternate; leaflets with bristly-serratures, lateral ones half ovate; cymes on long peduncles, much divided, with oblong, deciduous bracteas. ♄. ◡. S. Native of the East Indies on the Juyuntija mountains. Flowers small, tetrandrous.

Bracteated Vine. Fl. Sept. Shrub cl.

28 V. cinnamòmea (Wall. fl. ind. 2. p. 483.) every part clothed with dense, rusty down; leaves from simple, ovate-cordate, a little 3-lobed, to ternate and quinate, with half-cordate, lateral leaflets; corymbs long, pendulous, bearing tendrils, consisting of very approximate, divaricate spikes. ♄. ◡. S. Native of the islands in the Straits of Malacca, Penang, Singapore, Pulo Dingding. Berries roundish, smooth, purple, 3-4-cornered. This is a charming species, remarkable on account of the varying form of its leaves.

Cinnamon-coloured Vine. Shrub cl.

29 V. rubifòlia (Wall. fl. ind. 2. p. 481.) leaves pinnate, with 5 pairs of oblong, acuminated, coarsely and sharply serrated, rather cordate leaflets, terminal one rather ovate, all glaucous beneath, and a little hairy. ♄. ◡. S. Native of Bengal on the Juyuntija mountains. Flowers fragrant, of a yellowish-green colour. Berries esculent.

Rubus-leaved Vine. Shrub cl.

*** *Dioecious or polygamous species, natives of America.*

30 V. Caribbæ'a (D. C. prod. 1. p. 634.) leaves cordate, acuminated, with long acute teeth, smoothish above, but downy beneath, as well as the peduncles. ♄. ◡. S. Native of Jamaica on the lower hills among bushes. Vìtis I'ndica, Swartz, obs. 95. Poir. dict. 8. p. 607.—Sloan. hist. 2. p. 104. t. 210. f. 4. Flowers small, white. Berries small, brownish-green, watery, acid, but eatable. This plant produces a great quantity of clusters of small black grapes of an austere taste, but they would doubtless make a good red wine. When it grows luxuriant, as it generally does on the higher woody lands of Jamaica, it is so full of juice that a piece about 3 feet long will yield near a pint of clear, tasteless water, which has saved the lives of many who have wandered long in the woods without any other refreshment of a liquid sort; therefore the plant is called in Jamaica *Water Withe*. According to Sloane, the fruit is red or deep-purple, the size of currants, and agreeably acid, as well as astringent.

Caribbean Vine. Clt. 1800. Shrub cl.

31 V. Labru'sca (Lin. spec. 293.) leaves cordate, a little 3-lobed, acutely-toothed, downy beneath, as well as the peduncles. ♄. ◡. H. Native of North America from Canada to Florida, in shady woods. Jacq. schœnbr. t. 426. Vìtis taurìna, Walt. fl. car. 242.—Plum. icon. t. 259. f. 1. Old leaves smooth beneath. Fertile racemes small. Berries black, large, of a disagreeable foxy smell, commonly called *Fox Grape*. They have a rough acid flavour, but are eatable.

Var. β, blánda; berries white. This variety is called in North America *Bland's Grape*. There are other varieties raised of this grape. From the fermented berries of all these very pleasant wine is made.

Wild Vine or Fox Grape. Fl. June, July. Clt. 1656. Sh. cl.

32 V. æstiva'lis (Michx. fl. bor. amer. 2. p. 230.) leaves broad-cordate, 3-5-lobed, young ones clothed beneath with cobweb-like down, adult ones smooth. ♄. ◡. H. Native of North America from Virginia to Carolina, in fields and woods. V. vulpìna, Willd. spec. 1. p. 1181. Jacq. schœnbr. t. 425. V. Labrúsca, Walt. fl. car. 242. Fertile racemes oblong. Berries small, dark-blue, very agreeable, and frequently converted into a very good home-made wine. It is known by the name of *Summer Grape*.

Summer Grape or Vine. Fl. May. Clt. 1656. Shrub cl.

33 V. sinua'ta; leaves sinuately-palmate, coarsely-toothed, with rhomboid recesses, young ones covered beneath with cobwebbed rusty down, adult ones smooth. ♄. ◡. H. Native of North America from Virginia to Carolina, in fields and woods. V. æstivàlis var. β, sinuàta, Pursh. fl. amer. sept. 1. p. 169. Fertile racemes oblong. Berries dark-blue, very agreeable to eat, and are, as well as those of the preceding species, converted into very good home-made wine. This is probably the V. Labruscoìdes of Muhl. cat. 27.

Scolloped-leaved Summer Grape-vine. Fl. May, June. Clt. 1656. Shrub cl.

N.B. The three preceding species have been greatly improved by cultivation, and many new varieties have been raised within the last few years.

34 V. cordifòlia (Michx. fl. bor. amer. 2. p. 231.) leaves cordate, acuminated, deeply-toothed, smooth on both surfaces. ♄. ◡. S. Native of North America from Canada to Florida, on the edges of rivers and in woods, where it is called *Winter Grape* or *Chicken Grape*. V. incìsa, Jacq. schœnbr. t. 427. V. vulpìna, Walt. fl. car. 243. Racemes loose, many-flowered. Berries green or amber-coloured, small, and ripen extremely late, of a very tart taste.

Heart-leaved Vine or Chicken Grape. Fl. June, July. Clt. 1806. Shrub cl.

35 V. ripa'ria (Michx. fl. bor. amer. 2. p. 231.) leaves cordate, a little trifid, unequally and deeply-toothed; petioles, margins, and nerves pubescent. ♄. ◡. H. Native of North America from Pennsylvania to Carolina, on the gravelly shores and islands of rivers. V. odoratíssima, Donn, hort. cant. 66. The flowers have an exquisitely fine smell, somewhat resembling that of mignonette. Female plants are very seldom found north of the Potowmac river, though the male extends very far beyond it. It is vulgarly called the *Vigne des Battures*.

River-side or Sweet-scented Vine. Fl. May, July. Clt. 1806. Shrub cl.

36 V. rotundifòlia (Michx. fl. bor. amer. 2. p. 231.) leaves shining on both surfaces, rather equally toothed, cordately kidney-shaped; racemes composed of many small umbellets or heads. ♄. ◡. H. Native of North America from Virginia to Florida, on river sides and in islands. Berries very large, dark-blue, agreeable to eat. It is commonly called *Bull* or *Bullet*

Grape, from the size and form of the fruit, sometimes *Muscadine Grape*.

Round-leaved Vine or Bullet Grape. Fl. June, July. Clt. 1806. Shrub cl.

† *American species not sufficiently known.*

37 V. PALMA'TA (Vahl. symb. 3. p. 42.) leaves cordate, palmate, smooth, with lanceolate, cut segments; umbels racemose. ♄. ◡. H. Native of Virginia. Vahl had his specimen from the Paris garden, where it was said to be a native of Virginia, but Mr. Pursh met with nothing answering the description in North America. Sir James Smith supposes this to be only a variety of *Vìtis vinífera*.

Palmate-leaved Vine. Shrub cl.

38 V. VIRGINIA'NA (Hort. par. ex Poir. dict. 8. p. 608.) leaves ovate-cordate, smooth, profoundly 5-lobed; lobes unequally and broadly crenated; racemes usually simple. ♄. ◡. H. Native of Virginia.

Virginian Vine. Shrub cl.

39 V. TILIÆFÒLIA (Humb. et Bonpl. ex Willd. in Rœm. et Schult. syst. 5. p. 320.) leaves cordate, serrated, hoary beneath. ♄. ◡. S. Native of South America on the banks of the river Magdalena, near Nares. V. I'ndica, H. B. et Kunth. 5. p. 227.

Lime-tree-leaved Vine. Shrub cl.

40 V. ACAPULCE'NSIS (H. B. et Kunth, nov. gen. amer. 7. p. 230.) leaves unknown; tendrils very long, branched; lower branches cymiferous; cymes much branched, clothed with rusty wool. ♄. ◡. S. Native of New Spain near Acapulca. Stamens 5.

Acapulca Vine. Shrub cl.

Cult. The cultivation of *Vìtis vinífera*, or common grape-vine, is given under its proper species. The American hardy species which bear eatable fruit, require the same treatment. The other hardy species are not worth cultivating; they will grow in any common soil, and ripe cuttings of them will root freely in earth. The stove species, or those from tropical countries, are not worth cultivating unless in botanic gardens; they are easily increased by ripened cuttings under a hand-glass in mould. They will grow in any common soil.

Tribe II.

LEEA'CEÆ (plants agreeing with *Leèa* in important characters). D. C. prod. 1. p. 635. Corolla monopetalous. Stamens alternating with the petals? usually monadelphous. Fruit and seeds scarcely known. Peduncles not converted into tendrils. The fruit, according to our own observations, is a dry capsule, with 4 to 6 lobes, which are separable, each lobe containing 1 seed.

V. LEE'A (in honour of James Lee, founder of the extensive nursery at Hammersmith hamlet, whose grandson is the present proprietor; author of an introduction to the Linnæan system of botany). Lin. mant. 124. D. C. prod. 1. p. 635.—Aquilícia, Lin. mant. 211.

LIN. SYST. *Monadélphia, Pentándria.* Calyx 4-5 toothed. Corolla 5-cleft, with revolute segments. Urceolus of stamens 5-lobed, with the filaments adnate to the outside between the lobes; anthers ovate, smooth. Style simple. Capsule 4-6-celled; cells 1-seeded, but both cells and seeds are often abortive. The seeds, according to Gærtner, are solitary in each cell, erect, with a 5 or 6-lobed cartilaginous albumen, with a terete, acuminated, arched or straight, somewhat excentral embryo, and awl-shaped cotyledons. Radicle inferior.—Large, rough shrubs, with cymes of small, greenish or yellowish, insignificant flowers. Leaves pinnate or bipinnate, resembling those of the *Elder*.

* *Leaves bi or tripinnate.*

1 L. SAMBU'CINA (Willd. spec. 1. p. 1177.) stem furrowed, angular; leaves somewhat bipinnate; leaflets ovate or ovate-lanceolate, serrated. ♄. S. Native of the East Indies and the Mauritian Islands, where it is called *Bois de source*. Aquilícia sambùcina, Lin. mant. 211. Cav. diss. 7. t. 218.—Rheed. mal. 2. p. 43. t. 26.—Rumph. amb. 4. t. 45. Leaves from simple to decompound. Flowers small, yellow, in terminal, supra-decompound, trichotomous corymbs. Berries round, pulpy, smooth, glaucous, black, size of a marrow-fat pea, 6-seeded, when dry torose. (f. 118.)

FIG. 118.

Elder-leaved Leea. Fl. Oct. Jan. Clt. 1790. Shrub 8 ft.

2 L. ROBU'STA (Roxb. fl. ind. 2. p. 468.) stem jointed, pubescent; leaves bi and tripinnate, with ovate-lanceolate, serrated, cuspidate leaflets; urceolus of stamens rather globose, white. ♄. S. Native of the East Indies in the Northern Circars. Stem flexuous. Leaves from 1 to 3 feet long, but usually greater in breadth; lateral leaflets with a broad cordate base, hairy beneath. Cymes supra-decompound, villous. Flowers numerous, small, green. Berries much flattened, size of a small cherry, smooth, black, and rather succulent, 6-lobed, 6-celled.

Robust Leea. Fl. Nov. Dec. Clt. 1823. Shrub 6 feet.

3 L. STAPHY'LEA (Roxb. fl. ind. 2. p. 471.) leaves compound or supra-decompound, with linear-oblong, finely taper-pointed, serrated, smooth leaflets; cymes loose. ♄. S. Native of the East Indies. Aquilícia Otíllis, Otíllis Zeylánica, Gært. fruct. 1. p. 275. t. 57. Staphýlea? I'ndica, Burm. ind. 75. t. 24. f. 2. Leaflets 4-7 inches long, and from 2-3 broad. Stipulas large. Calyx 5-toothed. Flowers small, greenish-white, very numerous. Urceolus of stamens a yellow, 5-cleft, fleshy ring. Berries dry, size of a small cherry, flattened, 5-6-grooved, 5-6-celled, with a single seed in each cell. Branches flexuous.

Staphylea-like Leea. Shrub 10 feet.

4 L. INTEGRIFÒLIA (Roxb. fl. ind. 2. p. 427.) somewhat arboreous; leaves supra-decompound, with lanceolate, entire, acuminated leaflets; corymbs supra-decompound. ♄. S. Native of the East Indies, in moist valleys among the Circar mountains. Leaves about $2\frac{1}{2}$ feet long, with the lower two pairs of pinnæ always bipinnate, as in the last species. Flowers greenish-white. Urceolus of stamens of 5 emarginate scales. Capsule usually 6-seeded.

Entire-leaved Leea. Shrub 8 feet.

5 L. RU'BRA (Blum. bijdr. 4th number,) stem round, furrowed; leaves bipinnate, rough on the veins beneath, with ovate-lanceolate, bluntly-serrated leaflets, lower ones ternate; corymbs decompound. ♄. S. Native of Java. Berries red.

Red Leea. Shrub 8 feet.

6 L. JAVA'NICA (Blum. bijdr. 1. c.) stem round, dotted, rough; leaves bipinnate, smooth, with sharply-serrated leaflets; corymbs decompound. ♄. S. Native of Java.

Java Leea. Shrub.

7 L. GUINEE'NSE; leaves pinnate, lower pair ternate; leaflets broad-lanceolate, acuminated, serrated; corymbs axillary, twin; fruit 4-celled, 4-seeded. ♄. ◡. S. Native of Guinea. (v. s. in herb. Lamb.)

Guinea Leea. Shrub straggling.

* * *Leaves usually pinnate, very seldom bipinnate.*

8 L. ACULEA'TA (Blum. bijdr. l. c.) stem roundish, furrowed, prickly; leaves pinnate, quite smooth, with coarsely-serrated leaflets; corymbs decompound. ♄. S. Native of Java.

Prickly-stemmed Leea. Shrub 8 feet.

9 L. HI'RTA (Herb. Banks, Horn. hort. hafn. 1. p. 231.) leaves pinnate, and sometimes bipinnate, with lanceolate-serrated hairy leaflets; anthers connected. ♄. S. Native of the East Indies in the lower parts of Bengal and Nipaul. L. scàbra, Roxb. mss. Stems many, flexuous, jointed. Leaflets from 2 to 8 inches long, and from 1 to 3 broad. Cymes terminal, 3-parted. Nectary inserted in the edge of the projecting ring, which surrounds the ovary. Berry black, resembling a black currant, 6-seeded, when dry 6-lobed.

Hairy Leea. Fl. Oct. Nov. Clt. 1823. Shrub 6 feet.

10 L. CRÍSPA (Lin. mant. 124.) herbaceous; stem and branches fringed at the angles; leaves pinnate, with oblong, serrated leaflets; anthers free. ♃. S. Native of the East Indies, common among bushes near Calcutta; and of the Cape of Good Hope. L. pinnàta, Andr. bot. rep. t. 355.—Rheed. mal. 2. p. 43. t. 26. Stems swelled above the joints. Leaflets usually 5, but in very luxuriant plants they are sometimes compound. Cymes small, a little hairy, 5-flowered. Flowers small, white. Urceolus of stamens with entire divisions, with the anthers lodged within its mouth. Berries round, size of a small cherry, when ripe smooth and black.

Curled-stemmed Leea. Fl. Oct. Nov. Clt. 1767. Sh. 5 ft.

11 L. A'SPERA (Wall. fl. nep. mss.) leaves pinnate, with oblong, lanceolate, serrated, villous, rather scabrous leaflets; stem and branches rather curled at the angles; anthers free. ♄. S. Native of Nipaul.

Rough-leaved Leea. Shrub 6 feet.

12 L. ÆQUA'TA (Lin. mant. 124.) stem round, pubescent; leaves pinnate, with lanceolate, acuminated, serrated leaflets, pubescent when young. ♄. S. Native of the East Indies. Leèa hirsùta, Blum. bijdr. Corymbs trichotomous. Flowers small, greenish.

Even Leea. Fl. Oct. Nov. Clt. 1777. Shrub 6 feet.

* * * *Leaves simple.*

13 L. MACROPHY'LLA (Roxb. hort. beng. p. 18. fl. ind. 2. p. 465.) herbaceous; leaves simple, stalked, broad-cordate or lobed, posterior lobes overlapping each other; cyme trichotomous; root tuberous. ♃. S. Native of the East Indies. Leaves from 1-2 feet long, and nearly as broad. Flowers numerous, small, white. Urceolus of stamens with entire divisions. Anthers inverted within the mouth of the urceolus. Berries much depressed, size of a small cherry, obscurely 6 or more lobed, with an equal number of cells, when ripe black and succulent. The root of this plant promises to yield a colour fit for dying; its taste is astringent, and it is mucilaginous.

Long-leaved Leea. Clt. 1806. Pl. 4 feet.

Cult. These plants are scarcely worth cultivating, except in general collections. They will all thrive well in a mixture of loam and peat, or any light, rich soil, and large cuttings root readily in sand under a hand-glass, in heat.

VI. LASIANTHE'RA (from λασιος, *lasios*, woolly, and ανθηρα, *anthera*, an anther; anthers hairy). Beauv. fl. d'ow. 1. p. 85. t. 51. D. C. prod. 1. p. 636.

LIN. SYST. *Pentándria*, *Monogýnia*. Calyx 5-toothed. bracteolate on the outside. Corolla 5-cleft. Stamens 5, inserted in the bottom of the corolla; filaments broad, alternating with the lobes of the corolla. Anthers oblong, hairy. Style short.—A small climbing shrub with simple leaves.

1 L. AFRICA'NA (Beauv. fl. d'ow. l. c.). ♄. ᴗ. S. Native of Africa near Chama, on the banks of the river St. Yago. A suffruticose climber, with ovate-oblong, entire, cuspidate leaves. Peduncles leaf-opposed, umbellately branched at the apex. Flowers capitate, as in *Aràlia*.

African Lasianthera. Shrub cl.

Cult. This plant will thrive in any light loamy soil, and large cuttings will strike root in sand under a hand-glass, in heat.

ORDER LIV. GERANIA'CEÆ (plants agreeing with *Gerànium* in important characters). D. C. fl. fr. 4. p. 838. prod. 1. p. 637. Sweet, Ger.—Gerània, Juss. gen. 268.

Calyx permanent, of 5 sepals (f. 119. *a.*); sepals more or less unequal, imbricate in æstivation, sometimes one of them is drawn out into a hollow spur at the base, which is closely connate to the peduncle. Petals 5 (f. 119. *b.*), (rarely 4, one of which being abortive very rarely absent altogether) unguiculate, alternating with the sepals, equal or unequal; in the first they are hypogynous, in the second they are usually inserted in the calyx or connected together. Stamens with the filaments rarely free, but almost always monadelphous at the base, disposed in a simple series, hypogynous or perigynous, equal or double in number to the petals, rarely triple that number as in *Monsònia*, sometimes some of them are sterile, equal or unequal. Ovary at first 5-celled (f. 119. *d.*), ending in a long thick style, crowned by 5 stigmas (f. 119. *e.*). Carpels 5, rather membranous, indehiscent, 1-celled, biovulate, at first pressed to the base of the torus, each ending in a style or awn, which is closely adnate to the angles of the torus, but after maturity twisting variously from the base to the apex, and by their elasticity separating the carpels from the torus (f. 119. *e.*), but still adhering at the middle to the top of the torus. Seeds solitary in the carpels, pendulous, exalbuminous. Embryo curved, with a deflexed radicle directed to the bottom of the carpel, with leafy, convolute, or flexuously plicate cotyledons, which are sometimes lobed.—Herbs or soft-stemmed shrubs, with the young stems jointed at the articulations, and separable as in *Ampelideæ*. Lower leaves opposite, upper ones alternate, with the peduncles opposite the leaves as in *Vìtis*, but never changing to tendrils. Flowers of various hues, solitary, or umbellate on the peduncles. The *Pelargòniums*, commonly called *Geraniums*, are well known to all gardeners for their beauty, and the facility with which hybrid varieties are produced among them. M. de Candolle remarks that of the true *Geraniàceæ* some are slightly acid, especially those with succulent leaves, some exhale a resinous smell, which is sometimes agreeable, but occasionally so powerful as to be unpleasant. This resinous principle is so powerful in *Sarcocaúlon L'Heretièri*, that its stem burns like a torch, and exhales an agreeable perfume. The most common property of the European *Geraniums* is to be astringent, which is chemically determined by their juice being blackened by sulphate of iron; this is particularly remarkable in *G. Robertiànum* and *G. sanguíneum*, which are both accounted vulnerary, and *Eròdium moschàtum* and *G. praténse*, in which it is united to a slight aromatic principle, whence they have been recommended for various purposes, and among others for removing calculous disorders. The *G. maculàtum*, which grows in great abundance about Philadelphia

the roots of which boiled in milk are used for the cholera in children. Barton is of opinion that it would be a good substitute for gum kino in nephrites and obstinate diarrhœas. The order is easily distinguished from the neighbouring orders in the carpels separating from the axis, from the elastic nature of the styles, but which closely adhere to it near the apex, see f. 119. *e*.

Synopsis of the genera.

1 Rhynchothe'ca. Sepals 5, equal. Petals wanting. Stamens 10; filaments free.

2 Monsònia. Sepals 5, equal. Petals 5, equal. Stamens 15, disposed in 5 3-anthered bundles.

3 Sarcocau'lon. Sepals 5, equal. Petals 5, equal. Stamens 15, monadelphous at the base.

4 Gera'nium. Sepals 5, equal. Petals 5, equal. Stamens 10, monadelphous at the base, rarely all fertile, but usually with the alternate ones fertile, with a gland at the base of each of the fertile ones.

5 Ero'dium. Sepals 5, equal. Petals 5, regular, or irregular. Stamens 10, monadelphous at the base, 5 alternate ones sterile, with a gland at the base of each of the sterile ones.

6 Pelargònium. Calyx 5-parted, upper segment drawn out into a tube or spur, which is adnate to the peduncle. Petals 5, rarely 4, irregular. Stamens 10, unequal, monadelphous, 4-7 of which are fertile, the rest sterile.

7 Grie'lum. Calyx 5-cleft, without a nectariferous tube. Petals 5, equal. Stamens 10, all fertile, connate at the base, permanent. Carpels 5, closely connected, 1-seeded.

I. RHYNCHOTHE'CA (from *ῥυγχος, rhynchos*, a beak, and *θηκη, theke*, a box; form of capsule). Ruiz et Pav. fl. per. prod. p. 142. t. 15. H. B. et Kunth, nov. gen. amer. 5. p. 232. D. C. prod. 1. p. 637.

Lin. syst. *Decándria, Monogýnia.* Calyx of 5 equal sepals. Petals wanting. Stamens 10, with free filaments. Style short, adpressed. Stigmas 5, long, thick. Carpels 5, ending each in a tail, opening at the base. Ovulæ 2 in each carpel, pendulous, fixed to the axis. Receptacle columnar, pentagonal. Seeds rather keeled. Embryo straight, inverted, placed in a fleshy albumen.—Shrubs with spiny branchlets. Branches opposite, tetragonal. Flowers stalked in fascicles at the tops of the branches. This genus differs from *Gerànium* in being without petals, and in the stamens being free, as well as in the seeds being albuminous.

1 R. integrifòlia (H. B. et Kunth, l. c. t. 464.) leaves oblong, entire; sepals somewhat mucronate. ♄. G. Native of South America, in the temperate parts of Quito, near the town of Alausi.

Entire-leaved Rhynchotheca. Shrub 6 feet.

2 R. diversifòlia (H. B. et Kunth, l. c. t. 465.) leaves ovate-oblong, entire, or trifid; sepals mucronately awned. ♄. G. Native of South America, at Pillao and Pamallacta. R. spinòsa, Ruiz et Pav. fl. per. syst. p. 142. This shrub is used to make hedges.

Variable-leaved Rhynchotheca. Shrub 8 feet.

Cult. Rhynchothèca is a genus of remarkable shrubs, none of which has as yet been introduced in a living state into Britain. But should they ever be introduced into our gardens, we would recommend their being grown in a mixture of turfy loam, vegetable mould, and sand; and young cuttings will no doubt root in sand under a hand-glass, in a moderate heat.

II. MONSO'NIA (in honour of Lady Ann Monson, who brought many curious plants from India, and who assisted Mr. Lee in his Introduction to Botany). Lin. fil. suppl. p. 342. D. C. prod. 1. p. 638.

Lin. syst. *Polyadélphia, Monogýnia.* Calyx of 5 equal sepals, with an awned mucrone at the apex of each. Petals 5, equal, twice the size of the calyx. Stamens 15, disposed in 5 bundles, containing 3 anthers each.—Perennial or biennial plants, with toothed, lobed, or decompound leaves, and large, shewy flowers. Fruit as in *Eròdium* and *Gerànium*.

Sect. I. Olope'talum (from *ολος, olos*, entire, and *πεταλον, petalon*, a petal; petals entire). D. C. prod. 1. p. 638. Stems herbaceous. Leaves suboval, toothed. Stipulas and bracteas awl-shaped, rather firm. Peduncles 1-2-flowered, bearing 2 or 4 bracteas in their middle. Petals obovate, entire.

1 M. ova'ta (Cav. diss. 4. p. 193. t. 113. f. 1.) leaves ovate-oblong, rather cordate, crenated, wavy; stipulas stiff; peduncles axillary, 1-flowered, each bearing 2 bracteas. ♂. G. Native of the Cape of Good Hope. Gerànium emarginàtum, Lin. fil. suppl. 306. M. emarginàta, Lher. ger. t. 41. Stem filiform. Flowers large, with whitish-yellow petals, having 3 streaks each.

Ovate-leaved Monsonia. Fl. Aug. Clt. 1774. Pl. $\frac{1}{2}$ foot.

2 M. biflòra (D. C. prod. 1. p. 638.) leaves elliptical-oblong, blunt, toothed, rather wedge-shaped at the base; stipulas spiny; peduncles 2-flowered, each bearing 4 bracteas. ♃. G. Native of the Cape of Good Hope. Burch, cat. afr. austr. no. 2611. Flowers the size and colour of those of the preceding.

Two-flowered Monsonia. Fl. Aug.? Pl. 1 foot.

Sect. II. Odontope'talum (from *οδους οδοντος, odous odontos*, a tooth, and *πεταλον, petalon*, a petal; petals toothed). D. C. prod. 1. p. 638. Stems herbaceous. Leaves lobed or multifid. Peduncles long, 1-flowered, furnished with 6 or 8 whorled bracteas in the middle. Petals oblong, coarsely toothed at the apex.

3 M. loba'ta (Mont. act. goth. 2. p. 1. t. 1. ex Willd. spec. 3. p. 718.) leaves cordate, 5-7-lobed; lobes blunt, serrated, pilose beneath as well as the petioles and calyxes. ♃. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 385. Sweet, ger. 273. Lois. herb. amat. t. 5. M. fília, Lin. fil. suppl. 341. Cav. diss. 3. p. 180. t. 74. f. 2. Gerànium anemonoìdes, Thunb. prod. 112. The flowers of this plant are said by Mr. Curtis to be more beautiful in the bud than when expanded; they are variegated with purple, red, white, and greenish on the outside, but pale-blush, with a darker base inside. Fruit with a very long beak. Leaves more or less hairy.

Lobed-leaved Monsonia. Fl. April, May. Clt. 1774. Pl. 1 ft.

4 M. pilòsa (Willd. enum. 717.) leaves palmately 5-parted, with 3-parted, pinnatifid segments, pilose beneath as well as the petioles and calyxes. ♃. G. Native of the Cape of Good Hope. M. fília, Pers. ench. no. 3. Gerànium Monsònia. Thunb. prod. 112. — Sweet, ger. 199. Petals greenish-red on the outside, white within, and red at the base. This is very like the following species.

Var. β, suffruticòsa (Coll. hort. rip. t. 2.) leaves with 5 pinnatifid segments; flowers large, yellowish on the outside, white within, and striped with red, with a darker base; ovary and anthers dark.

Pilose Monsonia. Fl. July, Aug. Clt. 1778. Pl. 1 foot.

5 M. speciòsa (Lin. fil. suppl. 342.) leaves palmately 5-parted, with the segments finely bipinnatifid, and are hairy as well as the petioles and calyxes. ♃. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 73. Cav. diss. 3. t. 74.

f. 1. Gerànium speciòsum, Thunb. Flowers large, rose-coloured, eye purple, greenish outside.

Var. β, pállida (Sweet, Ger. 1. t. 77.). Flowers straw-coloured, with a red centre and dark velvety eye.

Shewy Monsonia. Fl. April, May. Clt. 1774. Pl. ½ foot.

Cult. *Monsònia* is a very shewy genus of herbaceous plants, therefore deserve to be cultivated in every greenhouse. Sweet says a mixture of light turfy loam and decayed leaves suits the species best, and they are easily increased by cuttings and by pieces of the roots; these should be planted in the same kind of soil recommended for the plants, and a hand-glass placed over them.

III. SARCOCAU'LON (from *σαρξ σαρκος, sarx sarkos*, flesh, and *καυλος, kaulos*, a stem; stem fleshy). Sweet, hort. brit. p. 73. Monsònia, sect. 1. Sarcocaúlon, D. C. prod. 1. p. 638. Monsònia, Lher. ger. t. 42.

Lin. syst. *Monadélphia, Dodecándria.* Calyx of 5 equal mucronately-awned sepals. Petals 5, equal, twice as large as the sepals. Stamens 15, joined together in one body at the base. —Shrubs with fleshy, spiny stems, and ovate or oblong, entire or toothed leaves. Peduncles 1-flowered, each furnished at the base with 2 small bracteas. Petals entire.

1 S. L'heritie'ri (Sweet, hort. brit. p. 73.) leaves ovate, mucronate, entire, some of them are almost sessile, others on long stalks. ♄. G. Native of the Cape of Good Hope. Monsònia spinòsa, Lher. ger. t. 42. M. L'heritièri, D. C. prod. 1. p. 638. Petioles permanent, spiny. Flowers 2 inches in diameter, purple.

L'Heritier's Sarcocaulon. Fl. May, Ju. Clt. 1790. Sh. 2 ft.

2 S. Patersònii; leaves oblong-wedge-shaped, blunt, entire, some of them are almost sessile, others on short petioles. ♄. G. Native of the Cape of Good Hope. Monsònia Patersònii, D. C. prod. 1. p. 638.—Paters. itin. t. 14. Flowers an inch in diameter, purple. Peduncles, according to the figure, spinescent.

Paterson's Sarcocaulon. Fl. May, Ju. Clt. 1827. Sh. 1 ft.

3 S. Burma'nni (Sweet, hort. brit. p. 73.) leaves oblong-cuneated, crenate; branches knotted. ♄. G. Native of the Cape of Good Hope. Monsònia Burmánni, D. C. prod. 1. p. 638. Gerànium spinòsum, Burm. ger. no. 2. Cav. diss. 4. p. 195. t. 75. f. 2.—Burm. afr. p. 81. t. 31. Leaves, according to the figures, some are sessile, others on long petioles. Petioles permanent, at length becoming spines. Flowers half an inch in diameter, purple. Stamens are said to be 10, but the number is not sufficiently known. Fruit with twisted awns.

Burmann's Sarcocaulon. Fl. July. Clt. 1790. Shrub 1 ft.

Cult. This is a genus of curious spiny shrubs, bearing beautiful large flowers, sometimes 2 inches in diameter. The species thrive well in a mixture of turfy loam, decayed leaves, and a little sand; and cuttings and slips of the roots will root readily in good mould, under a hand-glass.

IV. GERA'NIUM (from *γερανος, geranos*, a crane, the long beak which terminates the carpels resembles the bill of the crane). Lher. ger. D. C. fl. fr. 4. p. 844.

Lin. syst. *Monadélphia, Decándria.* Calyx of 5 equal sepals (f. 119. *a.*). Petals 5, equal (f. 119. *b.*). Stamens 10, 5 of which are fertile and larger than the sterile 5, alternating with each other, with a nectariferous gland at the base of each of the larger stamens. Awns of carpels smooth on the inside, at length separating elastically from the base to the apex of the axis, where it adheres, circinnately revolute.—Herbs, rarely subshrubs, with palmate-lobed leaves, and 1-2-flowered peduncles, bearing usually beautiful flowers of various hues.

§ 1. *Perennials. Peduncles* 1-*flowered.*

* *Plants stemless.*

1 G. sessiliflòrum (Cav. diss. 4. p. 198. t. 77. f. 2.) stemless; peduncles rising from the root, much shorter than the petioles; leaves reniform, 5-7-parted, with 3-cleft lobes. ♃. H. Native of the Straits of Magellan. G. brévipes, Lher. mss. Flowers purplish.

Sessile-flowered Crane's-bill. Pl. ½ foot.

2 G. acau'le (Willd. mss. in H. B. et Kunth. nov. gen. amer. 5. p. 231.) stemless; peduncles rising from the root, short; leaves many-parted, with linear, quite entire segments. ♃. G. Native of South America on the Andes about Quito, at the height of 6600 feet above the level of the sea. Flowers red.

Stemless Crane's-bill. Pl. ½ foot.

3 G. Humbóldtii (Spreng. syst. 3. p. 70.) almost stemless; leaves 5-parted, thick, hoary beneath; segments linear, intermediate one trifid; peduncles very short; calyxes and fruit silky. ♃. F. Native of South America. G. potentilloides, Willd. herb.

Humboldt's Crane's-bill. Pl. ½ foot.

4 G. seríceum (Willd. herb. ex Spreng. syst. 3. p. 70.) stem very dwarf, woody; petioles dilated, divided; leaves multifid, silky-villous; segments linear. ♃. G. Native of South America.

Silky Crane's-bill. Pl. ¼ foot.

** *Stems trailing or tufted.*

5 G. cucullà'tum (H. B. et Kunth, l. c. 5. p. 231.) tufted; branches leafy; peduncles a little longer than the leaves; leaves 5-parted, hollow, ciliated, smooth, intermediate segments bifid or trifid; calyxes mucronated. ♃. G. Native on mountains about Popayan. G. ciliàtum, Willd. herb. Flowers reddish.

Hollow-leaved Crane's-bill. Pl. ½ foot.

6 G. philonòthum (D. C. prod. 1. p. 639.) stems prostrate; peduncles longer than the petioles, furnished with bracteas at the base, usually twisted; leaves kidney-shaped, 3-5-parted, with wedge-shaped lobes, which are 3-toothed at the apex. ♃. G. Native of New Holland on the south-west coast. Habit almost of *Ranúnculus parviflòrus* or *R. philonòtis*, but the plant is smooth.

Marsh-loving Crane's-bill. Pl. trailing.

7 G. potentilloìdes (Lher. mss. D. C. prod. 1. p. 639.) stems prostrate; peduncles longer than the petioles, and furnished above the middle with 2 bracteas; leaves kidney-shaped, 5-parted, with trifid lobes. ♃. G. Native of New Holland.

Cinquefoil-like Crane's-bill. Pl. trailing.

8 G. arachnoìdeum (St. Hil. fl. bras. 1. p. 102. t. 20.) elegantly hairy; stem decumbent, slender, branched; radical leaves kidney-shaped, 7-parted, with narrow, lanceolate, trifid segments; peduncles filiform, elongated; fruit villous. ♃. G. Native of Brazil in the province of St. Paul. Petals emarginate, red.

Cobwebbed Crane's-bill. Pl. trailing.

9 G. multi'fidum (Sweet, ger. 245. but not of D. Don,) stem branched, diffuse, slender, pubescent; leaves silky, white beneath, quinate, or deeply 5-parted; leaflets and segments 3-parted, multifid, linear; peduncles elongated, 1-2-flowered; sepals silky, 3-nerved; petals emarginate, much longer than the calyx. ♃. G. Native of the Cape of Good Hope. Petals rose-coloured, bearded at the base. Filaments slightly fringed.

Multifid-leaved Crane's-bill. Fl. May, Aug. Clt. 1825. Pl. prostrate.

10 G. Lancastrie'nse (With. fl. brit. 600.) stem prostrate, rather tumid at the joints; peduncles axillary, much longer than the petioles, furnished with 2 bracteas in the middle; leaves opposite, 5-7-parted, with trifid lobes; lobules linear. ♃. H. Native of Europe on the sandy sea-coast; in England on the sandy coast in the Isle of Walney, Lancashire. Flowers large, beautiful, flesh-coloured, with purple veins. G. prostràtum, Cav. diss. 4. p. 196. t. 76. f. 3.

Lancashire Crane's-bill. Fl. July, Sept. Brit. Pl. trailing.

* * * *Stems erect, rarely diffuse.*

11 G. sangui'neum (Lin. spec. 958.) stems erect or diffuse, branched; peduncles axillary, much longer than the petioles, furnished with 2 bracteas in the middle; leaves opposite, 5-7-parted, with trifid lobes and linear lobules. ♃. H. Native of Europe, in bushy, stony, rather hilly situations, or upon limestone rocks; plentiful in Britain. Cav. diss. 4. t. 76. f. 1. Œd. fl. dan. t. 1107. Hook. fl. lond. t. 155. Engl. bot. t. 272. G. hæ'matodes, Ray. Roots stout, woody, of a dark-reddish-brown, and an astringent quality: for other qualities see *Gerànium maculàtum*. Flowers large, of a beautiful crimson or blood-colour.

Var. β, villosíssimum (D. C. fl. fr. no. 4541.) stems prostrate, and are, as well as the leaves, very villous; flowers purple, with white claws. ♃. H. Native of Europe, particularly in the south of France, in bushy places.

Var. γ, biflòrum; peduncles 2-flowered. ♃. H. Native of Switzerland.

Bloody-flowered Crane's-bill. Fl. July, Sept. Britain. Pl. 1 to 2 feet. β trailing.

12 G. potentillæfòlium (D. C. prod. 1. p. 639.) stem branched, rather diffuse; peduncles axillary, much longer than the petioles, furnished with 2 bracteas above the middle; leaves opposite, on short petioles, clothed with white down beneath, 5-parted, with jagged lobes and linear lobules. ♃. S. Native of New Spain. G. pedunculàre, Willd. herb. Flowers very like those of *G. incànum*, but the peduncles are 1-flowered.

Cinquefoil-leaved Crane's-bill. Pl. diffuse.

13 G. Sibi'ricum (Lin. spec. 957.) stem erect, rather diffuse, branched; peduncles longer than the leaves, furnished with 2 bracteas beneath the middle; leaves 5-6-parted, with oblong, deeply-toothed lobes. ♃. H. Native of Siberia, Caucasus, and China. Cav. diss. 4. t. 77. f. 1. Jacq. hort. vind. 1. t. 19.—Gmel. sib. 3. t. 67. Corolla lilac, marked with purple stripes.

Siberian Crane's-bill. Fl. June, Jul. Clt. 1758. Pl. 1 to 2 ft.

14 G. Chiloe'nse (Willd. in H. B. et Kunth, nov. gen. amer. 5. p. 231.) stem branched, silky, glandularly-pilose; leaves 5-lobed, pubescent, with oblong, trifid, toothed segments; flowers axillary? ♃. G. Native of Quito and Chiloe. G. pubéscens, Willd. herb. Flowers white.

Chiloe Crane's-bill. Pl. 1 foot.

15 G. Agavace'nse (Willd. mss. in H. B. et Kunth, l. c. p. 231.) stem divaricate, smooth; leaves 5-parted, with lanceolate, 2-parted segments, intermediate one bifid; flowers axillary, on long peduncles. ♃. G. Native of Peru, near Ayavaca. G. partìtum, Willd. herb. Flowers white.

Ayavaca Crane's-bill. Pl. 1 foot.

16 G. diffu'sum (H. B. et Kunth, nov. gen. amer. l. c.) stems branched, diffuse, beset with reflexed hairs; peduncles a little shorter than the petioles; leaves profoundly 5-cleft, covered with close-pressed hairs beneath; segments 3-lobed; calyxes mucronated. ♃. G. Native of Peru on the mountains. Flowers unknown. Very like *G. mólle*.

Diffuse Crane's-bill. Pl. diffuse.

§ 2. *Perennials. Peduncles 2-flowered.*

* *Stem permanent, or shrubby at the base.*

17 anemonæfòlium (Lher. ger. t. 36.) stem suffruticose; leaves smooth, palmately 5-cleft, with bipinnatifidly-cleft segments, upper ones 3-parted; peduncles opposite, erect, smooth ♄. F. Native of Madeira and Teneriffe. Sweet, ger. t. 244. Curt. bot. mag. 206. G. palmàtum, Cav. diss. 4. t. 84. f. 2. G. lævigàtum, Burm. ex Lher. mss. Flowers large, purplish-red.

Anemone-leaved Crane's-bill. Fl. May, Aug. Clt. 1788. Pl. 1 to 2 feet.

18 G. macrorhi'zon (Lin. mant. 343.) stem suffruticose at the base, dichotomous at the apex; leaves smooth, 5-parted, with the lobes toothed at the apex; calyxes globose, inflated; petals entire, a little reflexed; stamens bending down. ♃. H. Native of Italy, Carinthia, and Greece. Jacq. icon. rar. 1. t. 134. Cav. diss. 4. p. 212. t. 85. Sims, bot. mag. t. 2420. Sweet, ger. 271. Flowers deep-red, or bright-purple. Peduncles sometimes umbellate.

Long-rooted Crane's-bill. Fl. May, July. Clt. 1576. Pl. 1 ft.

* * *Stems short, permanent at the base.*

19 G. inca'num (Lin. spec. 957.) stems trailing; leaves clothed with white down beneath, 5-7-parted, with multifid, linear lobes; peduncles elongated; calyx clothed with pressed, silky hairs; petals entire. ♃. G. Native of the Cape of Good Hope.—Burm. ger. 26. t. 1. Cav. diss. 4. t. 82. f. 2. Leaves almost like those of *Potentílla argéntea*. Flowers white?

Hoary-leaved Crane's-bill. Fl. May, Jul. Clt. 1701. Pl. proc.

20 G. cane'scens (Lher. ger. t. 38.) stems trailing; leaves hoary beneath, 5-parted, with oblong, deeply-toothed segments; peduncles very long, and are, as well as the calyxes, clothed with glandular hairs; petals emarginate. ♃. G. Native of the Cape of Good Hope. This species is allied on the one hand to *G. incànum*, and on the other hand to *G. asphodeloìdes*. Flowers pink. This and the preceding species have long trailing stems.

Canescent Crane's-bill. Fl. May, June. Clt. 1787. Pl. proc.

21 G. subcaule'scens (Lher. mss. D. C. prod. 1. p. 640.) stem very short; leaves almost radical, villous, rather greyish, 5-parted, with blunt, 3-toothed lobes; down on peduncles, and petioles spreading; petals very blunt, longer than the villous calyx. ♃. H. Native on the top of mount Parnassus. G. asphodeloìdes, Smith, fl. græc. 2. t. 661. prod. 2. p. 40. Habit of *G. canéscens*. It is probably only a variety of *G. asphodeloìdes*. Flowers red.

Subcaulescent Crane's-bill. Pl. ½ foot.

22 G. Donia'num (Sweet, ger. 338.) stemless; leaves deeply 5-parted, with multifid segments, and linear, blunt lobes, pilose beneath; scape tetragonal, ascending, somewhat trichotomous at the base, villous. ♃. H. Native of Nipaul in Gosaingsthan. G. multífidum, D. Don, prod. fl. nep. p. 207. Flowers purple. Calyxes pointed. Herb without, or with a very short stem.

Don's Crane's-bill. Fl. June, Nov. Clt. 1817. Pl. ½ foot.

23 G. arge'nteum (Lin. amœn. 4. p. 324.) stem very short; leaves all almost radical, on long petioles, hoary or silky on both surfaces, 5-7-parted, with trifid lobes, and linear lobules; peduncles almost radical; petals emarginate. ♃. F. Native of the Alps of Provence, Piedmont, and Carinthia. Sweet, ger. t. 59. Sims, bot. mag. t. 504.—Pon. bald. t. 342.—Segu. ver. 1. p. 471. t. 10. Flowers large, pale-red, with darker stripes.

Silvery-leaved Crane's-bill. Fl. Ju. Jul. Clt. 1699. Pl. ¼ ft.

24 G. cine'reum (Cav. diss. 4. p. 204. t. 89. f. 1.) plant almost stemless; leaves almost radical, stalked, clothed with glaucous pubescence, 5-7-parted, with wedge-shaped, trifid lobes; peduncles almost radical; petals emarginate. ♃. F. Native of the Pyrenees. G. vàrium, Lher. ger. t. 37. G. cineràceum, Lapeyr. pyr. t. 2. Root as in the preceding, thick, and woody. Flowers pale-red, with darker stripes.

Grey Crane's-bill. Fl. June, Aug. Pl. ½ foot.

* * * *Roots tuberous; stems erect or diffuse.*

25 G. tubero'sum (Lin. spec. 953.) root almost globose; stem from the base to the fork naked; leaves many-parted, with linear, pinnatifid, serrated lobes. ♃. H. Native in fields from Marseilles to Tauria, particularly in Italy and Silesia. Sweet, ger. t. 155. Cav. diss. 4. t. 78. f. 1.—Lob. icon. t. 661. f. 2. Mor. oxon. 5. t. 16. f. 21. G. radicàtum, Bieb. fl. taur. 2. p. 132.

exclusive of the synonyme of Moris. Flowers large, numerous, purple, elegant. Petals bifid.

Tuberous-rooted Crane's-bill. Fl. May, Aug. Clt. 1596. Pl. ½ foot.

26 G. LINEARI'LOBUM (D. C. fl. fr. suppl. p. 628. in a note,) roots almost globose; stem rather pubescent, naked from the base to the fork; leaves many-parted, with linear, subdivided, quite entire lobes. ♃. H. Native of Siberia in groves and fields, on the lower Volga, and at Cape Caucasus. G. tuberòsum, Bieb. fl. taur. cauc. 2. p. 135. exclusive of the synonymes of Lin. Cav. Lam. Mor. Flowers red. An elegant plant.

Linear-lobed Crane's-bill. Fl. May, July. Pl. 1 foot.

27 G. GYMNOCAU'LON (D. C. prod. 1. p. 640.) root almost globose? stem from the base to the divisions naked; upper leaves 3-parted, with pinnate-cut lobes; calyxes ciliated, villous; petals entire. ♃. H. Native of Iberia. Root and radical leaves unknown. Flowers large, blue.

Naked-stemmed Crane's-bill. Fl. May, July. Clt. 1814. Pl. 1 foot.

28 G. ASPHODELOI'DES (Willd. in Schrad. jour. 2. p. 26. t. 1.) root tuberous; stem flaccid, diffuse, hispid from reflexed hairs; leaves 5-lobed; lobes trifid, a little cut; peduncles and calyxes villous; petals emarginate; stamens awl-shaped, smooth. ♃. H. Native of fields in Greece, about Constantinople, and of the Levant. Tourn. voy. 1. p. 526. with a figure, ed. germ. 2. p. 339. t. 36. G. orientàle, Mill. dict. no. 10. Flowers dark-purple.

Asphodelus-like-rooted Crane's-bill. Pl. 1 foot.

* * * * *Stems herbaceous, erect, or diffuse. Roots fibrous.*

29 G. IBE'RICUM (Cav. diss. 4. p. 209. t. 124. f. 1.) stem villous, dichotomous, erect; leaves 5-7-parted, with pinnately-cut lobes and toothed lobules, villous; calyxes very villous; petals obcordate, or somewhat trifid. ♃. H. Native of Iberia. Sims, bot. mag. t. 1386. Sweet, ger. t. 84. G. grandiflòrum, Guld. itin. 1. p. 426. Flowers large, blue. This is a very elegant plant.

Iberian Crane's-bill. Fl. June, Sept. Clt. 1802. Pl. 1 foot.

30 G. NODO'SUM (Lin. spec. 953.) stem erect, tetragonal, lower leaves 5-lobed, upper ones 3-lobed, with oblong, acuminated, serrated lobes; petals emarginate. ♃. H. Native of France and Britain, in the mountainous parts of Cumberland, and between Hatfield and Welwyn, Herts, in thickets. Smith, engl. bot. t. 1091. Cav. diss. 4. p. 208. t. 80. f. 1.—Mor. 2. p. 516. sect. 5. t. 16. f. 22. Carpels downy. Root rather tuberous. Flowers rather large, purple, veined. Leaves shining.

Knotted Crane's-bill. Fl. May, Aug. Britain. Pl. 1½ foot.

31 G. HERNANDE'SII (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 640.) stem roundish, erect; branches and petioles beset with spreading, long hairs; lower leaves 5-lobed, upper ones 3-lobed, with oblong, acuminated, serrated lobes; petals oblong, cuneated, almost entire. ♃. H. Native of Mexico. Flowers pale-red, veined. Hern. mex. 293. f. 2. This plant is probably sufficiently distinct from the following.

Hernandes's Crane's-bill. Fl. May, July. Pl. 1½ foot.

32 G. MEXICA'NUM (H. B. et Kunth, nov. gen. amer. 5. p. 230.) stem erect, beset with reflexed hairs; leaves pedately 5-cleft, covered with long close-pressed hairs on both surfaces; segments 3-7-cleft at the apex; peduncles clothed with glandular hairs; calyxes mucronated. ♃. F. Native of Mexico between Guanaxuato and Santa Rosa. G. hírtum, Willd. herb. Flowers pale-red, veined.

Mexican Crane's-bill. Pl. 1 foot.

33 G. HOLOSERI'CEUM (Willd. herb. ex Spreng. syst. 3. p. 73.) stem erect, branched, smooth, covered with stipulas at the base; leaves kidney-shaped, 5-lobed, clothed with soft hairs on both surfaces; lobes 3-toothed, obtuse; peduncles and calyxes hairy. ♃. G. Native of South America.

Whole-silky Crane's-bill. Pl. 1 foot.

34 G. ANGULÒSUM (Curt. bot. mag. t. 203.) stem angular, erect; radical leaves 7-lobed, cauline ones 5-lobed; lobes oblong, pointed, toothed; petals emarginate. ♃. H. Native of? G. venòsum, Pers. ench. 2. p. 235. Flowers pale-red, with darker veins.

Angular-stemmed Crane's-bill. Fl. May, July. Clt. 1789. Pl. 1½ foot.

35 G. REFLE'XUM (Lin. mant. 257.) stem erect, round; leaves alternate, 5-7-lobed, deeply-toothed, upper ones sessile; petals reflexed, toothed at the apex; stamens smooth; carpels transversely plaited. ♃. H. Native of Italy and France. Cav. diss. 4. t. 81. f. 1. Flowers with purple petals, and white stamens.

Reflexed-petalled Crane's-bill. Fl. May, June. Clt. 1758. Pl. 1 foot.

36 G. PHÆ'UM (Lin. spec. 933.) stem round, forked; leaves 5-9-lobed, deeply-toothed, upper ones sessile; petals spreading, entire; filaments of stamens hairy at the base; carpels transversely plaited. ♄. H. Native of France and Switzerland; also in England in mountainous thickets, but rare at Tovell near Maidstone. About Clapham, Ingleton, and Newburgh, Yorkshire, as well as Lancashire, Cambridgeshire, and Bedfordshire. Smith, engl. bot. t. 322. Oed. fl. dan. t. 987. Cav. diss. 4. p. 210. t. 89. f. 2. G. phæ'um var. α, vulgàtius, D. C. prod. 1. p. 641. Petals dark-brown, almost inclining to black, with a white spot at the base of each. Carpels hairy at the base.

Dusky-flowered Crane's-bill. Fl. May, June. Britain. Pl. 1 to 2 feet.

37 G. FU'SCUM (Lin. mant. 97.) stem round, simple; leaves 5-9-lobed, deeply-toothed, upper ones sessile; petals a little reflexed, entire; stamens hairy at the base; carpels transversely plaited. ♃. H. Native of the south of Europe. Flowers dirty purple. This species differs from *G. phæ'um*, in the stems being simple, not forked, and in the leaves being stiffer and more pubescent, as well as in the peduncles being twin, 1-flowered, not solitary and 2-flowered.

Brown-flowered Crane's-bill. Fl. May, June. Clt. 1759. Pl. 1 to 2 feet.

38 G. LI'VIDUM (Lher. ger. t. 39.) stem round, simple; radical leaves 9-lobed, obtuse, deeply-toothed, upper ones 5-lobed, acute; petals roundish-obcordate, waved; stamens hairy at the base; carpels transversely plaited. ♃. H. Native of France and Switzerland. Sweet, ger. 268. G. pàtulum, Vill. dauph. 3. p. 371. G. subcærùleum, Schleich. cat. 25. Flowers lead-coloured.

Livid-flowered Crane's-bill. Fl. May, June. Clt. 1775. Pl. 1 to 2 feet.

39 G. ERIOSTE'MON (Fish. ined. D. C. prod. 1. p. 641.) stem slightly angled, forked, erect; leaves 5-lobed, with ovate, deeply-toothed lobes, lower leaves on long stalks, alternate, upper ones sessile, opposite; petals entire, bearded at the base; filaments of stamens very villous, distinct at the base. ♃. H. Native of Nipaul at Gosaingsthan, and of Dahuria in birch woods. Sweet, ger. t. 197. Stem tumid at the joints, and is, as well as the leaves, villous. Flowers pale-violet, with white stamens, but purple towards the apex, as well as the stigmas.

Var. β, pállidum (Sweet, ger. t. 197. f. b.) flowers pale-blue. ♃. H. Native of Nipaul only.

Hairy-stamened Crane's-bill. Fl. June, Aug. Clt. 1822. Pl. ½ to 3 feet.

40 G. ERIA'NTHUM (D. C. prod. 1. p. 641.) stem erect, round, almost simple, naked below; leaves all stalked, palmately 5-7-lobed, with the lobes deeply and acutely serrate-jagged; peduncles crowded, short; calyxes very villous; petals entire; fila-

ments of stamens pilose. ♃. H. Native of Kamtschatka and the western coast of North America. Flowers blue.

Hairy-flowered Crane's-bill. Pl. 1 foot.

41 G. SYLVA'TICUM (Lin. spec. 954.) stem round, erect, smooth; leaves somewhat 5-7-lobed, with the lobes oblong, deeply-toothed; peduncles rather corymbose; petals somewhat emarginate, hairy at the claws; filaments of stamens ciliated to the middle. ♃. H. Native of the north of Europe in thickets and pastures. Plentiful in the north of England and Scotland in thickets by the sides of rivers or rivulets. Smith, engl. bot. t. 121. Carpels hairy. Stem beset with reflexed hairs. Flowers purple or blue, with crimson veins.

Wood Crane's-bill. Fl. June, July. Britain. Pl. 2 feet.

42 G. BATRACHIOI'DES (Cav. diss. 4. p. 211. t. 85. f. 1.) stem round, erect, hairy; leaves with 5-7 deep lobes, which are pinnatifid, or deeply-serrated; peduncles rather corymbose; petals entire; filaments of stamens awl-shaped, ciliated at the middle. ♃. H. Native of the south of Europe in woods. Calyx inflated. Flowers larger than those of *G. sylváticum*, blue. This species differs from *G. sylváticum* in having leaves more like those of *G. praténse*, and in the flowers being larger and blue, with entire petals, never notched. We are of opinion that the double flowering variety of *G. praténse* in the gardens is a variety of this species.

FIG. 119.

Batrachium-like Crane's-bill. Fl. June, July. Clt. 1817. Pl. 2 feet.

43 G. PRATE'NSE (Lin. spec. 954.) stem round, erect, downy; leaves 7-parted, with sharply-pinnatifid and deeply-serrated, linear lobes; peduncles somewhat corymbose; petals entire; filaments of stamens smooth, but much dilated at the base. ♃. H. Native of Europe in rich, rather moist pastures and thickets. In several places of Britain in hilly parts; also at Battersea, Harrow, and other places not far from London. Smith, engl. bot. t. 424. Curt. fl. lond. fasc. 4. t. 49. Cav. diss. 4. p. 210. t. 87. f. 1. Delaun. herb. amat. t. 118. G. batrachioìdes, Rai. syn. 360. This species is larger in every part than *G. sylvâticum*. Flowers large, blue. Carpels hairy.

Var. β, flòre âlbo; flowers white.

Var. γ, flòre variegàto; flower variegated with white and blue, sometimes some of the petals are white and others blue.

Var. δ, flòre plèno; flowers double, blue; leaves not so much cut as those of the single varieties, and more hairy. This is probably a variety of *G. batrachioìdes*. Found by the late lady Charlotte Murray in Scotland, near Athol house.

Meadow Crane's-bill. Fl. June, July. Britain. Pl. 2 to 3 ft.

44 G. LO'NGIPES (D. C. mem. soc. gen. 1. p. 442.) stem round, erect, smooth; leaves palmate, rather peltate, with 5-7 deeply-cut, oblong lobes; peduncles very long, from the forks of the branches; petals entire; filaments of stamens awl-shaped, smooth. ♃. H. Native of? G. Londèsii, Link. enum. 2. p. 196. Flowers large, of a lilac-violet colour. Calyx awned.

Long-stalked Crane's-bill. Fl. May, July. Clt. 1823. Pl. 1 to 1½ foot.

45 G. MACULA'TUM (Lin. spec. 955.) stem rather angular, erect, dichotomous, covered with retrograde pubescence; leaves 3-5-parted, with deeply-toothed lobes; radical ones on long stalks, upper ones opposite, sessile; petals obovate, entire; filaments of stamens hardly ciliated at the base. ♃. H. Native of North America from Canada to Carolina, in shady woods and meadows. Cav. diss. 4. t. 86. f. 2. Bigel. am. med. bot. 1. p. 84. t. 8.—Sweet, ger. 332. Flowers pale-lilac, sometimes as large as those of *G. praténse*, at others one-half smaller. This species is known in some parts of the mountains of North America by the name of alum root, on account of the astringent taste of its roots, which are very successfully employed in curing the flux and dysentery among children, which is a disease very prevalent in those countries. It may be used in powder or in extract. Its doses are similar to those of kino, a drachm or two of the tincture, 20 or 30 grains of the powder, and a quantity somewhat less of the extract. The tincture forms an excellent external application in sore throats and ulcerations of the mouth. The experiments of D. Bigelow indicate the presence of tannin and gallic acid, the former in large quantities. The proportion of tannin seems considerably to exceed that of the kino. Alcohol and proof spirit readily dissolve the active constituents of the root. The tincture is the most convenient mode for keeping the article for use.

Spotted Crane's-bill. Fl. May, July. Clt. 1732. Pl. 1½ foot.

46 G. DAHU'RICUM (D. C. prod. 1. p. 642.) stem erect, smooth, naked at the base; cauline leaves opposite, 3-5-parted, with cut, acute lobes; peduncles 3 times longer than the leaves, fruit bearing ones deflexed; calyxes smoothish; petals entire, much bearded at the base; stamens awl-shaped, ciliated. ♃. H. Native of Dahuria in bogs. Root with elongated tubers in fascicles, as in *G. aconitifòlium*, to which it is very nearly allied. Flowers pale-blue?

Dahurian Crane's-bill. Fl. June, July. Clt. 1820. Pl. 1½ foot.

47 G. ACONITIFÒLIUM (Lher. ger. t. 40.) stem rather ascending, smoothish; leaves rather peltate, 7-9-parted, with jagged lobes; peduncles and calyxes villous; petals entire; stamens awl-shaped, smoothish. ♃. H. Native of the Alps of Dauphiny and Switzerland by the sides of rivulets. G. rivulàre, Vill. dauph. 3. t. 40. Roots fascicled. Flowers white, and full of purple lines, but are one-half smaller than those of *G. praténse*. Anthers purple. Stems rather ascending, not truly erect.

Monk's-hood-leaved Crane's-bill. Fl. May, June. Clt. 1775. Pl. 1½ foot.

48 G. BIFÒLIUM (Patrin, ined. D. C. prod. 1. p. 642.) stem smooth, erect, naked under the bifurcation; radical leaves two, stalked, three times shorter than the stem, the rest opposite, and sessile, all of which are clothed with pressed hairs, 7-parted, with linear, pinnate-toothed lobes; calyxes clothed with close-pressed villi; petals entire; stamens ciliated. ♃. H. Native of Dahuria about Barnaoul. Flowers blue?

Two-leaved Crane's-bill. Fl. May, July. Pl. 1 foot.

49 G. CÆRU'LEUM (Patr. ined. D. C. prod. 1. p. 642.) stem smooth, naked at the base, dichotomous; cauline leaves opposite, 5-7-parted, with pinnate-cut, acute lobes; calyxes very villous; petals entire, scarcely puberulous at the base; stamens ciliated. ♃. H. Native of Dahuria in fields. Flowers small, light-blue. This species is like the three preceding, in having the petals just a little longer than the calyx.

Blue Crane's-bill. Fl. May, June. Clt. 1824. Pl. 1 foot.

50 G. CRISTA'TUM (Stev. mem. soc. hist. nat. mosc. 4. p. 50. t. 5.) stem flaccid, simple; leaves kidney-shaped, 7-lobed; lobes trifid; lobules 3-toothed; peduncles elongated, and are, as well as the calyxes, hispid; petals emarginate, larger than the calyx; carpels crested, as in *Onobrỳchis Càput-Gálli*. ♃. H. Native of Albania and Iberia at the river Jucharibasch. G. Albànum, Bieb. fl. taur. 2. p. 137. Flowers purple.

Crested-carpelled Crane's-bill. Fl. May, Aug. Clt. 1820. Pl. 1 foot.

51 G. PYRENA'ICUM (Lin. mant. 97.) stem erect, branched; leaves kidney-shaped, 7-lobed; lobes oblong, blunt, trifid, with 3-toothed lobules; floral leaves 3-parted; petals emarginate, twice as long as the calyx; carpels keeled, pubescent. 4. H. Native of Europe from Spain to Britain, in meadows and pastures. In England by a river between Bingley and Keighley, Yorkshire; also near Enfield, and about Brompton Chelsea, and elsewhere near London. At East Winch and West Bilney, Norfolk; also near Oxford. In Scotland, near Edinburgh, and near Forfar. Smith, engl. bot. t. 405. Curt. lond. fasc. 3. t. 42. Cav. diss. 4. p. 203. t. 79. f. 2. G. perénne, Huds. ed. 1. p. 265. Root fibrous. Leaves finely hairy, rather soft to the touch. Flowers light-purple, much larger than those of *G. mólle*. There is also a white flowering variety.

Pyrenean Crane's-bill. Fl. June, July. Britain. Pl. 2 to 3 feet.

52 G. UMBRÒSUM (Walds. et Kit. pl. hung. 2. p. 131. t. 124.) lower leaves 7-lobed, with the lobes lobed, upper leaves 3-5-lobed; petals red, emarginate, or 2-lobed, twice the length of the calyx; carpels smooth. 4. H. Native of Hungary.

Shaded Crane's-bill. Fl. June, July. Clt. 1804. Pl. 2 feet.

53 G. NEMORÒSUM (Ten. cat. 1819. p. 60.) stem erect, branched; leaves kidney-shaped, deeply 7-lobed, with trifid lobes and 3-toothed lobules; petals entire, a little larger than the calyx; carpels crested, pubescent when young. 4. H. Native of Naples in groves. G. Pyrenàicum, var. γ, nemoròsum, D. C. prod. 1. p. 643. Flowers purplish-blue. Like *G. pyrenàicum*, but differs in the petals being entire.

Grove Crane's-bill. Fl. June, July. Clt. 1821. Pl. 2 feet.

* * * * * *Stems decumbent or procumbent.*

54 G. NIPAULE'NSE (D. C. prod. 1. p. 643.) stem procumbent, villous; leaves 5-lobed, villous; lobes wedge-shaped, bluntly and unequally toothed; peduncles elongated, and are, as well as the calyxes, pilose; petals obovate, somewhat emarginate, scarcely exceeding the length of the calyx; carpels pilose. 4. H. Native of Nipaul on the shady banks of the river called Kuli-Khana. Sweet, ger. t. 12. G. ràdicans, D. C. prod. 1. p. 639. ex D. Don, prod. p. 208. G. quinquenérve, Hamilt. mss. Flowers bright rose-coloured. *G. rádicans* is said to root at the joints by De Candolle, and the leaves are said to be only 3-lobed, and the peduncles 1-flowered; it is therefore probably a distinct species.

Nipaul Crane's-bill. Fl. May, Aug. Clt. 1819. Pl. trailing.

55 G. PARVIFLÒRUM (Willd. enum. 716.) stem somewhat decumbent; petioles, peduncles, and calyxes smooth; cauline leaves opposite, 3-5-parted, with trifid, toothed lobes; petals rather shorter than the calyx; stamens smooth. 4. G. Native of New Holland and Van Diemen's Land. Flowers small, of a bright lilac-colour. Petals entire.

Small-flowered Crane's-bill. Fl. May, Aug. Clt. 1816. Pl. decumbent.

56 G. PILÒSUM (Forst. prod. p. 531.) stem rather decumbent, branched; petioles and peduncles hispid with spreading hairs; leaves 3-5-parted, with the lobes divided into linear, obtuse, trifid segments; calyxes ciliated; stamens smoothish. 4. G. Native of New Zealand. Sweet, ger. t. 119. Petals obovate, rather emarginate, pale-purplish.

Pilose Crane's-bill. Fl. May, Aug. Clt. 1821. Pl. decumb.

57 G. PALU'STRE (Lin. amœn. 4. p. 323.) stem decumbent, hispid from spreading hairs; leaves 5-7-lobed; lobes deeply toothed; peduncles very long, rather hairy, with declinate pedicels; petals entire; stamens awl-shaped, smooth. 4. H. Native from France to Dahuria in subsylvan meadows and marshes. Sweet, ger. t. 3. Œd. fl. dan. t. 596. Cav. diss. 4. p. 211. t. 87. f. 2. Upper leaves 3-parted. Flowers purple, each petal marked with 3 brown nerves.

Marsh Crane's-bill. Fl. Ju. Aug. Clt. 1732. Pl. decumb.

58 G. COLLÌNUM (Bieb. fl. taur. 2. p. 137. suppl. 455.) stem angular, diffuse, and somewhat decumbent, clothed with retrograde pubescence; leaves palmately 5-parted, with somewhat 3-lobed lobes, deeply serrated; peduncles and calyxes covered with clammy villi; petals entire, roundish, hardly longer than the calyx; stamens awl-shaped, smooth. 4. H. Native of Tauria and Caucasus, in mountain meadows. Flowers purplish-blue; anthers violet. The varieties of this species are truly intricate, and are not sufficiently defined.

Hill Crane's-bill. Fl. May, Aug. Clt. 1815. Pl. rather decumbent.

59 G. WALLICHIA'NUM (D. Don. in bot. mag. t. 2377.) stem decumbent, purple; leaves 5-parted, with broadly cuneated-ovate, deeply toothed lobes, clothed on both surfaces as well as the stem with silky villi; stipulas ovate, obtuse; petals emarginate; stigmas very long. 4. H. Native of Nipaul in Gosaignsthan. Sweet, ger. t. 90. Flowers large, purple. The whole plant is clothed with silky villi. Leaves opposite.

Wallich's Crane's-bill. Fl. June, Sept. Clt. 1820. Pl. decumbent.

60 G. LAMBE'RTI (Sweet, ger. t. 338.) stem diffuse, geniculately-branched, elongated; leaves opposite, cordate, 5-lobed, pilose on both surfaces, soft; lobes wedge-shaped, cut, bluntly toothed; peduncles 2-flowered; calyxes mucronate; petals large, roundish-ovate, concave, and veiny. 4. H. Native of Nipaul. Flowers large, lilac. Filaments beset with white hairs.

Lambert's Crane's-bill. Fl. June, Sept. Clt. 1824. Pl. decumbent.

61 G. VLASSOVIA'NUM (Hort. and D. C. in mem. soc. gen. 1. p. 441.) stem round, decumbent; leaves with 5 oval, acuminated, deeply toothed lobes; upper leaves 3-lobed; stipulas distinct; petals obovate, entire. 4. H. Native of Siberia? Sweet, ger. t. 228. Flowers pink and beautifully variegated with darker veins, like those of *G. striàtum*.

Vlassove's Crane's-bill. Fl. May, Aug. Clt. 1820. Pl. decumbent.

62 G. STRIA'TUM (Lin. amœn. p. 282.) stem round, decumbent; lower leaves 5-lobed, upper ones 3-lobed; lobes ovate, acute, deeply toothed; stipulas free; petals emarginately 2-lobed. 4. H. Native of Italy and Greece. Cav. diss. 4. t. 79. f. 1. Curt. bot. mag. t. 55. Delaum. herb. amat. t. 9. Flowers pink, beautifully striped with darker veins. Carpels villous at the base. Leaves spotted with brown at the recesses.

Striped-flowered Crane's-bill. Fl. May, Oct. Clt. 1629. Pl. decumbent.

§ 3. *Annual species with 2-flowered peduncles.*

63 G. MÓLLE (Lin. spec. 955.) leaves kidney-shaped, radical ones 9-lobed, cauline ones 7-lobed; petals bifid, length of awnless calyx; carpels smoothish, wrinkled; seeds even. ⊙. H. Native of Europe, in cultivated and waste ground, meadows, pastures and by way-sides every where; plentiful in Britain. Smith, engl. bot. t. 778. Curt. lond. fasc. 2. t. 50. Œd. fl. dan. t. 679. Cav. diss. 4. p. 203. t. 83. f. 3. G. columbìnum, Ray. syn. 359. Herb of a light hoary green, downy all over with fine soft hairs. Flowers rather small, light reddish-purple.

Soft or Common Dove's-foot Crane's-bill. Fl. April, Aug. Britain. Pl. ¼ to 2 feet.

64 G. PUSI'LLUM (Lin. spec. 957.) leaves rather kidney-shaped, with 7 trifid lobes; petals emarginate, length of awnless calyx; carpels pubescent, keeled, not wrinkled; seeds even; anthers only 5. ⊙. H. Native of Europe in gravelly fields

and waste grounds, very common; plentiful in Britain. Smith, engl. bot. t. 385. Cav. diss. 4. p. 202. t. 83. f. 1. G. mólle β, Huds. ed. 2. p. 303. G. parviflòrum, Curt. lond. fasc. 6. t. 36. G. malvæfòlium, Scop. carn. 2. p. 37. Lam. fl. fr. 3. p. 18.—Vaill. par. 79. t. 15. f. 1. Habit and pubescence much like the last species, but smaller in every part. Flowers small, bluish-purple.

Var. β, hùmile (Cav. diss. 4. t. 83. f. 2.) leaves more finely cut, and stems dwarfer. ⊙. H. Growing with the species G. pusíllum, Burm. ger. 27.

Small-flowered Crane's-bill. Fl. Ju. Sept. Brit. Pl. $\frac{1}{4}$ to $\frac{3}{4}$ ft.

65 G. rotundifòlium (Lin. spec. 957.) radical leaves kidney-shaped, 7-lobed, cauline ones roundish, truncate at the base, 5-lobed; lobes trifid; petals entire, length of awned calyx; carpels hairy; seeds reticulated. ⊙. H. Native of Europe in waste ground and barren pastures, as also on walls and banks. In Britain, but rather rare. About Bath, Bristol, and London; at Hackney and Islington, and at Church Bramton, Northamptonshire, common in Suffolk, &c. Smith, engl. bot. t. 157. Cav. diss. 4. p. 214. t. 93. f. 2. G. malvàceum α, Burm. ger. 24. The whole herb is peculiarly soft, like velvet, with a considerable degree of viscidity noticed by Haller. In general appearance it most resembles the usual state of *G. mólle*. Flowers small, reddish-purple.

Round-leaved Crane's-bill. Fl. Ju. Jul. Brit. Pl. $\frac{1}{2}$ to 1 ft.

66 G. a'lbicans (St. Hil. fl. bras. 1. p. 103.) radical leaves kidney-shaped, orbicular, deeply 5-7-cleft, covered with adpressed pili; upper leaves truncate at the base; petals hardly emarginate, a little longer than the calyx; carpels obovate, pilosely-pubescent; seeds reticulated. ⊙. H. Native of Brazil in the provinces of Cisplatine and Rio Grande do Sul. Stems diffuse, hairy, as well as the peduncles and petioles. Petals pale-purple, ciliated at the claws. Filaments villous.

Whitish-leaved Crane's-bill. Fl. June, July. Pl. spreading.

67 G. pa'llens (Bieb. fl. taur. 2. p. 138.) lower leaves stalked, upper ones sessile, palmately 5-parted, with 3-lobed lobes; petals entire, a little longer than the awned calyx; carpels hairy; seeds reticulated. ⊙. H. Native of Western Iberia. Habit and pubescence much like that of *G. rotundifòlium*. Flowers small, reddish-purple, or almost white.

Pale-flowered Crane's-bill. Fl. June, Aug. Clt. 1827. Pl. $\frac{1}{2}$ to 1 foot.

68 G. columbìnum (Lin. spec. 959.) leaves 5-parted, with multifid, linear-lobes; petals emarginate, length of awned calyx; carpels smooth, even; seeds reticulated. ⊙. H. Native of Europe in corn-fields and hedges; in Britain in fields, or on dry banks on a gravelly or limestone soil, but sparingly. Smith, engl. bot. t. 259. Cav. diss. 4. p. 200. t. 82. f. 1. Œd. fl. dan. t. 1222. The whole herb is slender, mostly procumbent, bright green, clothed with small, rigid, bristly hairs, those of the stem and stalks pointing downwards, the rest upwards. Flowers of a bluish rose-colour.

Columbine Crane's-bill. Fl. June, July. Britain. Pl. procumbent, seldom erect.

69 G. disse'ctum (Lin. spec. 956.) leaves 5-7-parted, with trifid, linear lobes; petals emarginate, length of awned calyx; carpels pilose; seeds reticulated. ⊙. H. Native of Europe and Iberia on barren gravelly waste ground, hedges, and fallow fields; plentiful in Britain; also of North America in fields near New York. Smith, engl. bot. t. 753. Curt. fl. lond. fasc. 6. t. 45. Cav. diss. 4. p. 199. t. 78. f. 2. Œd. fl. dan. t. 936. Stems weak, straggling, rather angular, beset with deflexed hairs. Leaves hairy. Flowers pale-crimson, rather small.

Dissected-leaved Crane's-bill. Fl. May, June. Britain. Pl. 1 foot long.

70 G. Carolinia'num (Lin. spec. 956.) leaves divided into 5 lobes beyond the middle, with the lobes deeply 3-5-cleft; peduncles crowded at the apex of the branches; petals emarginate, length of awned calyx; carpels hairy; seeds even, smooth. ⊙. H. Native of North America in fields, from Virginia to Georgia. Cav. diss. 4. t. 84. f. 1. and t. 124. f. 2. G. lanuginòsum, Jacq. hort. schœnbr. 2. t. 140. differs in the stem, petioles, and peduncles being hispid, and in the petals being purplish. Flowers small, white, with red veins.

Carolina Crane's-bill. Fl. June, July. Clt. 1725. Pl. 1 ft.

71 G. villòsum (Ten. cat. 1819. p. 60.) leaves orbicular, cordate, divided into 9 trifid, blunt lobes; corolla twice the length of the calyx; petals emarginate; stem erect. ⊙. H. Native of Naples in the marshes of Sila. Flowers red.

Villous Crane's-bill. Fl. June, July. Clt. 1820. Pl. $\frac{3}{4}$ foot.

72 G. retro'rsum (Lher. mss. D. C. prod. 1. p. 644.) leaves 5-parted, with trifid, somewhat linear lobes, and 3-toothed, blunt lobules; hairs of stems pressed downwards; petals blunt, hardly longer than the awned calyx; carpels villous; seeds reticulated? ⊙. H. Native of New Zealand. Flowers red.

Retrograde-haired Crane's-bill. Pl. $\frac{1}{2}$ foot.

73 G. Bohe'micum (Lin. amœn. 4. p. 323.) leaves 5-lobed; lobes cuneately-ovate, deeply-toothed; hairs of stem spreading, hispid; petals emarginate, length of the long awned calyx; carpels hairy; seeds even, smooth. ⊙. H. Native of Bohemia, Silesia, and Valais, in mountain-woods.—G. lanuginòsum, Lam. dict. 2. p. 655. is a native of Numidia, and agrees with this species according to the description.—Cav. diss. 4. p. 206. t. 81. f. 2.—Dill. elth. t. 133. f. 160. The whole herb is downy and viscid. Flowers rather large, bluish-purple.

Bohemian Crane's-bill. Fl. June, Aug. Clt. 1683. Pl. $\frac{3}{4}$ ft.

74 G. divarica'tum (Ehrh. beitr. 7. p. 164.) leaves 5-lobed, upper ones 3-lobed; lobes oblong, coarsely and irregularly toothed; stem hispid, with spreading hairs; petals emarginate, rather longer than the calyx, which is a little awned; carpels scabrous, wrinkled above; seeds even, smooth. ⊙. H. Native of Hungary, Valais, and Caucasus. Walds. et Kit. pl. hung. 2. t. 123. G. nòvum, Wint. icon. t. 2. G. Wintérli, Roth. cat. 2. p. 78. Flowers small, purplish.

Divaricated Crane's-bill. Fl. May, Aug. Clt. 1799. Pl. $\frac{1}{2}$ to 1 foot, decumbent.

75 G. lu'cidum (Lin. spec. 955.) plant quite smooth; leaves roundish, 5-lobed, shining; calyx pyramidal, angular, transversely wrinkled; carpels muricated, triply keeled. ⊙. H. Native of Europe on walls, cottage roofs, and moist rocks, chiefly in mountainous parts; plentiful in several parts of Britain. Smith, engl. bot. t. 75. Hook. fl. lond. t. 32. Oed. fl. dan. t. 218. Cav. diss. 4. p. 214. t. 80. f. 2. Herb shining, succulent, turning bright red when exposed to the sun, quite smooth, except a few variable scattered hairs on the foliage. Stems spreading in every direction. Flowers small, bright rose-coloured.

Shining Crane's-bill. Fl. May, Aug. Britain. Pl. $\frac{1}{2}$ to 1 ft.

76 G. Robertia'num (Lin. spec. 955.) leaves 3-5-parted, with trifid, pinnatifid lobes; petals entire, twice the length of the angular, awned calyx; carpels downy, reticulately-wrinkled, simply-keeled; seeds even, smooth. ⊙. H. Native of Europe in waste ground, on walls, banks, and under hedges, frequent; plentiful in Britain. It is also to be found in Brazil and Chili. Smith, engl. bot. t. 1486. Curt. fl. lond. fasc. 1. t. 52. Cav. diss. 4. p. 215. t. 86. f. 1. Oed. fl. dan. t. 694. Stems spreading in every direction, and partly recumbent, red, brittle, and succulent, a little hairy at one side. Flowers small, bright crimson. Calyx brownish, hairy, with 10 angles when closed. The whole herb has a strong disagreeable smell. Bugs are said to avoid it. In autumn it assumes a deep-red hue. A decoction of the herb has been known to give relief in calculous cases.

It is considerably astringent, and is given to cattle when they make bloody water, or have the bloody flux.

Var. β, *marítimum;* leaves more shining, as well as more fleshy. ⊙. H. Native of Britain, near the sea in Dorsetshire, Selsy Island, Sussex. Flowers deep-crimson.

Var. γ, *incìsum* (St. Hil. fl. bras. 1. p. 102.) stems shorter, more diffuse, and more hairy; leaves more cut and smaller. In Brazil.

Var. δ, *albiflòrum;* flowers white. ⊙. H. Native of England, on rocks near Bristol. G. Briceànum, Sweet, hort. brit.

Herb *Robert* or Stinking Crane's-bill. Fl. May, Oct. Britain. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

75 G. purpu'reum (Vill. dauph. 3. p. 374. t. 40.) hairy; leaves 3-5-parted, with trifid, pinnatifid lobes; petals entire, a little longer than the angular, awned calyx; carpels transversely wrinkled; seeds even, smooth. ♂. H. Native of Dauphiny, on rocks. G. Robertiànum β, purpùreum, D. C. prod. 1. p. 644. Stem ascending. Flowers bright-crimson. Very like the preceding, but is easily distinguished by the leaves being 5 times smaller; petals shorter; carpels with 3 transverse wrinkles each. Herb with a strong disagreeable scent.

Purple Herb-Robert or Crane's-bill. Fl. May, Oct. Clt. 1819. Pl. $\frac{1}{2}$ foot.

76 G. Mosque'nse (Goldb. mem. soc. mosc. 5. p. 133.) stem erect, corymbosely-panicled; leaves 3-5-parted, with very narrow, cuspidate segments; petals entire, longer than the calyx. ⊙. H. Native of Russia, in marshes about Moscow. Herb with a very faint smell. It differs from *G. Robertiànum* in the stem being corymbosely-panicled, erect, not dichotomous, nor diffuse, and with the segments of the leaves much narrower, cuspidate, not obtuse.

Moscow Herb-Robert or Crane's-bill. Fl. May, Oct. Pl. 1 foot.

77 G. inodòrum; diffuse, hairy; leaves opposite, ternate, and quinate, trifidly-pinnatifid; peduncles 2-flowered; petals entire, twice the length of the awned calyx; carpels reticulated. ♂. H. Native of North America, from New York to Virginia, in shady moist places on rocks. G. Robertiànum, Pursh. fl. amer. sept. 2. p. 449. Flowers pale-red. Like the four preceding species, but without that strong disagreeable smell.

Scentless Herb-Robert or Crane's-bill. Fl. June, Oct. Clt. 1800. Pl. $\frac{1}{2}$ foot.

† *Species not well known.*

78 G. ranunculoìdes (Burm. ger. no. 4.) peduncles very long, 1-flowered; leaves orbicular, multifid; root tuberous; branches dichotomous. ♃. G. Native of the Cape of Good Hope. This species is probably distinct from *G. canéscens.*

Crowfoot-like Crane's-bill. Pl.

79 G. lupinoi'des (Burm. ger. no. 65.) peduncles radical, twin, bifid, twice the length of the petioles; leaves orbicular, cut, downy; lobes linear. ♃. G. Native of the Cape of Good Hope.—Pluk. t. 186. f. 3. This species comes near to *G. argénteum.*

Lupine-like Crane's-bill. Pl. $\frac{1}{4}$ foot.

Cult. The hardy, perennial, herbaceous kinds of *Geràniums* are mostly beautiful plants, with shewy flowers, of various hues; these are well adapted for ornamenting flower-borders; they will thrive well in any common garden soil, except the *G. argénteum* and the Nipaul species, which should be grown on rock-work or in pots, in order that they may be protected during winter. A mixture of loam, peat, and a little sand, will suit these last well. The green-house and frame species will thrive best in a mixture of loam and peat, or any light vegetable soil; these are readily increased by cuttings, planted in the same kind of soil, or from cuttings of the roots, but the hardy herbaceous, perennial kinds are to be increased by dividing the plants at the root in spring or autumn, and the whole may be increased by seeds, which ripen in abundance. The annual kinds are in general not so shewy as the perennial species; the seeds of them only require to be sown in the open border early in spring.

V. ERO'DIUM (from ερωδιος, *erodios*, a heron; form of carpels resembling the head and beak). Lher. ger. icon. et text. ined. D. C. fl. fr. 4. p. 838. prod. 1. p. 644.

Lin. syst. *Monadélphia, Pentándria.* Calyx of 5 ovate, glandular, pointed, concave, permanent sepals. Petals 5, regular or irregular. Stamens 10, monadelphous at the base, 5 of which are fertile, the alternate 5 sterile, with a gland at the base of each of the sterile filaments. Awns of carpels bearded on the inside, and at length spirally twisted, adhering by their points to the top of the style.—Herbs or subshrubs. Leaves various in form. Stipulas membranous. Peduncles generally many-flowered, very seldom 1-flowered. Every part of the plants, when bruised, emit a strong peculiar odour.

§ 1. *Leaves pinnate or pinnatifid.*

* *Stemless.*

1 E. Tata'ricum (Willd. spec. 3. p. 625.) stemless; peduncles usually 2-flowered; leaves pubescent, pinnate; leaflets pinnatifid, with linear lobes; rachis naked between the segments; petals obovate, twice as long as the calyx. ♃. H. Native of Tartary and Ulterior Siberia. Root about the thickness of the little finger. Flowers blue or violet.

Tartarian Heron's-bill. Pl. $\frac{1}{4}$ foot.

2 E. supraca'num (Lher. ger. t. 2.) stemless; peduncles 2-4-flowered; leaves hoary above, pinnate, with pinnatifid leaflets, and lanceolate-linear lobes; rachis toothed between the segments; petals retuse, twice as long as the calyx. ♃. H. Native of Spain near Barcelona on rocks in the mountains. Geràniun rupéstre, Cav. diss. 4. t. 90. f. 4. Root thick, woody. Flowers bluish-purple.

Hoary-above-leaved Heron's-bill. Pl. $\frac{1}{4}$ foot.

3 E. petræ'um (Willd. spec. 3. p. 625.) stemless; peduncles many-flowered; leaves smoothish, pinnate, with pinnatifid segments and lanceolate-linear lobes; rachis toothed between the segments; petals retuse, twice as long as the calyx. ♃. H. Native of the south of France on dry exposed rocks. Geràniun petræ'um, Gouan. ill. 45. t. 21. f. 1. Cav. diss. 4. p. 224. t. 96. f. 2. Geràniun fœ'tidum, Park. theatr. 709. E. fœ'tidum, Lher. ger. ined. no. 6. Leaves smoothish. Peduncles and petioles beset with spreading hairs. Flowers purple.

Var. β, *crìspum* (Lapeyr. abr. 390.) leaves more villous, and more curled. ♃. H. Native of the Pyrenees on rocks.

Var. γ, *lùcidum* (Lapeyr. abr. 390.) leaves smooth. ♃. H. Native of the Pyrenees on rocks.

Rock Heron's-bill. Fl. June, July. Clt. 1640. Pl. $\frac{1}{4}$ foot.

4 E. glandulòsum (Willd. spec. 3. p. 628.) stemless; peduncles many-flowered; leaves clothed with glandular pubescence, pinnate, with bipinnatifid segments and lanceolate linear lobes; rachis toothed between the segments; petals somewhat equal, twice the length of the calyx. ♃. H. Native of Spain and the Pyrenees. E. macradènum, Lher. ger. t. 1. Geràniun glandulòsum, Cav. diss. 5. t. 125. f. 2. Geràniun radicàtum, Lapeyr. pyr. t. 1. Corolla pale-violet; petals acute, the two broadest ones dark-purple at the base, and with branched lines.

Glandular Heron's-bill. Fl. June, July. Clt. 1798. Pl. $\frac{1}{2}$ ft.

5 E. trichomanefòlium (Lher. ined. no. 3. D. C. prod. 1. p. 645.) stemless; peduncles 4-flowered; leaves hairy, rather glandular, bipinnate, with oblong-linear lobules; petals blunt, a little longer than the calyx. ♃. H. Native of mount Libanon. Flowers flesh-coloured, and marked with darker lines.

Maiden-hair-leaved Heron's-bill. Pl. ½ foot.

6 E. præ'cox (Cav. diss. 5. t. 126. f. 2.) stemless; peduncles 2-flowered; leaves pinnate, with oblong, obtuse, unequally-toothed leaflets, clothed with white hairs all over. ♃. H. Native of Spain between Aranjuez and Lake Antigola. E. cicutàrium α præ'cox, D. C. prod. 1. p. 646. Flowers rose-coloured, with darker lines at the base. This species comes very near E. pimpinellæfòlium, but differs in being without the stem, as well as in being clothed with white hairs.

Early Heron's-bill. Pl. ½ foot.

* * *Species almost without stems.*

7 E. Chrysa'nthum (Lher. ined. no. 2. D. C. prod. 1. p. 645.) almost stemless; peduncles 3-4-flowered; leaves clothed with close-pressed silky down, bipinnate, with linear lobules; petals roundish, longer than the calyx. ♃. H. Native of mount Parnassus, and probably of mount Olympus. E. absinthioìdes, Smith, fl. græc. t. 652. ex prod. 2. p. 34. A very distinct species, with yellow flowers.

Yellow-flowered Heron's-bill. Pl. ½ foot.

8 E. Roma'num (Willd. spec. 1. p. 630.) almost stemless; leaves pinnate, with ovate pinnatifid leaflets; peduncles many-flowered; petals equal, longer than the calyx. ♃. H. Native of Montpelier and Italy, by way-sides. Geràniun Romànum, Lin. spec. 951. Cav. diss. 4. t. 94. f. 2.—Barrel. icon. rar. t. 1245. Root thick, red within. Flowers purple. Resembles *E. cicutàrium*.

Roman Heron's-bill. Fl. May, June. Clt. 1724. Pl. ¾ foot.

9 E. caucalifòlium (Sweet, ger. t. 6.) stemless; peduncles many-flowered; leaves pinnate; leaflets alternate, on short stalks, pinnatifid, or deeply toothed; common petiole naked, hairy; petals ovate, obtuse, densely-ciliated at the base, twice the length of the calyx. ♃. H. Native of France. E. alpínum, Desf. hort. par. Root tuberous. Flowers rose-coloured, with a blue centre. Resembles *E. Romànum*.

Caucalus-leaved Heron's-bill. Fl. May, Oct. Clt. 1816. Pl. ½ foot.

10 E. cicutæfòlium (Thuil. fl. par. ed. 2. p. 347.) almost stemless; leaves pinnate, with sessile, oblong, bluntly-cut leaflets; rachis toothed between the leaflets; petals length of calyx, 2 of which are somewhat emarginate. ⊙. H. Native of France in dry exposed places. E. cicutàrium ε, cicutæfòlium, D. C. prod. 1. p. 647. Flowers pale-red or rose-coloured.

Cicuta-leaved Heron's-bill. Fl. Ap. Sept. Clt. 1816. Pl. ½ ft.

* * * *Stems prostrate or procumbent.*

11 E. cicuta'rium (Leman, ind. D. C. fl. fr. 4. p. 840.) stem procumbent, hairy; leaves pinnate, with sessile pinnatifid-cut leaflets; peduncles many-flowered; petals nearly regular. ⊙. H. Native throughout the whole of Europe, north of Africa, and the Levant, in waste ground, and among rubbish; plentiful in Britain; also about Conception in Chili. Smith, engl. bot. t. 1768. Geràniun cicutàrium, Lin. spec. 951. Curt. fl. lond. fasc. 1. t. 51. Petals rose-coloured, with 3 dark lines at the base, nearly regular. Awns of carpels smooth.

Var. β, álbum; stem prostrate, hairy; flowers white; petals unequal. ⊙. H. Native of Britain by the sea-side, in barren sandy places.

Var. γ, pimpinellæfòlium; flowers rose-coloured, with 2 or 3 of the petals marked with a green depression towards the claw, but this circumstance is extremely variable. ⊙. H. Native of England, near Hackney, about Oxford. On sandy ground near the sea, or on chalky ground.

Var. ε, chærophyllum (Cav. diss. 4. t. 95. f. 1.) plant many-stemmed, rather prostrate; leaflets finely pinnatifid; flowers pale-blue; petals rather unequal. ⊙. H. Native of Europe in dry stony places. Awns of carpels bearded.

Var. ζ, pilòsum (Thuil. fl. par. ed. 2. p. 347.) plant many-stemmed, rather prostrate, clothed with long hairs; leaflets finely pinnatifid; flowers deep-purple. ⊙. H. Native of Europe, in sandy places.

Hemlock Heron's-bill. Fl. June, Oct. Britain. Pl. prostrate.

12 E. pimpinellæfòlium (Cav. diss. 4. t. 126. f. 1.) stem decumbent, rather pilose, at length rather erect; leaves on long petioles, pinnate; leaflets sessile, pinnatifid, acutely-cut; peduncles many-flowered; petals hardly longer than the calyx. ♂. H. Native of France and Germany in barren places. Geràniun cicutàrium β, pimpinellæfòlium, D. C. prod. 1. p. 646. Flowers purple. This species is very like *E. cicutàrium*, but differs in the cotyledons being cordate, undivided, not 3-lobed, as well as the leaflets being broader at the base, and in the petals being smaller, or equal in length to the calyx, not longer.

Pimpernell-leaved Heron's-bill. Fl. June, Oct. Clt. 1800. Pl. decumbent.

13 E. bipinna'tum (Cav. diss. 5. t. 126. f. 3.) stem diffuse, decumbent, smooth; leaves pinnate, with deeply-bipinnatifid leaflets, divided into linear lobes; peduncles 2-flowered; petals unequal. ⊙. H. Native of Numidia in sandy places. G. Numídicum, Poir. barb. 2. p. 101. E. Petroselìnum, Lher. diss. no. 9. Geràniun Æthiópicum, Lam. dict. 2. p. 655. E. cicutàrium var. ζ, bipinnàtum, D. C. prod. 1. p. 647. Flowers rose-coloured. This species differs from *E. cicutàrium*, in the stems being smooth, as well as in the leaflets being divided into very narrow lobes.

Bipinnate-leaved Heron's-bill. Fl. June, Oct. Clt. 1803. Pl. decumbent.

14 E. hi'spidum (Presl. fl. cech. ex Spreng. syst. 3. p. .) stem prostrate, clothed with retrograde bristles; leaves bipinnatifid, hoary from pubescence on both surfaces; segments linear, acute; stipulas ovate, scarious; peduncles many-flowered; petals about equal in length with the calyx. ⊙ ? H. Native of Sicily. Geràniun laciniàtum, Biv. pl. sic. Flowers blue?

Hispid-stemmed Heron's-bill. Fl. June, July. Pl. prostrate.

15 E. moscha'tum (Willd. spec. 3. p. 631.) stem procumbent, hairy; leaves pinnate; leaflets nearly sessile, elliptical, unequally cut; peduncles many-flowered, clothed with glandular pubescence; perfect stamens toothed at the base. ⊙. H. Native of Europe, north of Africa, also of Peru, and at the Cape of Good Hope, in mountainous pastures. In Britain between Bristol and St. Vincent's rocks; very common in Craven, Yorkshire; on Shotover hill, near Oxford; on Ampthill Warren, Bedfordshire. Smith, engl. bot. t. 902. Geràniun moschàtum, Lin. spec. 951. Jacq. hort. vind. 1. t. 55. Cav. diss. t. 94. f. 1. This species is nearly akin to *E. cicutàrium*, but differing in the larger paler leaflets, much less deeply cut, and in the powerful musky smell, as well as the greater viscidity of the whole herbage. Flowers rose-coloured. There is a variety of this which is smooth, except the stem and ribs of the leaves, which are clothed with glandular pubescence.

Musky Heron's-bill. Fl. June, July. Britain. Pl. trailing.

16 E. lacinia'tum (Cav. diss. 4. p. 228. t. 113. f. 3.) plant smooth; stem prostrate, diffuse; leaves trifidly bipinnatifid; lobules linear, acute, lower leaves usually 3-lobed; stipulas and bracteas ovate, scarious; peduncles many-flowered. ⊙. H. Native of the south of Europe from Crete to Spain. Geràniun laciniàtum, Desf. atl. 2. p. 110. There are two varieties of this species. The first with the leaves all jagged. G. laciniàtum, Lher. ined. no. 15. The second with the lower leaves 3-lobed. G. diphýllum, Lher. ined. no. 18. Petals blue, a little longer than the calyx.

Jagged-leaved Heron's-bill. Fl. June, July. Clt. 1794. Pl. prostrate.

17 E. millefòlium (Willd. in H. B. et Kunth, nov. gen. amer. 5. p. 228.) stems procumbent, diffuse, hispid; leaves bi-

pinnatifid, with toothed, acuminated segments, hispid beneath; stipulas ovate; peduncles many-flowered. ⊙. H. Native of South America, at the bottom of the burning mountain of Cotopaxi. Flowers violet.

Thousand-leaved Heron's-bill. Fl. Ju. Jul. Pl. procumbent.

18 E. Morane'nse (Willd. in H. B. et Kunth, nov. gen. amer. 5. p. 228.) stems procumbent, hairy; leaves bipinnatifid, acute, hairy beneath; peduncles many-flowered. ⊙. H. Native of Mexico, near Moran. Flowers violet.

Moran Heron's-bill. Fl. June, July. Pl. procumbent.

* * * * *Stems erect, diffuse, or ascending.*

19 E. absinthoi'des (Willd. spec. 3. p. 627.) stem ascending; peduncles usually 4-flowered; leaves rather pubescent, bipinnate, with linear, acute lobules; rachis toothed; petals obtuse, emarginate, larger than the calyx. ♃. H. Native of Armenia.—Tourn. cor. 20. no. 5. Lher. ger. ined. no. 1. Stem simple. Root thick. Leaves resembling those of *Artemèsia absínthium*, hoary. Flowers purple?

Wormwood-like Heron's-bill. Pl. ½ foot.

20 E. fumarioi'des (Stev. mem. soc. mosc. 4. p. 49.) stem ascending; peduncles usually 4-flowered; leaves rather pubescent, bipinnate, with linear, obtuse leaflets; rachis toothed; petals emarginate, a little larger than the calyx. ♃. H. Native of Eastern Caucasus, by the sides of rivulets. Flowers violet-coloured, obscurely striped. This species is probably not sufficiently distinct from the preceding.

Fumitory-like Heron's-bill. Pl. ½ foot.

21 E. pulverule'ntum (Willd. spec. 3. p. 632.) stem decumbent at first, but at length becoming erect, hoary with crowded short down; peduncles many-flowered; petals obtuse, a little longer than the calyx; leaves pinnatifid, hoary, with cut or toothed segments. ♃. H. Native of Spain, on little sandy hills, between Aranjuez and Lake Antigola. Geràmium pulverulèntum, Cav. diss. 5. p. 272. t. 125. f. 1. E. pulveruléntum β, Hispánicum, D. C. prod. 1. p. 655. Flowers pale-violet. Peduncles 4-5-flowered.

Powdery Heron's-bill. Pl. ½ foot.

22 E. Tuneta'num; stem reclinately erect, hoary with crowded short down, as well as the leaves, which are bipinnate, with finely cut lobules; peduncles 7-8-flowered; petals obtuse, a little longer than the calyx. ♃. H. Native of North Africa, in sandy places near Cafsa. Geràmium pulveruléntum, Desf. atl. 2. p. 111. E. pulveruléntum, Lher. ined. no. 4. E. pulveruléntum α, Tunetànum, D. C. prod. 1. p. 645.

Tunis Heron's-bill. Pl. 1 foot.

23 E. anthemidifòlium (Bieb. fl. taur. 2. p. 131.) stems branched, diffuse; peduncles many-flowered, hispid from rather clammy, short down; leaves clothed with hoary pubescence, bipinnate, with linear lobules; rachis toothed; petals rather emarginate, longer than the calyx. ♃. H. Native of western Iberia. Flowers bluish.

Anthemis-leaved Heron's-bill. Fl. Ju. Jul. Clt. 1820. Pl. ½ ft.

24 E. Stephania'num (Willd. spec. 3. p. 625.) stem villous, branched; peduncles 2-5-flowered; leaves smoothish, bipinnatifid; lobes decurrent; lobules linear; petals obtuse, hardly longer than the long-pointed sepals. ♃. H. Native of Dahuria on hills, and in the desert of the Kirghises. Geràmium multífidum, Patr. ined. Flowers blue. Lower lobes of leaves almost palmate-parted.

Stephan's Heron's-bill. Fl. June, July. Clt. 1820. Pl. 1 to 2 feet.

25 E. alpi'num (Lher. ger. t. 3.) stem smoothish, branched; peduncles many-flowered; leaves smoothish, bipinnatifid; rachis toothed; lobules linear; petals obtuse, longer than the long-pointed sepals. ♃. H. Native of the mountains of Italy and Greece. Geràmium alpìnum, Burm. ger. no. 31. Cav. diss. 4. p. 229. t. 96. f. 1. Root tuberous. Flowers purple.

Alpine Heron's-bill. Fl. May, Aug. Clt. 1814. Pl. 1 foot.

26 E. Steve'ni (Bieb. fl. taur. 2. p. 132.) stem diffuse, rather hoary; peduncles usually 3-flowered; leaves smoothish, pinnate; leaflets bipinnatifid, alternate, entire, and trifid; petals obtuse, twice the length of the calyx. ♃. H. Native of Cape Caucasus. Flowers bluish. Segments of leaves linear.

Steven's Heron's-bill. Pl. ½ to 1 foot.

27 E. styla'tum (Leman, in herb. D. C. prod. 1. p. 646.) stem smoothish, diffuse; peduncles 3-4-flowered; leaves smooth, bipinnate; lobules linear; rachis entire; sepals and beaks of carpels downy; style very long. ♃. H. Native of? One of the petals is shorter than the calyx. This is a very distinct species, with the habit of *Grielum*. Flowers bluish-purple?

Long-styled Heron's-bill. Fl. June, July. Clt. 1826. Pl. ½ ft.

28 E. crassifòlium (Desf. atl. 2. p. 111.) stem branched, diffuse, puberulous; leaves thick, pinnately jagged, with linear lobules; peduncles 2-4-flowered; bracteas ovate, scarious; awns of carpels very long, feathery. ♃. H. Native of North Africa in sandy places near Cafsa. Sweet, ger. t. 111. Leaves smooth. Petals equal, rose-coloured or blue.

Var. β, *salinàrium* (Sibth. ined. in herb. Lher. D. C. prod. 1. p. 646.) leaves pubescent. ♃. H. Native of the Island of Cyprus, near the salt marshes of Arnaca. E. crassifòlium, Lher. ined. no 5. Flowers blue?

Thick-leaved Heron's-bill. Fl. Mar. Aug. Clt. 1788. Pl. ½ ft.

29 E. hírtum (Willd. spec. 3. p. 632.) stem branched, diffuse, villous; leaves hairy, somewhat bipinnate, with lanceolate, acute lobules; stipulas lanceolate; peduncles many-flowered, clothed with glandular hairs. ♃. H. Native of Egypt. Geràmium hírtum, Forsk. descr. 123. Jacq. eclog. 1. p. 85. t. 58. Root woody. Flowers violet.

Hairy Heron's-bill. Fl. June, July. Clt. 1818. Pl. ½ foot.

30 E. cicònium (Willd. spec. 3. p. 629.) stem ascending, and is as well as the leaves rather villous; leaves pinnate, with blunt pinnatifid, toothed leaflets; rachis toothed between the segments; peduncles many-flowered; petals length of calyx, 2 of which are rather emarginate. ⊙. H. Native in the region of the Mediterranean, in fields among rubbish. Geràmium cicònium, Lin. spec. 952. Jacq. hort. vind. 1. p. 7. t. 18. Cav. diss. 4. p. 228. t. 95. f. 2.—Colum. ecphr. 1. p. 136. t. 135. Flowers blue. Sepals with long points.

Var. β, *eréctum* (D. C. prod. 1. p. 464.) stem erect. ⊙. H. Native of Tauria.

Stork's Heron's-bill. Fl. June, Jul. Clt. 1711. Pl. 1 foot.

31 E. tordylioìdes (Lher. ined. no. 14. D. C. prod. 1. p. 647.) caulescent, but sometimes almost stemless; leaves villous, pinnate, with ovate lobed, sharply toothed leaflets; peduncles many-flowered, very long. ♃. H. Native of Algiers in the fissures of rocks. Geràmium tordylioìdes, Desf. atl. 2. p. 107. Calyxes striated, awned. Petals pale-blue.

Tordylium-like Heron's-bill. Pl. 1 foot.

32 E. bòtrys (Bert. amœn. itin. p. 35.) stem hispid from rather trigonal bristles; leaves sinuately-pinnatifid; lobes blunt, toothed; peduncles 2-4-flowered; calyx pubescent, with short-pointed sepals. ⊙. H. Native of the south of Italy, Corsica, and Mauritania. E. gruìnum β, Willd. spec. 3. p. 634. Geràmium bòtrys, Cav. diss. 4. t. 90. f. 2.—Bocc. mus. 2. p. 145. t. 109. Stems diffuse and erect. Leaves more or less cut. Bristles on the lower part of the stem reflexed. Flowers blush.

Grape Heron's-bill. Fl. June, July. Clt. 1818. Pl. ½ ft.

§ 2. *Leaves somewhat 3-lobed or undivided.*

* *Stems diffuse or erect.*

33 E. Murcìnum (Willd. spec. 3. p. 636.) stems diffuse,

smooth, branched; leaves pinnatifid, somewhat 3-parted, lobes blunt, crenated, middle one longest; peduncles many-flowered; calyxes streaked with lines. ⊙. H. Native of Spain in the province of Murcia and of the north of Africa. Geràmium Murcìnum, Cav. diss. 5. t. 126. f. 1. Resembles *E. bòtrys*. Flowers purple. Plant rather hoary.

Murcia Heron's-bill. Fl. June, Jul. Clt. 1818. Pl. ½ foot.

34 E. gruìnum (Willd. spec. 3. p. 633. exclusive of var. β.) stem erect, pilose; leaves ternate, with deeply-toothed leaflets, lower ones divaricating, middle one longest; peduncles many-flowered; calyxes streaked with nerves. ⊙. H. Native of Crete, North of Africa, and Spain. Geràmium gruìnum, Lin. spec. 952. Cav. diss. 4. p. 217. t. 88. f. 2.—Bocc. mus. 2. p. 145. t, 109. Lower leaves cordate. Flowers bluish-purple.

Crane Heron's-bill. Fl. Ju. Jul. Clt. 1596. Pl. ½ to 1 ft.

35 E. serótinum (Stev. mem. act. petersb. 3. p. 297. t. 15. f. 2.) stems diffuse; leaves opposite, ternate, lateral leaflets deeply toothed, divaricating, middle one largest, somewhat lobed, deeply toothed; peduncles many-flowered. 4. H. Native of fields at the Black Sea and at Tyra. E. Ruthénicum, Bieb. pl. rar. cent. t. 48. E. multicaúle, Link. enum. 2. p. 184. Sweet, ger. t. 137. Flowers purplish-blue. Sepals with long awns.

Late-flowering Heron's-bill. Fl. Jul. Sept. Clt. 1821. Pl. 1 ft.

36 E. Chíum (Willd. spec. 3. p. 634.) stem erect and somewhat diffuse; leaves smooth, rather cordate, lobed, upper ones 3-parted; lobes deeply toothed, middle one rather trifid; stipulas and bracteas ovate-lanceolate; peduncles many-flowered. ⊙. H. Native of the islands in the Grecian Archipelago, and about Naples. Geràmium Chíum, Lin. spec. 951. Cav. diss. 4. p. 92. f. 1. Flowers purplish-blue.

Chio Heron's-bill. Fl. May, July. Clt. 1724. Pl. ½ to 1 ft.

37 E. Gussòni (Tenore, prod. 39. Sweet, ger. 200.) stem diffuse, beset with long, soft, retrograde hairs; peduncles many-flowered, elongated; leaves cordate, entire, and lobed, dentately-crenated, pubescent; stipulas and bracteas scarious, ovate; sepals awned, one-half shorter than the petals. 4. H. Native of Naples in meadows exposed to the sun. Flowers pale-purple, 2 upper petals with a dark patch at the base.

Gusson's Heron's-bill. Fl. year. Clt. 1821. Pl. ½ to 1 ft.

38 E. malachoìdes (Willd. spec. 3. p. 639.) stem herbaceous, branched, hairy; leaves cordate, undivided or 3-lobed, obtuse, toothed; peduncles many-flowered; petals length of calyx. ⊙. H. Native of the south of Europe and north of Africa, as well as in the Canary Islands. Geràmium malachoìdes, Cav. diss. 4. t. 91. f. 1.—Mor. hist. 2. sect. 5. t. 15. f. 7.—Lob. icon. t. 662. Flowers blue.

Var. β, ribifòlium (Jacq. icon. rar. 3. t. 509.) leaves 3-lobed, hispid; flowers purple. ⊙. H. Native of the Cape of Good Hope.

Mallow-like Heron's-bill. Clt. 1596. Pl. procumbent.

39 E. glaucophy'llum (Ait. hort. kew. ed. 1. vol. 2. p. 416.) stem erect, pubescent; leaves rather pubescent, oblong, somewhat lobed, crenated, rather fleshy; peduncles 2-6-flowered; awns of seeds from the middle to the top feathery, yellow. 4. H. Native of Egypt, near Memphis. Sweet, ger. 283. Geràmium glaucophýllum, Lin. spec. 952. Cav. diss. 4. t. 92. f. 2. G. crassifòlium, Forsk. descr. 123.—Dill. elth. 150. t. 124. f. 153. Flowers lilac, but of a deeper colour at the base. Petals equal.

Glaucous-leaved Heron's-bill. Fl. July, Aug. Clt. 1732. Pl. ¼ to ¾ foot.

40 E. nervulòsum (Lher. ined. no. 24. D. C. prod. 1. p. 648.) stem diffuse, short; leaves cordate, undivided, toothed, thick, full of nerves, rather hoary from pubescence; stipulas ovate, membranous; peduncles many-flowered. 4. H. Native of Sicily.—Bocc. mus. 2. t. 128. right hand figure. Resembles *E. laciniàtum*. Flowers purple.

Nerved-leaved Heron's-bill. Pl. ½ foot.

41 E. malopoìdes (Willd. spec. 3. p. 640.) stem erect, sometimes almost stemless; leaves ovate, somewhat cordate, crenated, sometimes rather lobed; peduncles 3-4-flowered; awns of carpels bearded. 4. H. Native of Egypt, Algiers, and Sicily, in sand by the sea-side. Geràmium malopoìdes, Cav. diss. 4. t. 90. f. 1.—Bocc. mus. 2. p. 109. t. 89. Flowers small, pale rose-coloured. The whole plant is clothed with velvety pubescence.

Var. β, Córsicum (Leman, in D. C. fl. fr. 4. p. 842.) peduncles usually 2-flowered; leaves more downy. 4. H. Native of Corsica among rocks by the sea-side. Flowers small, pale rose-coloured. The stems of both these plants are said by authors to be weak and trailing.

Malope-like Heron's-bill. Fl. June, Jul. Clt. 1810. Pl. ½ ft.

* * *Stems prostrate.*

42 E. mari'timum (Smith, fl. brit. 2. p. 728.) stems diffusely prostrate, hairy; leaves cordate, ovate, deeply crenated, pubescent; peduncles usually 2-flowered; awns of seeds beardless. 4. H. Native of France and Britain by the sea-side; in England particularly on the coasts of Wales, Cornwall, Sussex, &c. Smith, engl. bot. t. 646. Geràmium marítimum, Lin. spec. 951. Cav. diss. 4. p. 218. t. 88. f. 1. Stems spreading close to the ground. Leaves roundish, slightly lobed, and variously notched, rough on both surfaces, with minute close hairs. Stipulas purplish. Peduncles 1-2, rarely 3-flowered. Flowers pale-red, very minute.

Sea-side Heron's-bill. Fl. May, Sept. Brit. Pl. trailing.

43 E. littòreum (Leman, in D. C. fl. fr. 4. p. 842.) stems prostrate, smoothish; leaves roundish-cordate, 3-lobed, unequally crenated; peduncles many-flowered, elongated; awns of carpels bearded. 4. H. Native of Narbonne and Liguria by the sea-side. Flowers pale-red. Resembles *E. marítimum*.

Sea-shore Heron's-bill. Fl. May, Sept. Clt. 1818. Pl. prostrate.

44 E. cunea'tum (Viv. append. fl. cors. in Schlecht. Linnæa. 1. p. 506.) branches diffuse; leaves ovate, somewhat cordate, sinuately 3-parted, lateral segments rectangular, spreading, oblong, middle one longer and wedge-shaped, crenately toothed at the top; lower peduncles 1-flowered, upper ones umbellate; corolla a little longer than the awned calyx. 4. H. Native of Corsica. Stems diffusely-prostrate.

Wedge-leaved Heron's-bill. Pl. prostrate.

45 E. Boccòni (Viv. append. fl. cors. ex Schlecht. Linnæa. 1. p. 506.) plant dwarf, tufted; stems prostrate, hairy; leaves ovate, cordate, deeply crenated, obovate; stipulas and bracteas lanceolate; peduncles 2-flowered; petals hardly the length of the calyx; sepals mucronate; carpels hairy, with smooth awns. 4. H. Native of Corsica on the mountains. Geràmium minimum. Chamædryoìdes, Bocc. mus. 2. p. 160. t. 128. Flowers nearly white. Plant very small, almost stemless, but, according to Saltzman, the stems are sometimes a foot long.

Bocconi's Heron's-bill. Fl. May, Sept. Pl. trailing.

46 E. oxyrhínchum (Bieb. fl. taur. 2. p. 133.) stem prostrate; leaves cordate, oblong, somewhat 3-parted, crenated, hoary beneath, middle lobe trifid; peduncles usually 3-flowered. 4. H. Native of Eastern Iberia on dry hills. Flowers as large as those of *E. cicutàrium*, with oblong purple petals.

Sharp-beaked Heron's-bill. Pl. prostrate.

47 E. gutta'tum (Willd. spec. 3. p. 636.) stem prostrate; leaves cordate, oblong, somewhat 3-lobed, toothed, hoary; peduncles usually 3-flowered; calyxes long awned. 4. F. Native of the north of Africa, near Belida, among sand. Geràmium guttàtum, Desf. atl. 2. p. 113. t. 169. Petals large, obtuse, violet, spotted at the base.

Spotted-petalled Heron's-bill. Pl. prostrate.

48 E. geoìdes (St. Hil. fl. bras. 1. p. 99. t. 19.) stem herbaceous, prostrate, hairy; leaves pinnate; leaflets 5-7, ovate, roundish, deeply toothed, 2 lower ones free, sessile, the rest confluent; stipulas ovate, triangular; peduncles 4-6-flowered. ⊙. H. Native of Brazil at the river Plate. Flowers purple.

Geum-like Heron's-bill. Pl. prostrate.

* * * *Stemless, or almost so.*

49 E. asplenioìdes (Willd. spec. 3. p. 635.) plant villously pubescent, stemless; peduncles many-flowered; leaves ternate; leaflets obovate, obtuse, deeply toothed, terminal one somewhat lobed. 4. F. Native of the north of Africa on the mountains of Sbiba. Geràniumasplenioìdes, Desf. atl. 2. p. 109. t. 168. E. múticum, Lher. ined. Root thick. Corolla purplish-violet, twice the length of awnless calyx.

Spleen-wort-like Heron's-bill. Pl. $\frac{1}{4}$ foot.

50 E. Arduìnum (Willd. spec. 3. p. 637.) stemless; leaves cordate, 5-lobed, crenated, blunt; peduncles many-flowered. 4. G. Native of the Cape of Good Hope. Geràniumarduìnum, Lin. spec. 952. Flowers?

Arduin's Heron's-bill. Pl. $\frac{1}{4}$ foot.

51 E. Reicha'rdi (D. C. prod. 1. p. 649.) plant almost stemless, tufted; leaves small, cordate, crenated, obtuse, smoothish; peduncles 1-flowered; petals larger than the calyx. 4. H. Native of Majorca. Geràniumreichárdi, Murr. comm. goett. 1780. p. 11. t. 3. G. párvulum, Scop. ins. 8. t. 3. f. B. E. chamædryoìdes, Lher. ger. t. 6. exclusive of the synonyme of Bocconi. Curt. bot. mag. t. 18. Flowers white.

Reichard's Heron's-bill. Fl. Apr. Sep. Clt. 1783. Pl. $\frac{1}{8}$ ft.

* * * * *Stems suffruticose.*

52 E. hymenoìdes (Lher. ger. t. 4.) stem erect, branched, shrubby at the base; branches clothed with long soft hairs; peduncles many-flowered; leaves somewhat 3-lobed or 3-parted, very blunt, deeply toothed; stipulas and bracteas scarious, ovate; calyxes awnless. ♄. G. Native on Mount Atlas in fissures of rocks. Sweet, ger. t. 23. Geràniumgeifòlium, Desf. atl. 2. p. 108. G. trifòlium, Cav. diss. 4. t. 97. f. 3. E. trilobàtum, Jacq. icon. rar. 3. t. 508. Flowers pink; upper petals with a reddish-brown spot at the base.

Hymen-like Heron's-bill. Fl. year. Clt. 1789. Sh. 1 foot.

53 E. arbore'scens (Willd. spec. 3. p. 638.) stem shrubby, erect; leaves on long footstalks, cordate, somewhat lobed, crenated; stipulas ovate, rather acute; peduncles many-flowered. ♄. F. Native of the north of Africa on mountains at Cafsa. Geràniumarboréscens, Desf. atl. 2. p. 110. At first sight this plant resembles a species of *Pelargònium*. Flowers unknown.

Arborescent Heron's-bill. Shrub 3 to 4 feet.

54 E. incarna'tum (Lher. ger. t. 5.) stem suffruticose, scabrous; leaves scabrous, lower ones cordate, toothed, 3-parted, ternate or 5-lobed, with wedge-shaped, 3-toothed lobes; peduncles many-flowered. ♄. G. Native of the Cape of Good Hope. Sims, bot. mag. t. 261. Sweet, ger. t. 94. Delaum. herb. amat. t. 11. Geràniumincarnàtum, Lin. fil. suppl. 308. Cav. diss. 4. p. 223. t. 91. f. 2. Flowers large, very beautiful, with oblong, obtuse, flesh-coloured petals, yellowish at their base, and painted with a blood-coloured circle.

Flesh-coloured-flowered Heron's-bill. Fl. May, July. Clt. 1787. Shrub $\frac{3}{4}$ foot.

55 E. heliotropioìdes (Willd. spec. 3. p. 638.) stem suffruticose, hispid; leaves roundish-ovate, crenated, villous; peduncles many-flowered; awns of carpels very long, feathery. ♄. G. Native of? Geràniumheliotropioìdes, Cav. diss. 4. p. 220. t. 113. f. 2. Stem hardly an inch in height. Leaves clothed with dense white villi. Peduncles usually 4-flowered. Flowers?

Turnsole-like Heron's-bill. Shrub $\frac{1}{8}$ foot.

Cult. Most of the perennial species of *Eròdium* are rather ornamental, and they will thrive well in any kind of soil. The frame kinds will grow well in a mixture of loam and peat or decayed leaves; these are easily increased by dividing the plants at the root or by seeds, which ripen in abundance. The greenhouse species are mostly sub-shrubby; they will thrive well in sandy loam and leaf mould, and young cuttings, planted in pots filled with the same kind of soil, will strike root; they are also easily increased by dividing the plants at the root or by seed. The annual kinds, several of which are rather handsome, only require to be sown in the open border in spring, in any kind of soil.

VI. PELARGO'NIUM (from πελαργος, *pelargos*, a stork; resemblance in the carpels being like the head and beak of a stork). Lher. ger. icon. et text. ined. Ait. hort. kew. 2. p. 417. Pelargonièæ, Sweet. ger. 1. p. 8.

Lin. syst. *Monadélphia, Tetra-Heptándria.* Calyx 5-parted; upper segments ending in a spur, or slender nectariferous tube, running down the peduncle, and adnate to it. Petals 5, rarely 4, more or less irregular. Filaments 10, 4 or 7 of which are fertile, the rest sterile. Beaks or styles bearded inside, and spirally twisted at maturity. All the proper species of this genus are natives of the Cape of Good Hope, except a very few. This vast and favorite genus, the greater part being of the easiest cultivation, and many of them bearing the confined air of a sitting room better than most plants, have therefore become objects of cultivation and attention, of which, in most cases, they are deserving for their neatness and beauty. The popular taste for *Pelargòniums*, or for *Geràniums* as they are commonly called, has been much aided by several splendid publications, both at home and abroad, and more especially by the Geraniaceæ of Mr. Sweet, in which he has figured both hybrids and species; but these hybrids, for the most part, vanish even before the eyes of those who have witnessed their origin, we shall therefore only describe the species, and give the names and references to the hybrids, for the convenience of those who wish to be farther acquainted with these productions; for to admit descriptions of them into this work could lead to no end, except that of swelling its bulk, which would be very considerable. In the arrangement here adopted, the names of all those kinds which are avowedly artificial are placed at the end of their proper sections.

Sect. I. Hoa'rea (named in compliment to Sir Richard Hoare). Sweet, ger. no. 18 and 72. Petals 5, rarely 4, lanceolate or linear, 2 upper ones parallel, with long claws, abruptly reflexed in the middle. Stamens 10, in a long tube, length of lower sepals, 4-5 of which bear anthers, the rest sterile, straight, or incurved at the top, shorter than the fertile ones.—Stemless herbs, with tuberous, turnip-like roots, and radical stalked leaves.

* *Leaves oblong, entire, or lobed, with the lobes entire or hardly toothed.*

1 P. longifòlium (Jacq. icon. rar. 3. t. 518.) leaves lanceolate, quite entire, acute, smooth, older ones pinnatifid, with linear lobes; umbels compound; flowers tetrandrous; petals obtuse, lanceolate, upper ones ovate. 4. G. G. acaûle, Burm. ger. 67. t. 2. Cav. diss. 4. t. 102. f. 1. Petals rose-coloured.

Long-leaved Stork's-bill. Fl. May, June. Clt. 1812. Pl. $\frac{1}{2}$ ft.

2 P. longiflòrum (Jacq. icon. rar. 3. t. 521.) leaves lanceolate, quite entire, acute, smooth; umbels compound, 4-flowered; flowers tetrandrous; petals linear. 4. G. Petals cream-coloured, upper ones lined with red.

Var. β, depréssum (Jacq. icon. rar. 3. t. 520.) umbels 8-flowered; pedicels at length somewhat reflexed; filaments 9.

4. G. Petals cream-coloured, upper ones marked with purple lines.

Long-flowered Stork's-bill. Fl. May, Aug. Clt. 1812. Pl. ½ ft.

3 P. ovalifòlium (D. C. prod. 1. p. 649.) leaves oval, or oval-oblong, obtuse, flat, with involute margins, quite entire, hairy; umbels simple or compound; petals linear, waved, twisted. 4. G. Hoárea ovalifòlia, Sweet. ger. t. 106. Petals white, 2 upper ones with a pale-red line in the middle at the base.

Oval-leaved Stork's-bill. Fl. May, Aug. Clt. 1820. Pl. ½ ft.

4 P. reticula'tum (Sweet, ger. t. 91. under *Hoárea*,) leaves elliptic-lanceolate, or oblong, quite entire, pilose, with revolute margins; umbels compound; flowers pentandrous; petals linear-spatulate, waved, reflexed. 4. G. P. scapiflòrum, Lher. ger. ined. no. 8. Petals rose-coloured, reticulated, with purple lines, 2 upper ones with a deep-purple spot in the middle of each.

Reticulated-petalled Stork's-bill. Fl. May, Aug. Clt. 1820. Pl. ½ foot.

5 P. parnassioìdes (Lher. ger. ined. no. 1.) leaves ovate, obtuse, quite entire, ciliated; umbel compound; flowers pentandrous; petals linear, rather spatulate. 4. G. G. ciliàtum, Cav. diss. 4. p. 234. t. 118. f. 2. P. ciliàtum, Willd. spec. 3. p. 643. exclusive of the synonyme of Lher. Petals pale, spotless.

Parnassia-like Stork's-bill. Pl. ½ foot.

6 P. cilia'tum (Lher. ger. t. 7. ined. no. 2.) leaves ovate, acute, quite entire, rather ciliated; umbels compound; flowers pentandrous; petals linear, rather spatulate. 4. G. Petals flesh-coloured, 2 upper with a red spot in the middle.

Var. β, hírtum (Willd. spec. 3. p. 644.) leaves somewhat 3-lobed. 4. G. G. pilòsum, Cav. diss. 5. p. 273. 6. p. 199. Leaves, according to L'Heretier, painted; perhaps a garden variety.

Ciliated-leaved Stork's-bill. Fl. May, Aug. Clt. 1795. Pl. ½ foot.

7 P. labyrínthicum (Sweet, ger. 276. under *Hoárea*,) hoary, pilose; lower leaves simple, ovate, or ternate, upper ones pinnatifid; leaflets and segments oblong-ovate; scape branched; calyx reflexed. 4. G. Petals rose-coloured, 2 upper ones marked with a dark spot near the base.

Labyrinth Stork's-bill. Fl. May. Clt. 1823. Pl. ½ foot.

8 P. radica'tum (Vent. malm. t. 65.) leaves oval-oblong, quite entire, acute at both ends, smooth, ciliated; umbels simple; flowers pentandrous; petals linear-oblong, retuse; nectariferous tube 4 times longer than the calyx. 4. G. Geràniùm ciliàtum, Andr. bot. rep. 247. P. concavifòlium, Pers. ench. 2. p. 226. Hoárea radicàta, Sweet, ger. 174. Petals yellowish.

Large-rooted Stork's-bill. Fl. May, Aug. Clt. 1802. Pl. ½ ft.

* * *Leaves cordate, sagittate, 3-lobed, or appendiculate at the base.*

9 P. oxaloìdes (Willd. spec. 3. p. 642.) leaves oblong, sagittate, quite entire, fleshy, smooth; umbel compound. 4. G. Geràniùm oxaloìdes, Burm. ger. 71. t. 2. Cav. diss. 4. t. 97. f. 1. G. oxaloìdes, Andr. is perhaps distinct. Flowers red.

Oxalis-like Stork's-bill. Pl. ½ foot.

10 P. chelidònium (Houtt. pfl. syst. 8. p. 398. t. 61. f. 1.) leaves roundish, truncate at the base, acute, quite entire, pubescent; umbel compound. 4. G. P. Ficària, Willd. spec. 3. p. 643. P. deltoìdeum, Lher. ined. no. 111.

Swallow-wort-like Stork's-bill. Pl. ½ foot.

11 P. velutìnum (Lher. ger. ined. no. 82.) leaves cordate, very blunt, undivided, crenately-sinuated, hoary-tomentose beneath; umbels compound. 4. G. Burch, cat. no. 2828. Petals linear, when dry waved and of a dark colour.

Velvety Stork's-bill. Pl. ½ foot.

12 P. bifòlium (Willd. spec. 3. p. 645.) leaves 2, cordate, acutish, deeply toothed; umbels simple. 4. G. Burm. afr. t. 35. f. 1. Geràniùm bifòlium, Cav. diss. 4. p. 254. t. 115. f. 3. Petals pale-red, oblong-cuneated, 2 superior ones marked with an oblong spot.

Two-leaved Stork's-bill. Pl. ½ foot.

13 P. stipula'ceum (Willd. spec. 3. p. 655.) stem very short, covered with the rudiments of the old stipulas; leaves rather cordate, ovate, deeply toothed, villous; umbels simple, few-flowered. 4. G. G. stipulàceum, Cav. diss. 4. p. 254. t. 122. f. 3. Perhaps the flowers are pentandrous, and therefore perhaps belonging to sect. *Campýlia*. Petals yellowish.

Stipuled-stemmed Stork's-bill. Pl. ½ foot.

14 P. articula'tum (Willd. spec. 3. p. 655.) stem very short, covered with the rudiments of the stipulas; leaves kidney-shaped, 5-7-lobed, villous; lobes 3-lobed; umbels simple, few-flowered. 4. G. G. articulàtum, Cav. diss. 4. p. 252. t. 122. f. 1. This plant comes very near the preceding, but the number of anthers is unknown. Probably belonging to a different section. Flowers yellowish.

Jointed Stork's-bill. Fl. May, July. Pl. ½ foot.

15 P. auricula'tum (Willd. spec. 3. p. 643.) leaves oblong-lanceolate, acuminated at both ends, hairy, with ciliated margins, sometimes entire, but usually furnished with 2 oblong-linear appendages at the base; umbels compound. 4. G. P. ciliàtum, Jacq. icon. rar. 3. t. 519. Petals linear, pale-red.

Auricled-leaved Stork's-bill. Fl. May, July. Clt.? Pl. ½ ft.

16 P. auri'tum (Willd. spec. 3. p. 646.) leaves oblong, obtuse, sometimes entire, but usually furnished with 2 oblong-linear appendages at the base; umbel rather compound. 4. G. Geràniùm auritum, Lin. mant. 433.—Comm. hort. 2. t. 61. Flowers, in a dry state, apparently purplish-red.

Eared-leaved Stork's-bill. Pl. ½ foot.

17 P. trífidum (Willd. spec. 3. p. 646.) leaves 3-parted; with the segments linear, wedge-shaped, and 3-toothed at the apex; umbel simple. 4. G. Burm. afr. t. 35. f. 2. G. trífidum, Cav. diss. 4. t. 115. f. 1. Flowers blood-coloured.

Trifid-leaved Stork's-bill. Pl. ½ foot.

18 P. lacinia'tum (Pers. ench. 2. p. 228.) leaves entire or deeply lobed at the apex; scape flexuous; umbel compound. 4. G. G. laciniàtum, Andr. bot. rep. 131. Petals pink.

Jagged-leaved Stork's-bill. Fl. Ju. Jul. Clt. 1800. Pl. ½ ft.

19 P. nervifòlium (Jacq. icon. rar. 3. t. 517.) leaves smooth, ternate, glaucous beneath, with rather lobed, nerved, obtuse leaflets; scape hispid; umbels compound. 4. G. Petals oblong-cuneated, white, painted with branched, blood-coloured lines at the base.

Nerved-leaved Stork's-bill. Fl. May, Aug. Clt. 1812. Pl. ½ ft.

20 P. triphy'llum (Jacq. icon. rar. 3. t. 515.) leaves smooth, ternate, with obtuse, crenated leaflets; scapes and petioles pubescent; umbels simple. 4. G. Petals linear, flesh-coloured, 2 superior ones with blood-coloured spots at the base.

Three-leaved Stork's-bill. Fl. May, Aug. Clt. 1812. Pl. ½ ft.

21 P. lu'teum (Andr. bot. rep. 423. under *Geràniùm*,) smooth; leaves pinnate; leaflets usually with a lobe on one side; umbels simple, many-flowered; petals all spatulately-linear. 4. G. Petals yellow, 2 upper ones with 2 red streaks at the base.

Yellow-flowered Stork's-bill. Fl. May, Aug. Clt. 1800. Pl. ½ foot.

22 P. ròseum (Ait. hort. kew. ed. 2. vol. 4. p. 161.) stemless; leaves lobed and jagged, obtuse, toothed, tomentose; scape simple, very long; umbels many-flowered; lower petals much the smallest; nectariferous tube 4-times longer than the reflexed calyx. 4. G. Petals of a bright rose-colour. Ger. ròseum, Andr. bot. rep. t. 173. P. condensàtum, Pers. ench. 2. p. 227. Hoárea ròsea, Sweet, ger. 262.

Rose-coloured-flowered Stork's-bill. Fl. May, Aug. Clt. 1792. Pl. 1 foot.

* * * *Leaves pinnate, with the leaflets cut or multifid.*

23 P. RAPA'CEUM (Jacq. icon. rar. 3. t. 510.) leaves pilose, bipinnate; lobules linear, rather obtuse; 2 superior petals refracted, 2 inferior ones connivent. ♃. G. Ger. selìnum, Andr. bot. rep. 239. Petals of a whitish rose-colour, 2 upper ones spotted.

Turnip-rooted Stork's-bill. Fl. May, Jul. Clt. 1788. Pl. ½ ft.

24 P. NU'TANS (D. C. prod. 1. p. 651.) leaves bipinnate, hairy; leaflets pinnatifidly jagged, multifid, linear, rather toothed; umbels capitate, crowded, depressed; flowers nodding; superior petals refracted, inferior ones concave, connivent. ♃. G. P. rapàceum lùteum, Sims. bot. mag. 1877. Hoárea carinàta, Sweet. ger. t. 135. Flowers yellow.

Nodding-flowered Stork's-bill. Fl. May, July. Clt. 1788. Pl. ½ foot.

25 P. CORYDALIFLÒRUM (Sweet, ger. t. 18. under *Hoárea*,) leaves pilose, pinnate; leaflets pinnatifid or trifid; lobules linear, acute; 2 superior petals refracted, lower ones connivent. ♃. G. Petals pale sulphur-coloured, 2 upper ones with blood-coloured spots.

Corydalis-flowered Stork's-bill. Fl. May, Aug. Clt. 1812. Pl. ½ foot.

26 P. SETÒSUM (Sweet, ger. t. 38. under *Hoárea*,) leaves pinnate, pubescent; leaflets cuneated, 3-5-toothed at the apex, with the teeth ending in bristles; umbels compound; superior petals refracted, lower ones rather connivent. ♃. G. Petals rose-coloured, 2 superior ones spotted.

Bristly-leaved Stork's-bill. Fl. May, Aug. Clt. 1818. Pl. ½ ft.

27 P. BUBONIFÒLIUM (Pers. ench. 2. p. 227.) leaves smooth, pinnate; leaflets deeply lobed, acute; umbel simple; petals emarginate. ♃. G. Ger. bubonifòlium, Andr. bot. rep. 328. Petals white, 2 upper ones with a purple spot each.

Bubon-leaved Stork's-bill. Fl. Mar. Jul. Clt. 1800. Pl. ½ ft.

28 P. VIOLÆFLÒRUM (Sweet, ger. 123. under *Hoárea*,) stem short; leaves pinnate-parted, or trifoliate; leaflets oblong-lanceolate, smooth, entire, with ciliated margins, acuminated, and beset with pencilled hairs at the apex, lower ones bifid; petioles hispid; umbels compound; petals reflexed, lower ones smallest. ♃. G. Flowers white. Superior lobes of calyx erect, the rest reflexed.

Violet-flowered Stork's-bill. Fl. May, Aug. Clt. 1821. Pl. ½ ft.

29 P. LEEA'NUM (Sweet, ger. 323. under *Hoárea*,) leaves smooth, pinnate; leaflets pinnatifidly cut, acute; petioles pubescent; stipulas linear, acute, membranous, adhering to the petioles; umbel compound, of several flowers; superior petals obovate, retuse; calyxes spreading, bearded at the apex; nectariferous tube about half as long again as the calyx. ♃. G. Petals white, with a purple spot in the centre of each.

Lee's Stork's-bill. Fl. May, Aug. Clt. 1823. Pl. ½ foot.

30 P. NI'VEUM (Sweet, ger. 182. under *Hoárea*,) stemless; umbels compound; leaves smooth, lower ones ovate, entire, upper ones pinnatifid; petals white, reflexed, lower ones much the smallest. ♃. G.

Snowy-flowered Stork's-bill. Fl. May, Aug. Clt. 1821. Pl. ½ foot.

31 P. PILÒSUM (Pers. ench. 2. p. 227.) leaves pinnate, hairy; leaflets cut or multifid; umbel simple, 4-6-flowered; petals linear. ♃. G. Ger. pilòsum, Andr. bot. rep. 259. Petals purple.

Pilose Stork's-bill. Fl. May, Jul. Clt. 1801. Pl. ½ foot.

32 P. BICOLOR (Sweet, hort. brit. p. 76. under *Hoárea*,) pilose; leaves pinnate; leaflets oblong, or obovately-oblong, sometimes slightly 2-3-lobed; umbels many-flowered; upper petals emarginate, 3 lower ones small; nectariferous tube about 3-times longer than the calyx. ♃. G. Ger. pilòsum, var. 2. Andr. ger. icon. Petals red with white claws, upper ones marked with a red spot just under the red part of the petals.

Two-coloured-flowered Stork's-bill. Fl. Feb. Aug. Clt. 1801. Pl. ½ foot.

33 P. BLA'NDUM (Sweet, hort. brit. 76. under *Hoárea*,) pilose; leaves pinnate; leaflets obovately-oblong, sometimes slightly 3-lobed; umbels many-flowered; nectariferous tube 3-times longer than the calyx; petals all wedge-shaped, upper ones emarginate, lower ones narrower. ♃. G. Flowers blush.

Blush-flowered Stork's-bill. Fl. Feb. Aug. Clt. 1801. Pl. ½ ft.

34 P. PENNIFÓRME (Pers. ench. 2. p. 227.) leaves pinnate-parted, with lanceolate-linear, entire segments; umbels compound. ♃. G. Ger. laciniàtum, Andr. bot. rep. 269. Petals yellow, red at the base. Radical leaves sometimes entire.

Feather-formed-leaved Stork's-bill. Fl. May, July. Clt. 1800. Pl. ½ foot.

35 P. PURPURA'SCENS (Pers. ench. 2. p. 227.) leaves lanceolate-linear, entire, and pinnatifid; umbel compound. ♃. G. Ger. laciniàtum, Andr. bot. rep. 204. Peduncles elongated. Flowers purplish, with darker stripes.

Purplish-flowered Stork's-bill. Fl. May, Jul. Clt. 1800. Pl. ½ ft.

36 P. INCRASSA'TUM (Sims, bot. mag. t. 761.) leaves pinnatifid, with lobed, obtuse segments; scape a little branched; superior petals obcordate. ♃. G. Ger. incrassàtum, Andr. bot. rep. t. 246. Flowers pale rose-coloured, netted with red veins.

Thickened Stork's-bill. Fl. June, July. Clt. 1801. Pl. ½ ft.

37 P. CENTAUROÌDES (Lher. ger. ined. no. 12.) leaves hairy, pinnate-parted, with remote, cut, or entire segments; umbel simple, crowded, many-flowered. ♃. G. Pedicels elongated and the flowers purplish, as in the preceding.

Centauria-like Stork's-bill. Pl. ½ foot.

38 P. HIRSU'TUM (Ait. hort. kew. ed. 1. vol. 2. p. 417.) leaves hairy, ciliated, obovate or lanceolate, quite entire or pinnatifid; stipulas adnate to the petioles; umbels compound. ♃. G. Ger. hirsùtum, Cav. diss. 4. p. 247. t. 101. f. 2. P. heterophýllum, Lher. ger. ined. no. 10. Petals pale-flesh-coloured, marked with blood-coloured veins, upper ones marked with a large dark-red spot each.

Hairy Stork's-bill. Fl. Mar. May. Clt. 1788. Pl. ½ foot.

39 P. MELANA'NTHUM (Jacq. icon. rar. 3. t. 514.) leaves hairy, pinnate-parted, with oval-oblong, obtuse, somewhat pinnatifid or toothed segments; umbels compound; petals linear, obtuse. ♃. G. Hoárea melanántha, Sweet, ger. 73. The first leaves ovate, or 3-lobed. Petals dark-brown; claws white.

Black-flowered Stork's-bill. Fl. May, Aug. Clt. 1790. Pl. ½ ft.

40 P. DIOI'CUM (Ait. hort. kew. ed. 2. vol. 4. p. 162.) leaves hispid, entire, and ternate; umbel compound; flowers dioecious. ♃. G. Ger. melanánthum, Andr. bot. rep. 209. Petals dark-brown. Leaflets entire.

Dioecious Stork's-bill. Fl. June, Aug. Clt. 1795. Pl. ½ ft.

41 P. A'TRUM (Lher. ger. t. 44.) leaves puberulous, some of which are oblong and entire, and others pinnate-parted; umbels compound; superior segments of the calyx erect; petals linear; sterile filaments incurved at the apex. ♃. G. Hoárea àtra, Sweet, ger. t. 72. Petals dark-brown, with white claws.

Dark-flowered Stork's-bill. Fl. May, Aug. Clt. 1793. Pl. ½ foot.

42 P. UNDULÆFLÒRUM (Sweet, ger. 263. under *Hoárea*,) leaves hairy, lower ones simple, roundish-ovate, upper ones trifid and ternate, rarely pinnatifid; umbels compound, many-flowered; calyxes villous, bearded at the apex; petals waved, spreading. ♃. G. Petals blackish-brown, with white claws.

Waved-flowered Stork's-bill. Fl. May, Aug. Clt. 1821. Pl. ½ foot.

43 P. CONGE'STUM (Sweet, ger. 302. under *Hoárea*,) stemless;

leaves pinnate or pinnatifid, pilose; leaflets and segments pinnatifidly-lobed or cut, unequally-toothed, acutish; stipulas lanceolate, acute; umbels many-flowered, crowded; petals ligulate, spotted, superior ones bent back. 4. G. Petals flesh-coloured, with numerous small dots, the upper ones darker above the bent part.

Crowded-flowered Stork's-bill. Fl. May, Aug. Pl. ½ foot.

† *Names of garden Hybrids belonging to Sect. I. Hoárea.*

1 *P. silinifòlium* (Sweet, ger. 159.) Flowers purple.
2 *P. integrifòlium* (Sweet in Colv. cat.) Flowers red.
3 *P. fucàtum* (Sweet in Colv. cat.) Flowers red.
4 *P. nígricans* (Sweet in Colv. cat.) Flowers red.
5 *P. mágicum* (Sweet in Colv. cat.) Flowers red.
6 *P. vàrium* (Sweet, ger. t. 166.) Flowers dark.
7 *P. Colvíllii* (Sweet, ger. 260.) Flowers blush.
8 *P. Jenkensònii* (Sweet in Colv. cat.) Flowers crimson.
9 *P. dilùtum* (Sweet, hort. brit. 76.) Flowers blush.
10 *P. replicàtum* (Sweet, hort. brit. 72.) Flowers red.
11 *P. rubéscens* (Sweet, hort. brit. 76.) Flowers red.
12 *P. intermíxtum* (Sweet, hort. brit. 76.) Flowers red.
13 *P. capitàtum* (Sweet, hort. brit. 76.) Flowers blush.
14 *P. supérbum* (Sweet, hort. brit. 76.) Flowers crimson.
15 *P. villòsum* (Sweet, hort. brit. 76.) Flowers crimson.
16 *P. unguiculàtum* (Sweet, hort. brit. 76.) Flowers red.
17 *P. tenuifòlium* (Sweet, hort. brit. 76.) Flowers blush.
18 *P. marginàtum* (Sweet, hort. brit. 76.) Flowers blush.
19 *P. atrosanguíneum* (Sweet, ger. 151.) Flowers crimson.
20 *P. Sweetiànum* (D. C. H. élegans, Sweet, ger. 132.) Flowers crimson.
21 *P. coccíneum* (Sweet, ger. 398.) Flowers scarlet.
22 *P. recurviflòrum* (Sweet, hort. brit. 76.) Flowers crimson.
23 *P. sanguinoléntum* (Sweet, hort. brit. 76.) Flowers red.
24 *P. pulchéllum* (Sweet, hort. brit. 76.) Flowers red.
25 *P. amœ'num* (Sweet, hort. brit. 76.) Flowers red.
26 *P. pàtens* (Sweet, hort. brit. 76.) Flowers red.
27 *P. lilácinum* (Sweet, hort. brit. 76.) Flowers red.
28 *P. venòsum* (Sweet, ger. 209.) Flowers striped.
29 *P. literàtum* (Sweet, hort. brit. 76.) Flowers striped.
30 *P. hedysarifòlium* (Sweet, ger. 355.) Flowers crimson.
31 *P. galegifòlium* (Sweet, ger. icon.) Flowers red.
32 *P. sisymbrifòlium* (Sweet, ger. 358.) Flowers red.
33 *P. orobifòlium* (Sweet, ger. 304.) Flowers purple.
34 *P. retúsum* (Sweet, ger. 307.) Flowers dark.
35 *P. coluteæfòlium* (Sweet, ger. 311.) Flowers crimson.

SECT. II. DIMA'CRIA (from δις, *dis*, two, and μακρος, *macros*, long; in allusion to the 2 lowest fertile stamens being twice the length of the rest). Lindl. in Sweet, ger. no. 46. Petals 5, unequal, 2 upper ones conniving, divaricate at the apex. Stamens shorter than the sepals, 5 of which are fertile, the 2 lowest ones twice the length of the rest, stretched out, upper ones shortest, the 5 sterile ones very short, and nearly equal.—Stemless herbs, with turnip-like roots, and stalked, radical leaves.

* *Leaves pinnate; leaflets entire.*

44 P. VICIÆFÒLIUM (Lher. ger. ined. no. 15. D. C. prod. 1. p. 653.) leaves pinnate, villous, with 4-5 pairs of ovate, nearly entire, flat leaflets. 4. G. Ger. pinnàtum, Cav. diss. 4. t. 115. f. 2. but not of Lin. Dimàcria pinnàta, Sweet, ger. t. 46. Petals pale rose-coloured, 2 upper ones lined, and dotted with blood-coloured spots at the base.

Vetch-leaved Stork's-bill. Fl. May, June. Clt. 1779. Pl. ½ ft.

45 P. FOLIOLÒSUM (D. C. prod. 1. p. 653.) leaves pinnate, with 15-20 pairs of bifid leaflets. 4. G. Geràmium pinnàtum, Andr. bot. rep. 311. Petals yellow, spotted with red.

Leafy Stork's-bill. Fl. May, Aug. Clt. 1800. Pl. ½ foot.

46 P. ASTRAGALÆFÒLIUM (Pers. ench. 2. p. 227.) leaves pinnate, hairy, with many pairs of elliptic leaflets; petals waved, twisted at the base. 4. G. Ger. astragalæfòlium, Cav. diss. 4. t. 104. f. 2. Andr. bot. rep. 190. Ger. pinnàtum, Lin. spec. 677. Dimàcria astragalæfòlia, Sweet, ger. 103.—Comm. præl. 53. t. 3. Petals white, narrow, spotted and streaked with purple.

Astragalus-leaved Stork's-bill. Fl. June, Aug. Clt. 1788. Pl. ½ foot.

47 P. CORONILLÆFÒLIUM (Pers. ench. 2. p. 227.) leaves pinnate, smooth, with 1-2 pairs of obovate or oblong leaflets. 4. G. Ger. coronillæfòlium, Andr. bot. rep. 305. Petals fulvous, 2 upper ones spatulate and retuse, spotted with red, lower ones lanceolate.

Coronilla-leaved Stork's-bill. Fl. June, Aug. Clt. 1795. Pl. ½ foot.

48 P. HERACLEIFÒLIUM (Lodd. bot. cab. 437.) leaves pinnate, smooth, with 2-3 pairs of obovate leaflets, the ultimate ones confluent. 4. G. Petals obovately-cuneated, dark-brown, with the base and margins yellowish.

Cow-parsnip-leaved Stork's-bill. Fl. June, July. Clt. 1818. Pl. ½ foot.

** *Leaves pinnate, with the leaflets cut or multifid.*

49 P. CA'RNEUM (Jacq. icon. rar. 3. t. 512.) leaves smooth, bipinnate; lobes trifid, linear, bluntish; scape simple. 4. G. Ger. pinnatífidum, Cav. diss. 4. t. 260. t. 121. f. 1. Petals pale rose-coloured, painted with darker veins.

Flesh-coloured-flowered Stork's-bill. Fl. May, July. Clt. 1812. Pl. ½ foot.

50 P. RECURVA'TUM (Sweet, hort. brit. 77. under *Dimàcria*,) leaves pinnate; leaflets trifid, with the lobes bearded; umbels simple; petals linear, obtuse, recurved. 4. G. Ger. barbàtum, var. mìnor, Andr. bot. rep. 323. Petals white, 2 upper ones streaked, and dotted with red.

Recurved-petalled Stork's-bill. Fl. May, Aug. Clt. 1790. Pl. ½ foot.

51 P. ARISTA'TUM (Sweet, hort. brit. p. 77. under *Dimàcria*,) leaves pinnate; leaflets variously lobed, each lobe ending in a tuft of hairs; petals linear, obtuse. 4. G. Ger. barbàtum, var. undulàtum, Andr. bot. rep. 366. Petals white, but all streaked with red at the base.

Awned-leaved Stork's-bill. Fl. May, Aug. Clt. 1790. Pl. ½ ft.

52 P. BARBA'TUM (Jacq. icon. 3. t. 513.) leaves pinnate; leaflets trifid; lobules linear, acuminated, bearded at the apex; umbels compound; petals linear, obtuse. 4. G. Ger. molíferum, Burm. ger. 70. t. 2. Cav. diss. 4. t. 120. f. 3. Ger. barbàtum, Andr. bot. rep. t. 303. Petals flesh-coloured or white, upper ones painted with a red patch in the middle of each.

Bearded-leaved Stork's-bill. Fl. May, Aug. Clt. 1790. Pl. ½ foot.

53 P. PETROSELINIFO'LIUM; hairy; leaves pinnate, with 2-3 pairs of distant, jagged, reflexed leaflets; umbels many-flowered; nectariferous tube twice the length of the calyx. 4. G. Petals blush, with a linear red spot in the centre of each, emarginate, and spatulately-linear. Ger. apiifòlium, Andr. ger. icon. Dimàcria apiifòlium, Sweet, hort. brit. p. 77.

Parsley-leaved Stork's-bill. Fl. Ap. Aug. Clt. 1802. Pl. ½ ft.

54 P. FISSIFÒLIUM (Pers. ench. 2. p. 227.) leaves pinnate, with trifid and bifid leaflets, cut and naked at the apex; umbel simple; petals obtuse, all marked with an oblong spot. 4. G. Ger. fissifòlium, Andr. bot. rep. 378. Petals white, red at the base.

Cleft-leaved Stork's-bill. Fl. May, Aug. Clt. 1795. Pl. ½ ft.

55 P. FLORIBU'NDUM (Ait. hort. kew. ed. 2. vol. 4. p. 163.) leaves pinnate, with 2 parted leaflets; umbels compound. 4. G. Ger. floribúndum, Andr. bot. rep. 420. Petals white, upper

ones marked each with 3 lunate spots, lower ones marked with a red linear line each.

Bundle-flowered Stork's-bill. Fl. March, Aug. Clt. 1795. Pl. ½ foot.

*** *Leaves cordate, 3-lobed, ternate, or furnished with 2 auricles at the base.*

56 P. REVOLU'TUM (Pers. ench. 2. p. 226.) leaves cordate, obtuse, nerved, quite entire, but usually with an auricle on each side at the base; umbels compound; leaflets of involucre revolute. 4. G. Ger. revolùtum, Andr. bot. rep. 354. Flowers rose-coloured, lined with purple.

Revolute-involucred Stork's-bill. Fl. July, Aug. Clt. 1800. Pl. ½ foot.

57 P. HETEROPHY'LLUM (Jacq. icon. rar. 3. t. 516.) leaves ciliated, undivided, 3-lobed or ternate, with the middle segment 3-lobed; umbel compound. 4. G. Petals white, 2 superior ones retuse, with a blood-coloured spot at the base of each.

Various-leaved Stork's-bill. Fl. May, Aug. Clt. 1800. Pl. ½ ft.

58 P. ANDRE'WSII (Sweet, hort. brit. 77. under *Dimàcria*,) lower leaves oblong, ovate, entire, others pinnate, with linear segments; umbels compound, many-flowered; nectariferous tube about twice the length of the calyx; petals spatulately-linear, blush. 4. G. Ger. heterophýllum, Andr. ger. icon. Petals blush, upper ones marked with a dark-red spot, dotted with red underneath the spot, lower ones each with a red line.

Andrews's Stork's-bill. Fl. April, Aug. Clt. 1802. Pl. ½ ft.

59 P. OXALIDIFÒLIUM (Pers. ench. 2. p. 227.) leaves ciliated, ternate, with roundish, obtuse leaflets; umbel compound. 4. G. G. oxalidifòlium, Andr. bot. rep. t. 300. Petals pale-yellow, 2 upper ones marked with a blood-coloured patch at the base.

Wood-sorrel-leaved Stork's-bill. Fl. May, Aug. Clt. 1801. Pl. ½ foot.

60 P. TENE'LLUM (Andr. ger. icon. under *Gerànium*,) leaves smooth, trifoliate, and trifid; leaflets and segments oblong, middle ones broadest; umbels compound, many-flowered; nectariferous tube 2 or 3 times longer than the calyx; petals linear. 4. G. Petals white, upper ones spotted with red at the base, lower ones with one spot each.

Slender Stork's-bill. Fl. July, Aug. Clt. 1802. Pl. ½ foot.

61 P. REFLE'XUM (Pers. ench. 2. p. 227.) nearly stemless; leaves ternate, with deeply-lobed, recurved leaflets; umbels simple; 2 superior filaments, as well as the stigmas, reflexed. 4. G. Ger. refléxum, Andr. bot. rep. 224. Petals white.

Reflexed-stigmaed Stork's-bill. Fl. June, July. Clt. 1800. Pl. ½ foot.

**** *Leaves oblong or lanceolate, entire or toothed.*

62 P. PUNCTA'TUM (Willd. spec. 3. p. 645.) leaves ovate, toothed, smooth; umbel compound; flowers diandrous; petals linear, 3 inferior ones one-half shorter than the rest. 4. G. Ger. punctàtum, Andr. bot. rep. t. 60. Petals cream-coloured, 2 superior ones marked with blood-coloured spots.

Dotted-petalled Stork's-bill. Fl. April, July. Clt. 1794. Pl. ½ foot.

63 P. SPATULA'TUM (Andr. bot. rep. t. 152. under *Gerànium*,) leaves lanceolate, rather spatulate, obtuse, smooth; umbel compound; flowers pentandrous; petals linear, obtuse, rather revolute. 4. G. Petals yellow, 2 superior ones marked with 2 dark-red lines.

Spatulate-leaved Stork's-bill. Fl. April, July. Clt. 1795. Pl. ½ foot.

64 P. AFFI'NE (Sweet, hort. brit. 76. under *Dimàcria*,) leaves lanceolate-spatulate, tapering to both ends, ciliated on the margins; scape bifid, bearing 2 umbels; flowers pentandrous; petals linear-spatulate, revolute. 4. G. Ger. spatulàtum var. curviflòrum, Andr. bot. rep. 282. Petals yellow, 2 upper ones marked with a double row of red spots.

Allied Stork's-bill. Fl. April, July. Clt. 1794. Pl. ½ foot.

65 P. RADIA'TUM (Pers. ench. 2. p. 226.) leaves elliptic-spatulate, quite entire, smooth; umbel compound; flowers pentandrous; petals wedge-shaped. 4. G. Ger. radiàtum, Andr. bot. rep. t. 222. Petals yellow, 2 upper ones marked with a double row of red spots.

Ray-flowered Stork's-bill. Fl. Ju. Aug. Clt. 1801. Pl. ½ ft.

66 P. VIRGI'NEUM (Pers. ench. 2. p. 226.) leaves ovate-elliptic, acute at both ends, smooth; umbel compound; flowers pentandrous; petals lanceolate-cuneated, equal, waved. 4. G. Ger. undulàtum, Andr. bot. rep. 317. Petals white, lined with red.

Virgin Stork's-bill. Fl. May, July. Clt. 1795. Pl. ½ foot.

67 P. UNDULA'TUM (Ait. hort. kew, ed. 2. vol. 4. p. 160.) leaves linear-lanceolate, entire, ciliated; umbel simple; flowers pentandrous; petals waved, nearly equal. 4. G. Ger. undulàtum, Andr. bot. rep. t. 292. Petals white, 2 superior ones with dark spots on the margin, lower ones with a red line.

Waved Stork's-bill. Fl. May, July. Clt. 1795. Pl. ½ foot.

68 P. LINEA'RE (Pers. ench. 2. p. 228.) leaves lanceolate, repand; umbel nearly simple; flowers pentandrous; petals linear. 4. G. Ger. lineàre, Andr. bot. rep. t. 193. Petals very long, yellow, streaked at the base.

Linear-leaved Stork's-bill. Fl. June, Aug. Clt. 1800. Pl. ½ foot.

69 P. LANCEOFÒLIUM (Sweet, ger. 387. under *Dimàcria*,) stemless; leaves quite entire, rarely appendiculate, pilose on both surfaces, lower ones ovate, upper ones lanceolate, tapering to both ends; stipulas awl-shaped, linear; umbels of several flowers, compound; peduncles and calyxes densely tomentose. 4. G. Petals white, stained with blush, and marked with light red veins, 2 upper ones with a dark-purple patch each, branching at the apex.

Lance-leaved Stork's-bill. Fl. May, Aug. Clt. 1825. Pl. ½ ft.

† *A list of garden Hybrids belonging to Section II. Dimàcria.*

1 *P. bipartìtum* (Sweet, ger. 142.) Flowers striped.
2 *P. imbùtum* (Sweet, hort. brit. 77.) Flowers blush.
3 *P. fúlgens* (Sweet in Colv. cat.) Flowers crimson.
4 *P. élegans* (Sweet, ger. 3. t. 202.) Flowers scarlet.
5 *P. sulphùreum* (Sweet, ger. t. 163.) Flowers straw-coloured.
6 *P. Smithiànum* (Sweet, ger. 358.) Flowers red.

SECT. III. OTI'DIA (*ους ωτος, ous otos*, an ear; in allusion to the 2 superior petals being auricled at the base). Lindl. in Sweet, ger. p. 8. no. 98. Petals oblong-linear, nearly equal, about double the length of the calyx, 2 superior ones auricled at the base on the upper side. Stamens 10, erect, 5 of which are antheriferous, 2 upper ones of these spatulate or awl-shaped, 3 lower ones shortest, the 3 lower sterile ones erect or uncurved. Stems shrubby, fleshy. Leaves alternate, pinnate, fleshy. Flowers white.

70 P. CERATOPHY'LLUM (Lher. ger. t. 13.) stem shrubby, fleshy, branched; leaves pinnate-parted; lobes linear, terete, entire, or 3-toothed at the apex, rather channelled; peduncles many-flowered. h. G. Curt. bot. mag. 315. Petals white, linear-lanceolate, equal.

Horn-leaved Stork's-bill. Fl. May, Jul. Clt. 1786. Sh. 1 ft.

71 P. DASYCAU'LON (Sims, bot. mag. t. 2029.) stem shrubby, fleshy, tubercled; leaves fleshy, pinnate, with the segments deeply pinnatifid, rather trifid at the apex; peduncles 3-flowered. h. G. Sweet, ger. 196. P. dasycaúle, Haw. succ. p. 309. Petals linear, white.

Thick-stemmed Stork's-bill. Fl. July, Dec. Clt. 1795. Sh. 1 ft.

72 P. FERULA'CEUM (Willd. spec. 3. p. 687.) stem shrubby, fleshy; leaves pinnate, with deeply-toothed, waved segments;

peduncles many-flowered; petals acute, length of calyx. ♄. G. Burm. afr. t. 36. f. 1. Ger. ferulàceum, Cav. diss. 4. t. 110. f. 2.

Fennel-like Stork's-bill. Fl. July, Sept. Shrub 1 foot.

73 P. crithmifòlium (Smith, icon. pict. 1. t. 13.) stem shrubby, fleshy; leaves fleshy, bipinnate; lobes dilated at the apex, cut; peduncles many-flowered, panicled; petals obtuse, longer than the calyx, 2 upper ones curled at the base. ♄. G. Sweet, ger. 364. P. paniculàtum, Jacq. schœnbr. 2. t. 137. Petals white, 2 upper ones spotted with red at the base.

Samphire-leaved Stork's-bill. Fl. April, Sept. Clt. 1790. Shrub 1 to 3 feet.

74 P. alte'rnans (Wendl. hort. herrenh. 1. p. 14. t. 10.) stem shrubby, rather fleshy; branches pilose; leaves pinnate, with stalked, rather alternate, wedge-shaped segments, deeply-toothed at the apex; umbels few-flowered. ♄. G. Sweet, ger. 286. Petals white, 2 upper ones marked with two red lines at the apex.

Alternating-leafletted Stork's-bill. Fl. May, Aug. Clt. 1791. Shrub 1 foot.

75 P. la'xum (Sweet, ger. 196. under *Otídia*,) umbels many-flowered, loosely panicled; leaves pinnate, smooth; leaflets pinnatifid or cut; segments wedge-shaped, flat, erosely toothed at the apex; stem shrubby, fleshy; petals a little toothed; nectariferous tube a little shorter than the reflexed calyx. ♄. G. Petals white, upper ones marked with pale-lilac, branched lines near the base; lower petals concave, white.

Loose-flowered Stork's-bill. Fl. Ju. Sept. Clt. 1821. Sh 1 ft.

76 P. carnòsum (Ait. hort. kew, 2. p. 421.) stem thick, fleshy, shrubby at the base; leaves smooth, thick, sinuately-pinnatifid, with oblong, obtuse segments, which are deeply toothed at the apex; umbels many-flowered; petals linear; nectariferous tube rather longer than the calyx. ♄. G.—Dill. elth. 1. p. 153. t. 127. f. 154. Ger. carnòsum, Lin. spec. 946. Cav. diss. t. 99. f. 1. Otídia carnòsa, Sweet, ger. t. 98. Flowers white.

Fleshy Stork's-bill. Fl. June, Aug. Clt. 1724. Shrub 1 ft.

Sect. IV. Campy'lia (from *καμπυλος*, *campylos*, a curve; in allusion to the two upper filaments being hooked). Sweet, ger. 43 and 48. Petals 5, unequal, 2 upper ones largest, rather auricled at the claw. Filaments 10, pilose or pubescent, 5 fertile ones erect, 5 alternate ones sterile, 2 upper ones of these longer, and hooked at the apex.—Herbs hardly suffruticose at the base, branched. Leaves stalked, ovate or oblong, toothed or cut.

77 P. blatta'rium (Jacq. schœnbr. 2. p. 3. t. 131.) stem suffruticose, erect; leaves ovate-roundish, obtuse, hoary, and silky on both surfaces, toothed; peduncles 4-8-flowered; 2 superior petals roundish, lower ones oblong. ♄. G. Campýlia blattària, Sweet, ger. 88. Petals pale-violet. Stamens pilose.

Moth-Mullein-like Stork's-bill. Fl. June, Sept. Clt. 1790. Shrub 1 foot.

78 P. dichondræfòlium (D. C. prod. 1. p. 656.) stem suffruticose, erect; leaves kidney-shaped, crenulated, hoary; peduncles 5-flowered; 2 upper petals obovate, lower ones oblong. ♄. G. Burch. cat. afr. no. 3084. This is very like *P. blattàrium* and *P. trichostèmon*, but the leaves are kidney-shaped.

Dichondra-leaved Stork's-bill. Shrub 1 foot.

79 P. scapòsum (D. C. prod. 1. p. 656.) plant nearly stemless, the neck imbricated with scales; leaves ovate, obtuse, toothed, hoary-tomentose on both surfaces; scapes radical, 1-flowered. ♄. G. Ger. glaúcum, Cav. diss. 4. p. 237. t. 103. f. 2. but not of Andr. P. tomentòsum, Lher. ger. ined. no. 80. but not of Jacquin.

Scape-flowered Stork's-bill. Shrub ½ foot.

80 P. erioste'mon (Jacq. schœnbr. 2. p. 4. t. 132.) stem suffruticose, erect; leaves elliptically-roundish, obtuse, crenated, silky; peduncles 4-flowered; upper petals obovate, acutely-emarginate. ♄. G. Ger. ovàtum, Cav. diss. 4. t. 103. f. 3. Ger. ovàle, Burm. cap. 19. Petals white. Stamens pilose.

Woolly-stamened Stork's-bill. Fl. March, June. Clt. 1794. Shrub ½ foot.

81 P. trichoste'mon (Jacq. icon. rar. 3. t. 524.) stem suffruticose, ascending; leaves elliptically-roundish, crenated, silky; peduncles 3-flowered; superior petals roundish, lower ones oblong. ♄. G. Petals pale-violet, nearly as in *P. blattàrium*. Stamens pilose.

Hairy-stamened Stork's-bill. Shrub 1 foot.

82 P. verbasciflo'rum (Andr. ger. icon. under *Gerànium*,) stem suffruticose, ascending; leaves roundish-ovate, bluntly and doubly crenated, with waved margins, recurved; stipulas acuminated; umbels 3-5-flowered; upper petals roundish; nectariferous tube 3 times shorter than the calyx. ♄. G. Campýlia verbasciflòra, Sweet, ger. 2. t. 157. Petals pale-lilac.

Mullein-flowered Stork's-bill. Fl. June, Sept. Clt. 1811. Shrub 1 foot.

83 P. rumicifòlium (Sweet, ger. t. 318.) nearly stemless; leaves oblong-ovate, quite entire, acutish, blistered, and wrinkled, rather pilose, rarely auricled; stem leafy, very villous; umbels many-flowered; flowers tetrandrous; petals linear, very long, spreading, superior ones dotted at the base, 3 times longer than the calyx. ♃. G. Root fusiform. Petals yellow.

Dock-leaved Stork's-bill. Fl. May, Aug. Clt. 1825. Pl. ½ ft.

84 P. Œnothe'ra (Jacq. icon. rar. 3. t. 525.) stem herbaceous, ascending; leaves oblong-lanceolate, obtuse, toothed, hoary-tomentose; peduncles 1-2-flowered; superior petals obovate, hardly larger than the lower ones. ♃. G. Flowers rose-coloured, pentandrous.

Œnothera-like Stork's-bill. Fl. April, Aug. Clt. 1812. Pl. 1 foot.

85 P. coronopifo'lium (Jacq. icon. rar. 3. t. 526.) stem suffruticose, ascending; leaves linear-lanceolate, deeply toothed at the apex, hoary beneath; peduncles 3-flowered; superior petals obovate-oblong, appendiculate at the claws. ♄. G. Corolla pale-red, streaked with darker veins.

Buckhorn-leaved Stork's-bill. Fl. June, Sept. Clt. 1791. Shrub 1 foot.

86 P. capilla're (Willd. spec. 3. p. 660.) stem suffruticose, short; leaves lanceolate, deeply-pinnatifid, pubescent; peduncles 2-flowered. ♄. G. Ger. capillàre, Cav. diss. 4. p. 258. t. 97. f. 1. P. Mahérnium, Lher. ger. ined. no. 45. Very like *P. coronopifòlium*. Corolla pale-red.

Capillary Stork's-bill. Shrub ½ foot.

87 P. ca'num (Pers. ench. 2. p. 229.) stem suffruticose; leaves ovate, plaited, serrated, tomentose; peduncles 3-flowered, 2 superior petals very broad, and ovate. ♄. G. Campýlia càna, Sweet, ger. 114. Ger. tomentòsum, Andr. bot. rep. t. 115. but not of others. Two upper filaments revolute, and ciliated. Petals rose-coloured. Tube straight, one-half shorter than the calyx.

Hoary Stork's-bill. Fl. July, Dec. Clt. 1794. Shrub 1 foot.

88 P. carina'tum (Sweet, ger. t. 21. under *Campýlia*,) stem suffruticose, ascending; leaves ovate, unequally toothed or cut; stipulas keeled; peduncles 2-4-flowered; 2 superior petals ovate, waved, rather emarginate. ♄. G. Ger. tricolor ovalifòlium, Andr. ger. icon. Ger. ovàtum, Cav. diss. 4. t. 103. f. 3? Two superior petals reddish-purple, the three lower ones white.

Keeled-stipuled Stork's-bill. Fl. April, Sept. Clt. 1810. Shrub 1 foot.

† *Garden Hybrids belonging to Section* IV. *Campýlia.*

1 *P. variegàtum* (Sweet, ger. 3. t. 266.) Flowers striped.
2 *P. holosericeum* (Sweet, ger. 1. t. 75.) Flowers dark.

3 *P. élegans* (Sweet, ger. 3. t. 222.) Flowers blush.
4 *P. laciniàtum* (Sweet, ger. n. s. no. 1.) Flowers dark-red.

Sect. V. Phymata'nthus (from φυμα, *phyma*, a wart or tumour, and ανθος, *anthos*, a flower; in allusion to the warted claws of the petals). Lindl. in Sweet, ger. no. 43. Petals 5, unequal, 2 superior ones warted at the claws. Stamens 10, in a short tube, the 5 fertile ones recurved, and the 5 sterile ones straight, all pilose or pubescent.—Small, branched shrubs, with ovate or lanceolate, toothed leaves.

89 P. ela'tum (Sweet, ger. 96. under *Phymatánthus*,) stem erect, branched; leaves lanceolate, canescent, deeply toothed; peduncles usually 3-flowered; superior petals largest, rather smooth at the base, lower ones oval-oblong. ♄. G. Ger. trícolor arbòreum, Andr. ger. icon. Flowers white, with the upper petals red.

Tall Stork's-bill. Fl. June, Oct. Clt. 1791. Shrub 1½ foot.

90 P. tri'color (Curt. bot. mag. 240.) stem erect; leaves lanceolate, villously-canescent, deeply-toothed, or jagged; peduncles usually 3-flowered; upper petals roundish, short, warted at the base, lower ones oval. ♄. G. Ger. violàrium, Jacq. icon. rar. 3. t. 527. Ger. trícolor, Andr. ger. icon. Phymatánthus trícolor, Sweet, ger. 43. The 2 superior petals are reddish-purple, and nearly black towards the claws, the 3 lower ones white.

Three-coloured-flowered Stork's-bill. Fl. June, Oct. Clt. 1791. Shrub 1 foot.

† *Garden Hybrids belonging to the present Section.*

1 *P. villòsum* (Sweet, hort. brit. 75.) Flowers white and purple.
2 *P. grandiflòrum* (Sweet, l. c.) Flowers white and purple.
3 *P. latifòlium* (Sweet, l. c.) Flowers white and purple.
4 *P. intertinctum* (Sweet, ger. n. s. 54.) Flowers striped.

Sect. VI. Grenvi'llea (named in compliment to Lady Grenville, a great lover of geraniums). Sweet, ger. 262. f. 2. Petals 5, 2 superior ones largest, obliquely obovate, on long claws, 3 lower ones small, spatulate. Stamens 10, the 4 fertile ones ascendent at the apex, the 6 sterile ones short and awl-shaped.—A tuberous rooted herb, with simple leaves.

91 P. conspi'cuum (Sweet, ger. l. c. under *Grenvíllea*,) stemless; leaves spatulately-ovate or obovate, deeply-crenated, villous; stem long, a little branched; umbels many-flowered; superior petals emarginate; nectariferous tube nearly 3 times longer than the calyx. ♃. G. Ger. Grenvílliæ, Andr. ger. icon. Petals blush, 2 superior ones with a purple spot in the centre of each, and with their bases dark-velvety.

Conspicuous Stork's-bill. Fl. July, Nov. Clt. 1810. Pl. 1 ft.

Sect. VII. Seymou'ria (named in compliment to the hon. Emily Seymour). Sweet, ger. 3. t. 206. Petals 2, distinct at the base, abruptly reflexed in the middle. Stamens 5, nearly equal, in a long straight tube, all fertile.—Stemless herbs, with turnip-like roots.

92 P. asarifòlium (Sweet, ger. l. c. under *Seymoúria*,) leaves roundish, cordate, bluntish, quite entire, ciliated, smooth, and shining above, but velvety-tomentose beneath; umbels compound, capitate; petals lanceolately-spatulate, emarginate at the apex. ♃. G. Flowers dark-purple.

Asarabacca-leaved Stork's-bill. Fl. Nov. Feb. Clt. 1821. Pl. ½ foot.

93 P. L'Hereti'eri (Sweet, ger. l. c.) leaves ovate, quite entire, acute, smooth; umbels simple; petioles ciliated with hairs. ♃. G. Ger. dipétalum, Lher. ger. t. 43. Petals pale-purple, spotted at the base.

L'Heretier's Stork's-bill. Fl. April, May. Clt. 1795. Pl. ½ ft.

Sect. VIII. Jenkinsònia (named in compliment to Mr. Jenkinson, treasurer to the horticultural society; a great cultivator of geraniums). Sweet, ger. no. 76. Petals 4-5, superior ones much larger than the rest, emarginate at the apex, streaked with lines. Stamens 10, ascending, spreading at the top, and pilose at the base, 5-7 of which usually bear anthers, the sterile ones very short and awl-shaped.—Shrubs or herbs. Leaves pinnately, rarely ternately or palmately cleft, usually multifid.

* *Flowers with 4 petals and 5 anthers.*

94 P. Canarie'nse (Willd. hort. berl. t. 17.) stem herbaceous; leaves 3-parted; lobes toothed at the apex, obtuse, lower ones obovate, middle ones ovate, usually trifid; peduncles generally 2-flowered. ♂. G. Native of the Canary Islands. Petals white, 2 upper ones streaked with red.

Canary-Island Stork's-bill. Fl. May, Sept. Clt. 1802. Pl. 1 foot.

95 P. Synnòtii (Sweet, ger. 342. under *Jenkinsònia*,) stem suffruticose at the base, branched; branches flexuous, diffuse, ascending, pilose; leaves 3-parted and pinnatifid, rather recurved and pilose above, shining, but pubescent beneath, with ciliated edges; segments jagged, bluntly and roundedly toothed; umbels usually 5-flowered; flowers with 4 petals and 5 anthers; nectariferous tube shorter than the calyx. ♄. G. Petals lilac, upper ones marked each with 2 branched lines.

Synnot's Stork's-bill. Fl. May, Sept. Clt. 1825. Shrub 1 to 3 feet.

96 P. bulla'tum (Jacq. icon. rar. 3. t. 530. coll. 5. p. 124.) stem shrubby, procumbent, puberulous; leaves pinnate-parted; lobes deeply-lobed, rather hispid on both surfaces, lower ones largest; peduncles 2-flowered. ♄. G. P. myrrhifòlium β, Willd. spec. p. 661. Jenkinsònia bullàta, Sweet, ger. 3. t. 530. Petals pale-red, 2 upper ones lined with red.

Blistered Stork's-bill. Fl. May, Aug. Clt.? Pl. procumbent.

97 P. myrrhifòlium (Ait. hort. kew, ed. 1. vol. 2. p. 421.) stem shrubby, ascending; leaves rather hispid on both surfaces, stiff, pinnate-parted; lobes deeply-serrated, lower ones largest; peduncles 2-3-flowered. ♄. G. Ger. myrrhifòlium, Lin. spec. 949. P. betónicum, Jacq. icon. rar. 3. t. 531. coll. 5. p. 127. Petals like those of the last species, but sometimes 5.

Myrrh-leaved Stork's-bill. Fl. May, Aug. Clt. 1696. Sh. 1 ft.

98 P. coriandrifòlium (Jacq. icon. rar. 3. t. 528. coll. 5. t. 142.) stem herbaceous, perennial, rather puberulous; leaves bipinnate, smooth; lobes linear, subpinnatifid. ♃. G. Ger. coriandrifòlium, Cav. diss. 4. t. 116. Jenkinsònia coriandrifòlia, Sweet, ger. t. 34. Peduncles usually 3-flowered. Petals white, 2 superior ones streaked with red.

Coriander-leaved Stork's-bill. Fl. March, Aug. Clt. 1724. Pl. 1 foot.

** *Flowers with 5 anthers and 5 petals.*

99 P. la'cerum (Jacq. icon. rar. 3. t. 532. coll. 5. t. 122.) stem herbaceous, hairy, rather erect; leaves bipinnatifid; segments lanceolate, obtuse, toothed at the apex; peduncles 3-5-flowered. ♃. G. Jenkinsònia lácera, Sweet, ger. 3. p. 532. Petals blush, marked with blood-coloured veins. Pedicels short, cuniculate even to the base.

Jagged-leaved Stork's-bill. Fl. Ju. Aug. Clt. 1731. Pl. 2 ft.

*** *Flowers with 7 anthers and 4 petals.*

100 P. longicau'le (Jacq. icon. rar. 3. t. 533. coll. 5. p. 125.) stem herbaceous, hairy; leaves pinnate-parted; segments jagged, toothed at the apex, lower ones more profound; peduncles 1-5-flowered. ♂. G. Petals 4-5, pale-rose coloured, veined with red.

Long-stemmed Stork's-bill. Fl. May, Aug. Clt.? Pl. long.

101 P. anemonefòlium (Jacq. icon. rar. 3. t. 535. coll. 5.

p. 133.) stem shrubby at the base, hairy, erect; leaves pinnate-parted, hairy beneath, but smooth above; lobes toothed; peduncles usually 5-flowered. ♄. G. Jenkinsònia anemonefòlia, Sweet, ger. 3. t. 535. Petals usually 5 in number, rose-coloured, striped with deeper veins.

Anemone-flowered Stork's-bill. Fl. May, Aug. Pl. 1 foot.

102 P. caucalifòlium (Jacq. icon. rar. 3. t. 529. coll. 5. p. 145.) stem herbaceous, hairy; leaves bipinnate; lobes linear, smoothish; peduncles 1-flowered. ♃. G. Jenkinsònia caucalifòlia, Sweet, ger. 3. t. 529. Petals white or flesh-coloured, veined with red.

Caucalis-leaved Stork's-bill. Fl. Mar. Sept. Clt. 1812. Pl. 1 ft.

103 P. multicau'le (Jacq. icon. rar. 3. t. 534. coll. 5. p. 126.) stems herbaceous, procumbent, smooth; leaves somewhat bipinnatifid, toothed; peduncles many-flowered, capitate. ♃. G. Jenkinsònia multicaúlis, Sweet, ger. 3. t. 534. Petals pale-violet, 2 superior ones veined and spotted.

Many-stemmed Stork's-bill. Fl. June, Aug. Clt. 1802. Pl. procumbent.

104 P. pe'ndulum (Sweet, ger. 2. t. 188. under *Jenkinsònia*,) peduncles usually 5-flowered; leaves bipinnatifidly jagged, hairy; segments lanceolate, obtuse, toothed at the apex; stem procumbent, hairy; flowers heptandrous, 4-petalled, nectariferous tube keeled, a little longer than the calyx. ♄. G. Ger. lácerum, Andr. ger. icon. Petals lilac, 2 superior ones striped with dark purple.

Pendulous-branched Stork's-bill. Fl. May, Aug. Clt.? Pl. hanging.

* * * * *Flowers with 7 anthers and 5 petals.*

105 P. quina'tum (Curt. bot. mag. 547.) stem shrubby, flexuous; leaves pubescent, palmately 5-cleft; lobes cuneated, 3-toothed at the apex; peduncles 1-2-flowered; stamens pilose at the base; nectariferous tube twice the length of the large calyx; superior petals emarginate. ♄. G. Ger. præmórsum, Andr. bot. rep. 150. Jenkinsònia quinàta, Sweet, ger. t. 79. Flowers large, cream-coloured, the 2 superior petals marked with dark, simple veins.

Quinate-leaved Stork's-bill. Fl. May, Aug. Clt. 1793. Sh. 1 to 2 feet.

Sect. IX. Chorísma (from χωρισμος, *chorismos*, a separation; in allusion to the 2 lower fertile stamens being free and separate from the rest). Sweet, ger. no. 79. Petals 4, rarely 5, 2 superior ones with long claws, large, 2 lower ones much smaller. Stamens connate into a long, declinate tube, which is jointed in the middle, 7 of which are fertile, 2 lower ones of these free, the 3 sterile ones very short and awl-shaped, and about equal in length.

106 P. tetragònum (Lher. ger. t. 23.) branches tetragonal, fleshy; leaves cordate, obtusely lobed and rather toothed. ♄. G. Jacq. icon. rar. 1. t. 132. Curt. bot. mag. 136. D. C. pl. grass. t. 96. Jenkinsònia tetragòna, Sweet, ger. t. 99. Flowers pink.

Var. β, trigònum (Scop. del. 1. p. 12. t. 5.) branches trigonal. In the same plant the branches may be trigonal and tetragonal.

Var. γ, variegàtum (Sweet, ger. 99.) leaves variegated with white round the edges.

Tetragonal-stemmed Stork's-bill. Fl. May, Aug. Clt. 1774. Shrub 1 foot, with reclining branches.

Sect. X. Isope'talum (from ισος, *isos*, equal, and πεταλον, *petalon*, a petal). Sweet, ger. no. 126. Superior segment of calyx ending in a nectariferous foveola at the base, not in a tube. Petals 5, equal. Stamens 10, connate into a short tube, 5 or 6 of which are fertile, these are spreading and incurved at the apex; the rest sterile, unequal, and incurved.—Shrubs with fleshy stems.

107 P. cotyle'don (Lher. ger. t. 27.) stem thick, fleshy, branched; leaves cordate, rather peltate, wrinkled, pubescent, but tomentose beneath, and reticulately veined. ♄. S. Native of St. Helena. Ger. cotylédonis, Lin. mant. 569. Isopétalum cotylédonis, Sweet, ger. 126. Petals white, ovate.

Cotyledon-leaved Stork's-bill. Fl. May, Aug. Clt. 1765. Shrub 1 to 4 feet.

108 P. díscipes (Sweet, hort. brit. p. 85.). This plant is a native of St. Helena; it has not yet flowered in the gardens. It grows tall, with 1 single stem, with the leaves crowded at the top of the stem, they are hairy and kidney-shaped. ♃. G.

Central-stalked Stork's-bill. Clt. 1808. Shrub 6 feet.

Sect. XI. Cicònium (from *cicònia*, a stork, the same meaning as *Pelargònium*, which see). Sweet, ger. no. 13. in a note, and at no. 9. Pelárgium, series 1. Cicònium, D. C. prod. 1. p. 658. sect. Cynosbàta, D. C. prod. 1. p. 654. Petals 5, 2 superior ones approximate, short, and narrow, or nearly equal between themselves. Stamens 10, 7 or 5 of which bear anthers, 2 upper ones of these very short, 3 or 5 sterile.—Stems shrubby, erect.

* *Petals suboval, nearly equal. Stamens* 10, 5 *of which are sterile and* 5 *fertile. Cynosbàta, D. C. l. c.*

109 P. malvæfòlium (Jacq. fil. ecl. 1. p. 145. t. 97.) stem shrubby at the base; branches divaricate, diffuse, puberulous; leaves cordate, rather orbicular, 7-9-lobed, coarsely serrated, pubescent on both surfaces; umbels 5-8-flowered. ♄. G. Petals flesh-coloured, reticulated with darker veins. Nectariferous tube obsolete.

Mallow-leaved Stork's-bill. Fl. May, Sept. Clt. 1812. Shrub 2 feet.

110 P. laterítium (Willd. enum. suppl. p. 47.) stem shrubby at the base; leaves cordate, 5-lobed, hairy, zonate; lobes acutely toothed at the apex; umbels 4-5-flowered. ♄. G. Jacq. fil. ecl. 1. t. 97. the last figure. Petals brick-coloured.

Brick-coloured-flowered Stork's-bill. Fl. May, Sept. Clt. 1800. Shrub 2 feet.

111 P. cynosbatifòlium (Willd. hort. berl. t. 78.) stem shrubby, branched; leaves cordate, 3-lobed, toothed, pilose; middle lobe 3-lobed; peduncles 2-flowered; nectariferous tube very short. ♄. G. Flowers of a deep rose-colour, according to the colour given in the figure, but lilac according to the description; the lower petals are striped with darker branched veins.

Gooseberry-leaved Stork's-bill. Fl. May, Aug. Shrub 2 ft.

* * *Petals of one colour, 2 superior ones very short and narrow. Stamens short, erect, 2 lower ones very short, with the anthers nearly sessile. Stems shrubby, fleshy. Sect. Pelárgium, series* 1. *Cicònia, D. C. prod.* 1. *p.* 658.

112 P. acetòsum (Ait. hort. kew. 2. p. 430.) leaves quite smooth, obovate, crenated, rather fleshy; peduncles few-flowered; petals linear. ♄. G. Curt. bot. mag. 103. Ger. acetòsum, Lin. spec. 947. Cav. diss. 4. t. 104. f. 3. Petals pale-rose coloured. Stamens usually 5, fertile.

Sorrel-leaved Stork's-bill. Fl. May, Sept. Clt. 1710. Sh. 2 ft.

113 P. sca'ndens (Ehrh. beitr. 7. p. 161. Willd. spec. 3. p. 666.) leaves roundish, obsoletely lobed, crenated, smooth, zonate; peduncles many-flowered; petals linear, about the breadth of the segments of the calyx. ♄. G. Stem not climbing, but the branches are flexuous. Ger. acetòsum ròseum, Dum. Cours. bot. cult. 5. p. 16. Petals rose-coloured.

Climbing Stork's-bill. Fl. May, Sept. Clt. 1800. Shrub flexuous.

114 P. pu'milum (Willd. enum. 704.) leaves roundish, kid-

ney-shaped, obsoletely lobed, crenate, younger ones somewhat zonate; peduncles usually many-flowered; petals linear; nectariferous tube 4-5-times longer than the calyx, nearly sessile. ♄. G. Ger. zonàle mínimum, Andr. ger. icone. Very like *P. scándens*, but the stem is hardly a foot high. Petals pale-scarlet.

Dwarf Stork's-bill. Fl. May, Sept. Clt. 1800. Shrub 1 ft.

115 P. STENOPE'TALUM (Ehrh. beitr. 7. p. 161. Willd. spec. 3. p. 666.) leaves roundish, obsoletely lobed, crenated, pubescent, zonate; peduncles many-flowered; petals linear, narrower than the calycine lobes. ♄. G. Petals deep-scarlet. P. ribifòlium, Dum. Cours. bot. cult. ed. 2. no. 58.

Narrow-petalled Stork's-bill. Fl. May, Aug. Clt. 1800. Shrub 3 feet.

116 P. LEPTOPE'TALUM (Sweet, hort. brit. p. 84.) leaves cordate, obsoletely 5-lobed, slightly crenated, fleshy; umbels many-flowered; petals linear, about half as long again as the calyx; nectariferous tube 4-times longer than the calyx. ♄. G. Ger. stenopétalum, Andr. ger. with a figure. Petals scarlet.

Slender-petalled Stork's-bill. Fl. May, Aug. Clt. 1800. Shrub 3 feet.

117 P. HY'BRIDUM (Ait. hort. kew. 2. p. 424.) leaves roundish, obsoletely lobed, crenated, smooth, spotless; peduncles many-flowered; petals linear-wedge-shaped, broader than the segments of the calyx. ♄. G. Ger. hýbridum, Lin. mant. 97. Cav. diss. 4. t. 105. f. 2. P. coccíneum, Ehrh. beitr. 7. p. 162. Ger. miniàtum, Andr. ger. with a figure. Cicònium hýbridum, Sweet, ger. 1. t. 63. This is a proper species, not a hybrid. Petals scarlet.

Var. β,ròseum (Ehrh. beitr. 7. p. 161.) leaves cordately-kidney-shaped; petals rose-coloured.

Hybrid Stork's-bill. Fl. May, Oct. Clt. 1732. Sh. 3 to 4 ft.

118 P. ZONA'LE (Willd. spec. 3. p. 667.) leaves cordate, orbicular, obsoletely lobed, toothed, zonate above; peduncles many-flowered; petals wedge-shaped. ♄. G. G. zonàle, Lin. spec. 947. Cav. diss. 4. t. 98. f. 2. Flowers variable in colour, red, scarlet, rose, pale, and white.

Var. β, marginàtum (Cav. diss. 4. p. 230.) leaves curled and wrinkled, not zonate, but white around the edge; branches stiff, erect. Flowers scarlet.

Horse-shoe Stork's-bill. Fl. April, Dec. Clt. 1710. Shrub 3 to 6 feet.

119 P. ÍNQUINANS (Ait. hort. kew. 2. p. 424.) leaves orbicular, kidney-shaped, tomentosely viscid; peduncles many-flowered; petals obovate-wedge-shaped. ♄. G. Ger. ínquinans, Lin. spec. 945. Cav. diss. 4. t. 106. f. 2. Andr. ger. icon.—Dill. hort. elth. t. 125. f. 151. The leaves stain the hands of a brown colour. Flowers bright-crimson or scarlet.

Staining Stork's-bill. Fl. May, Sept. Clt. 1714. Sh. 4 to 6 ft.

120 P. HETERO'GAMUM (Lher. ger. t. 18.) leaves cordate, orbicular, deeply lobed, pubescent on both surfaces; peduncles many-flowered; petals oblong-wedge-shaped. ♄. G. Ger. quinquélobum, Lam. dict. 2. p. 671. Said to be a hybrid between *P. zonàle* and *P. alchimilloìdes*. Flowers rose-coloured or lilac. Stamens 6, fertile.

Heterogamous Stork's-bill. Fl. May, Aug. Clt. 1786. Shrub 4 to 6 feet.

121 P. CE'RINUM (Sweet, ger. t. 176. under *Cicònium*,) leaves roundish-kidney-shaped, obsoletely crenated, nerved, pubescent, very soft; stipulas cordate, toothed; stem erect; umbels many-flowered; petals obovate, upper ones smallest; nectariferous tube twice the length of the calyx. ♄. G. Petals pink, hardly lined at the base. Stamens 10, short, erect, sometimes all fertile. Perhaps a hybrid.

Wax Stork's-bill. Fl. May, Dec. Shrub 3 to 4 feet.

122 P. MÓNSTRUM (Ait. hort. kew. 2. p. 424.) leaves orbicularly kidney-shaped, obsoletely lobed, slightly zonate, complicated, curled, pubescent on both surfaces; peduncles many-flowered; flowers aggregate; petals linear-cuneated. ♄. G. Cicònium mónstrum, Sweet, ger. 13. Flowers deep rose-coloured, of the 7 fertile stamens 2 are very short. Perhaps a hybrid.

Monstrous Stork's-bill. Fl. May, Oct. Clt. 1784. Shrub 2 to 4 feet.

123 P. MICRA'NTHUM (Sweet, ger. 295. under *Cicònium*,) stem shrubby, fleshy; leaves cordately-kidney-shaped, orbicular, sharply 5-lobed, crenated, pubescent; stipulas cordate, ciliated; umbels many-flowered; petals roundish-ovate, somewhat emarginate, half as long again as the calyx; nectariferous tube twice the length of the calyx. ♄. G. Flowers small, bright scarlet.

Small-flowered Stork's-bill. Fl. May, Oct. Clt.? Shrub 1 to 3 feet.

124 P. BENTINCKIA'NUM (D. C. prod. 1. p. 664.) leaves cordate, orbicular, bluntly 5-7-lobed, crenated, soft, velvety on both surfaces; umbels many-flowered, velvety; petals obovate, nearly equal; nectariferous tube 5-times longer than the calyx. ♄. G. Petals of an intense scarlet colour. Cicònium Bentinckiànum, Sweet, hort. brit. 85. Ger. crenàtum, var. mollifoliàtum, Andr. ger. icon.

Bentinck's Stork's-bill. Fl. May, Oct. Clt.? Sh. 2 to 4 ft.

125 P. FOTHERGÍLLII (Sweet, ger. t. 266. under *Cicònium*,) stem nearly erect, branched; leaves kidney-shaped, 5-lobed, crenated, zonate; stipulas cordate, oblong, acute, ciliated; peduncles very long; umbels many-flowered; petals obovate, veiny; nectariferous tube 3-times longer than the calyx. ♄. G. Petals striped with dark purple.

Var. α, coccíneum (Sweet, l. c. f. a.) flowers scarlet.

Var. β, purpùreum (Sweet, l. c. f. b.) flowers of a purplish rose-colour.

Fothergill's Stork's-bill. Fl. May, Oct. Clt.? Sh. 2 to 4 ft.

126 P. CRENA'TUM (Sweet, ger. t. 345. under *Cicònium*,) leaves broad, kidney-shaped, obsoletely lobed, coarsely crenated, pubescent; stipulas large, with wavy reflexed margins; umbels many-flowered; bracteas numerous, variable; petals wedge-shaped, upper ones much the smallest; nectariferous tube short, pedicellate, twice the length of the reflexed calyx. ♄. G. Ger. crenàtum, Andr. ger. icon. Petals bright-scarlet.

Crenate-leaved Stork's-bill. Fl. May, Oct. Sh. 2 to 4 feet.

A list of garden Hybrids belonging to the present section Cicònium.

1 *P. reticulàtum* (Sweet, ger. t. 143.) Flowers scarlet.
2 *P. æqualiflòrum* (Sweet, hort. brit. 84.) Flowers scarlet.
3 *P. oxyphýllum* (Sweet, hort. brit. 84.). Ger. miniàtum, var. álbum, Andr. ger. icon. Flowers white.
4 *P. bracteòsum* (D. C.) Flowers scarlet.
5 *P. glabrifòlium* (Sweet, ger. 363.) Flowers scarlet.

SECT. XII. POLYA'CTIUM (from πολυ, *poly*, many, and ακτιον, *action*, a ray; in allusion to the numerous flowers. D. C. prod. 1. p. 655.) Segments of calyx nearly equal, revolute. Petals 5, nearly equal, obovate. Stamens 10, 5 of which are antheriferous, the 4 lower ones are long and awl-shaped, the superior one broad and spatulate, reflexed at the apex, the fertile ones short and incurved at the apex. Petals all marked with a large dark-brown spot, hardly margined with yellow.

127 P. MULTIRADIA'TUM (Wendl. coll. with a figure) almost stemless; lower leaves pinnate, hairy, with pinnatifid segments; lobes oblong, obtuse, deeply toothed; upper leaves smoothish, bipinnatifid; umbels 20-30-flowered; nectariferous tube 4-times longer than the calyx. ♃. G. Root tuberous, Sweet, ger. 145. Petals black.

Many-rayed Stork's-bill. Fl. May, Ju. Clt. 1820. Pl. 1 ft.

Sect. XIII. Peri'stera (from *περιστερα, peristera*, a pigeon; leaves of most of the species resembling those of the Common Dove's-foot, *Ger. columbìnum*). D. C. prod. 1. p. 655. Petals nearly equal between themselves, and about the length of the calyx or a little longer. Stamens 10, the 5 longest ones nearly equal, antheriferous, the 5 alternate ones very short and sterile, toothformed. Caulescent herbs with the habit of *Geràmium* and *Eròdium*.

128 P. columbìnum (Jacq. schoenbr. 2. p. 4. t. 133.) many-stemmed, diffuse, procumbent; leaves cordate, roundish, many-parted; lobes trifid; lobules linear; peduncles many-flowered; flowers 4-anthered. 4. G. Ger. alceoìdes, Lin. spec. 948.? Petals purple, oblong-linear.

Dove's-foot-leaved Stork's-bill. Fl. June, Dec. Clt. 1795. Pl. procumbent.

129 P. procu'mbens (Pers. ench. 2. p. 229.) plant procumbent; leaves cordate, rather lobed, crenate, toothed; peduncles usually 2-flowered; flowers 4-anthered. 4. G. Ger. procúmbens, Andr. bot. rep. 254. Petals small, 2 superior ones white, 3 lower ones purple; all spotted in the middle.

Procumbent Stork's-bill. Fl. April, May. Clt. 1801. Pl. procumbent.

130 P. humifu'sum (Willd. enum. suppl. 47.) many-stemmed, procumbent; leaves cordate, somewhat 3-parted, or 5-lobed, toothed; peduncles 3-5-flowered; flowers 4-5-anthered. ⊙. H. Native of the Canary Islands. Jacq. ecl. 1. t. 99. Sweet, ger. t. 42. Ger. decúmbens, Balb. cat. hort. taur. 1813. app. 1. p. 11. Petals small, all spotted in the centre, 2 superior ones white, 3 inferior ones purplish.

Trailing Stork's-bill. Fl. April, Oct. Pl. trailing.

131 P. chamædryfòlium (Jacq. icon. rar. 3. t. 523.) much branched, procumbent; leaves elliptic, obtuse, covered with hoary pubescence, toothed; peduncles usually 2-flowered; flowers 5-anthered. 4. G. Petals white, length of calyx, marked with a blood-coloured patch in the middle.

Chamædrys-leaved Stork's-bill. Fl. May, June. Clt. 1812. Pl. procumbent.

132 P. austra'le (Willd. spec. 3. p. 657.) diffuse, procumbent; leaves cordate, rather lobed, villous beneath; peduncles many-flowered; flowers 5-anthered. 4. G. Native of New Holland. Jacq. ecl. 1. p. 149. t. 100. Petals rose-coloured, 2 superior ones spotted.

Southern Stork's-bill. Fl. May, Aug. Clt. 1792. Pl. procumbent.

133 P. glomera'tum (Jacq. ecl. 1. p. 146. t. 98.) stem suffruticose, diffuse; leaves cordate, ovate, obsoletely lobed, obtusely crenated, villous beneath; umbels many-flowered, crowded, petals rather larger than the calyx, nearly equal between themselves; nectariferous tube very short, nearly obsolete. 4. G. Native of New Holland. P. austràle, Sweet, ger. 68. but not of Willd. Ger. glomeràtum, Andr. ger. *icon.* P. austràle β, Willd. enum. 707. Petals white, 2 upper ones spotted with red.

Glomerate-flowered Stork's-bill. Fl. May, Aug. Clt. 1792. Pl. diffuse.

134 P. althæoìdes (Lher, ger. t. 10.) diffuse, procumbent; leaves cordate, ovate, villous, 3-lobed, toothed, upper ones sinuated; umbels many-flowered; flowers 5-anthered. 4. G. Jacq. coll. 4. p. 185. t. 21. f. 2. Ger. althæoìdes, Cav. diss. 4. t. 123. f. 2. Petals white, spotted with red in the middle, wedge-shaped, equal in length with the calyx.

Hollyhock-like Stork's-bill. Fl. April, June. Clt. 1724. Pl. procumbent.

Sect. XIV. Pela'rgium (from *πελαργος, pelargos*, a stork, see genus. D. C. prod. 1. p. 658. Pelargònium, Sweet, ger. no. 41.). Petals 5, unequal, 2 upper ones approximate. Stamens 10, unequal, 7 of which are antheriferous, 3 sterile ones awl-shaped.

Series I. *Isopetaloìdea* (from *ισος, isos*, equal, and *πεταλον, petalon*, a petal). D. C. prod. 1. p. 659. Petals nearly the same size and length.

* *Alchimilloìdea* (*plants with the habit of Alchimilla*). *D. C. prod. 1. p. 659. Stems herbaceous. Leaves cordate, palmately lobed. Petals small.*

135 P. inodòrum (Willd. hort. berl. t. 34.) stems herbaceous, diffuse; leaves cordately-ovate, obsoletely lobed, bluntly toothed, ciliated; umbels many-flowered, capitate; petals equal with the calyx as well as with each other. 4. G. Native of New Holland. Sweet, ger. t. 56. Lag. nov. spec. no. 272. Petals pale-purple, 2 superior ones marked with intense spots. Stamens all fertile, as in the rest of the New Holland species.

Scentless Stork's-bill. Fl. Mar. Aug. Clt. 1796. Pl. diffuse.

136 P. odoratíssimum (Ait. hort. kew. ed. 1. vol. 2. p. 419.) stem fleshy, short; branches herbaceous, long, diffuse; leaves roundish, cordate, soft; umbels usually 5-flowered. 4. G. Ger. odoratíssimum, Cav. diss. 4. t. 103. f. 1. Andr. ger. with a figure. Petals small, pale rose-coloured.

Very-sweet-scented Stork's-bill. Fl. May, Oct. Clt. 1724. Pl. diffuse.

137 P. grossularioìdes (Ait. hort. kew. 2. p. 42.) stems prostrate, tetragonal, very smooth; leaves cordate, roundish, deeply toothed; peduncles usually 2-flowered. 4. G. Ger. grossularioìdes, Lin. spec. 948. Cav. diss. 4. t. 119. f. 2. Flowers minute, pale flesh-coloured.

Gooseberry-like Stork's-bill. Fl. April, Aug. Clt. 1731. Pl. prostrate.

138 P. a'nceps (Ait. hort. kew. 2. p. 40.) stems decumbent, triquetrously 2-edged, smooth; leaves cordate, roundish, obsoletely lobed, toothed; umbels many-flowered. 4. G. Jacq. coll. 4. p. 184. t. 22. f. 3. Flowers small, larger than those of the foregoing species, reddish.

Two-edged-stemmed Stork's-bill. Fl. May, July. Clt. 1788. Pl. decumbent.

139 P. Acugna'ticum (Pet. Th. fl. acugn. p. 44. t. 13.) stems herbaceous, erect; leaves smooth, kidney-shaped, obsoletely lobed, dentately crenated; umbels many-flowered, capitate; petals length of the pilose, acuminated calyx. 4. G. Native of the island of Tristan d'Acugna. Petals wedge-shaped, red. P. clandestìnum of Lher. ger. ined. a native of New Zealand, is perhaps the same.

D'Acugna Stork's-bill. Fl. May, July. Clt. 1818. Pl. 1 ft.

140 P. clava'tum (Lher. ger. ined. no. 32.) stems herbaceous, erect, puberulous; leaves kidney-shaped, nearly undivided, pubescent, crenate-toothed; umbels many-flowered; nectariferous tube clavate, twice the length of the acuminated lobes of the calyx. 4. G.

Clavate-tubed Stork's-bill. Pl. 1 foot.

141 P. parviflòrum (Andr. ger. with a figure, under *Geràmium*,) plant prostrate; branches very slender; leaves cordate, slightly 5-lobed, crenated, obtuse, hairy; umbels many-flowered; petals all sublinear, nearly equal; nectariferous tube about the length of the calyx. 4. G. Flowers small, purplish-red.

Small-flowered Stork's-bill. Fl. May, July. Clt. 1800. Pl. prostrate.

142 P. di'stans (Lher. ger. ined. no. 35.) stems herbaceous, erect, tetragonal, smooth; leaves remote, roundish, 5-lobed, smooth, upper ones deeply jagged; umbels many-flowered, crowded, on long peduncles. 4. G.

Distant Stork's-bill. Pl. 1 foot.

143 P. tabula're (Lher. ger. t. 9.) stem ascending, pilose; leaves kidney-shaped, 3-5-lobed, obtuse, toothed at the apex,

smoothish; peduncles elongated, 2-4-flowered. ♃. G. Ger. tabulàre, Lin. spec. 947. but not of Burm. Ger. elongàtum, Cav. diss. 4. p. 233. t. 101. f. 3. Petals white, a little longer than the calyx. Leaves zonate.

Tabular Stork's-bill. Fl. May, Aug. Clt. 1775. Pl. diffuse.

144 P. PA'RVULUM (D. C. prod. 1. p. 660.) herbaceous, many-stemmed, erect; leaves pubescent, villous, cordate, 3-parted; lobes cut; peduncles usually 3-flowered; segments of calyx acute, pubescent. ⊙? H. P. nànum, Lher. ger. no. 41. but not of Sweet. Flowers small. Plant with the habit of *Erodium marítimum*.

Small Stork's-bill. Pl. ½ foot.

145 P. SENECIOÌDES (Lher. ger. t. 11.) stem herbaceous, erect; leaves bipinnatifidly jagged, smooth; peduncles generally 3-flowered; involucre and calyxes obtuse. ⊙. H. Flowers white, 2 superior petals spotted at the base.

Senecio-like Stork's-bill. Fl. June, Jul. Clt. 1775. Pl. ½ ft.

146 P. ALCHIMILLOÌDES (Willd. spec. 3. p. 656.) stem diffuse, villous; leaves cordate, palmately 5-lobed, villous; peduncles few-flowered; stigmas sessile. ♃. G. Ger. alchimilloìdes, Lin. vir. 345. Cav. diss. 4. t. 98. f. 1.

Alchimilla-like Stork's-bill. Fl. May, Oct. Clt. 1693. Pl. diffuse.

* * *Athamanthoídea (plants with the habit of Athamántha). D. C. prod. 1. p. 660. Stem suffruticose. Leaves pinnate or ternate; leaflets multifid.*

147 P. MI'NIMUM (Willd. spec. 3. p. 664.) stem hardly shrubby, erect; branches smooth; leaves pinnate; lower segments pinnatifid, upper ones linear-oblong, entire, and lobed; umbels many-flowered. ♄? G. Ger. minimum, Cav. diss. 4. p. 260. t. 121. f. 3. P. capnoìdes, Lher. ger. ined. no. 46.

Least Stork's-bill. Pl. ½ foot.

148 P. ATHAMANTHOÌDES (Lher. ger. ined. no. 47.) stem erect, hardly shrubby; branches rather herbaceous, angular; leaves clothed with cinereous tomentum, bipinnate, jagged; lobules linear-awl-shaped, acute; umbels compound. ♃? G.

Athamantha-like Stork's-bill. Pl. ½ foot.

149 P. ABROTANIFÒLIUM (Jacq. schœnbr. 2. t. 136.) stem suffruticose; leaves clothed with cinereous tomentum, palmately ternate; leaflets linear, trifid; umbels few-flowered; calyxes rather hispid. ♄. G. Ger. abrotanifòlium, Lin. fil. suppl. 304. Cav. diss. 4. p. 256. t. 117. f. 1. Corolla purplish.

Southernwood-leaved Stork's-bill. Fl. May, Aug. Clt. 1791. Shrub 1 foot.

150 P. FRUTICÒSUM (Willd. spec. 3. p. 689.) stem shrubby; leaves smooth, bipinnately decompound; lobes linear, acute; peduncles 2-flowered; nectariferous tube twice or thrice longer than the calyx. ♄. G. Ger. fruticòsum, Cav. diss. 4. p. 163. t. 122. f. 2. Petals oblong-cuneated, pale-violet, 2 superior ones largest.

Shrubby Stork's-bill. Shrub 1 foot.

151 P. INCÌSUM (Willd. spec. 3. p. 686.) stem shrubby; leaves ternate, dark-green; leaflets distant, 3-parted, and jagged; umbels 6-7-flowered; petals linear, flaccid; upper ones longest. ♄. G. Sweet, ger. 93. Ger. incìsum, Andr. bot. rep. 67. Petals white, 2 upper ones with a blood-coloured spot in the middle. Nectariferous tube nearly sessile.

Cut-leaved Stork's-bill. Fl. May, Aug. Clt. 1791. Shrub 1 to 3 feet.

152 P. CANE'SCENS (Sweet, ger. no. 93. in a note) stem shrubby; leaves ternate, canescent; segments aggregate, tripartitely-jagged, obtuse; petals linear, stiff, upper ones shortest; nectariferous tube pedicellate, 4-times the length of the calyx. ♄. G. Ger. incìsum, Andr. bot. rep. 67.? Very like the preceding. Petals white, upper ones spotted.

Canescent Stork's-bill. Fl. May, Aug. Clt.? Sh. 1 to 3 ft.

153 P. ARTEMISIÆFÒLIUM (D. C. prod. 1. p. 661.) stem shrubby; leaves smooth, bipinnately-decompound; lobes linear, acute; peduncles 1-2-flowered; nectariferous tube 5 times longer than the calyx. ♄. G. Petals linear, white, 2 superior ones marked with a linear red line. Burch. cat. afr. no. 2710. Very like *P. fruticòsum*.

Wormwood-leaved Stork's-bill. Fl. May, Aug. Clt. 1817. Shrub 1 foot.

154 P. RAMOSI'SSIMUM (Willd. spec. 3. p. 688.) stem shrubby, much branched; leaves pubescent, pinnate; leaflets distant, deeply-pinnatifid; umbels few-flowered; calyxes obtuse. ♄. G. Burm. afr. t. 34. f. 2. Ger. ramosíssimum, Cav. diss. 4. p. 260. Petals pale, 2 upper ones reflexed, as in *Hoárea*.

Much-branched Stork's-bill. Shrub 2 feet.

155 P. TENUIFÒLIUM (Lher. ger. t. 12.) stem fleshy, naked, erect; leaves hairy, bipinnately-decompound; lobes linear, awl-shaped; umbels many-flowered. ♄. G. Peduncles elongated, slender. Petals obovate-oblong, purple, 2 upper ones of a deeper colour.

Fine-leaved Stork's-bill. Fl. May, Aug. Clt. 1768. Shrub 1 to 2 feet.

156 P. HI'RTUM (Jacq. icon. rar. 3. t. 536. coll. 5. p. 144.) stem fleshy, scaly, decumbent; leaves hairy, bipinnately-decompound; segments linear, obtuse; umbels many-flowered. ♄. G. Sweet, ger. t. 113. Ger. hírtum, Cav. diss. 4. p. 258. t. 117. f. 2. Petals rose-coloured, 2 upper ones broadest, and spotted with purple. This species differs from *P. tenuifòlium* in the stem being decumbent, and in the lobes of the leaves being shorter.

Hairy Stork's-bill. Fl. April, Oct. Clt. 1768. Shrub decumbent.

157 P. CONFU'SUM (D. C. prod. 1. p. 661.) stem shrubby; leaves glaucous, smooth, decompound; segments wedge-shaped, deeply-toothed, lower ones divaricate; involucre many-leaved, and is ciliated, as well as the calyx. ♄. G. P. sanguíneum, Willd. enum. suppl. 48. but not of Sweet.

Confused Stork's-bill. Fl. June, Aug. Shrub 1 foot.

158 P. TRIPARTI'TUM (Sweet, ger. 115.) stem shrubby; leaves ternate, fleshy, deeply-toothed, glaucous; segments nearly sessile, wedge-shaped, middle one 3-parted and elongated; umbels many-flowered; nectariferous tube length of pedicel, but 3 times longer than the calyx. ♄. G. Petals cream-coloured, narrow, the two superior ones marked with an elongated purple spot at the base.

Var. α; umbels 3-flowered. P. tripartìtum, Willd. spec. 3. p. 683. P. trífidum, Jacq. schœnbr. 2. t. 134.

Var. β; umbels 5-6-flowered. P. frágile, Willd. spec. 3. p. 686. Ger. frágile, Andr. bot. rep. t. 37. G. tripartìtum, Sweet, ger. t. 115.

Three-parted-leaved Stork's-bill. Fl. May, Aug. Clt. 1789. Shrub 1 to 2 feet.

159 P. SPINÒSUM (Willd. spec. 3. p. 681.) stem shrubby; leaves wedge-shaped, trifid, toothed; petioles and stipulas permanent, spinescent; umbels compound, few-flowered. ♄. G. Paters. itin. ed. gall. t. 10. Flowers almost like those of the preceding species.

Spiny Stork's-bill. Fl. May, June. Clt. 1795. Shrub 1 to 2 feet.

* * * *Gibbòsa. Stem shrubby, fleshy. Leaves ternate or pinnate. Petals of dirty-yellowish brown.*

160 P. GIBBÒSUM (Willd. spec. 3. p. 684.) stem shrubby, fleshy, with tumid knots; leaves pinnate, with 1-2 pairs of segments and an odd one, obtuse, cuneated, deeply-toothed, terminal one trifid; umbels many-flowered. ♄. G. Sweet, ger. t. 61.

Ger. gibbòsum, Lin. spec. 946. Cav. diss. 4. t. 109. f. 1. Petals of a dirty greenish-yellow colour, sweet-scented in the evening.

Gibbous-stemmed Stork's-bill. Fl. May, Oct. Clt. 1712. Shrub 1 to 2 feet.

161 P. apiifòlium (Jacq. ecl. 1. t. 27.) stem shrubby, fleshy, thick; leaves pinnate, with wedge-shaped, pinnatifid leaflets, and jagged lobes; umbels many-flowered. ♄. G. Petals with a dirty-yellow margin, and dark-brown disk. Anthers 7, with the nectariferous tube hardly conspicuous.

Celery-leaved Stork's-bill. Shrub 1 to 2 feet.

* * * * *Trístia* (from *tristis*, sad; colour of flowers). *Plants almost stemless. Roots tuberous and fasciculately-tuberous. Leaves decompound, jagged, or undivided and lobed. Petals from yellow to dirty-brown.*

162 P. fla'vum (Ait. hort. kew, ed. 1. vol. 2. p. 418.) subcaulescent; leaves bipinnately-decompound, jagged, hairy; segments linear; umbels many-flowered. ♃. G. Sweet, ger. 254. Ger. daucifòlium, Murr. comm. goett. 1780. p. 13. t. 4. Cav. diss. 4. t. 120. f. 2. Ger. flàvum, Lin. fil. suppl. 257. Petals dirty-yellow, smelling at night.

Var. β. daucoìdes (Jacq. icon. rar. 3. t. 522.) lobes of leaves rather lanceolate; flowers pale-yellow, marked with red lines.

Yellow-flowered Stork's-bill. Fl. Jul. Oct. Clt. 1724. Pl. 1 ft.

163 P. millefolia'tum (Sweet, ger. 230.) plant nearly stemless; leaves decompound, smooth; leaflets jagged, with channelled, linear segments; umbels many-flowered; calyxes reflexed; nectariferous tube almost sessile, and 5 times longer than the calyx. ♃. G. Root tuberous, branching out into many tubers of different sizes and shapes. Petals of a dingy-brown colour, and darker in the centre.

Milfoil-leaved Stork's-bill. Fl. June, Oct. Pl. ½ foot.

164 P. appendicula'tum (Willd. spec. 3. p. 651.) stemless; leaves bipinnate, villous; lobes linear; stipulas adnate to the petioles, dilated and ovate at the apex; umbels many-flowered, hairy. ♃. G. Ger. appendiculàtum, Cav. diss. 4. p. 262. t. 121. f. 2. Corolla violet.

Appendiculate Stork's-bill. Pl. ½ foot.

165 P. filipendulifòlium (Sweet, ger. t. 85.) nearly stemless; leaves hairy, pinnate; leaflets bipinnate, with ovate-toothed, acutish segments; umbels many-flowered, rather hairy. ♃. G. P. tríste β, Sims, bot. mag. 1641. The flowers are the colour of those of *P. tríste*.

Dropwort-leaved Stork's-bill. Fl. May, Oct. Clt. 1812. Pl. 1 ft.

166 P. heracleifòlium (Sweet, ger. t. 211.) stemless; umbels many-flowered; lower leaves oblong, entire, and jagged; upper ones pinnatifid and pinnate, clothed with a kind of powdery pubescence, with the segments and leaflets oblong, obtuse, sinuately lobed, and with unequal, blunt teeth; nectariferous tube 3 times longer than the reflexed calyx. ♃. G. Root a hard woody tuber. Petals of a dull-greenish straw-colour, marked near the centre with 2 obscure, purplish spots.

Cow-Parsnip-leaved Stork's-bill. Fl. May, Oct. Clt. 1820. Pl. 1 foot.

167 P. tri'ste (Ait. hort. kew, 2. p. 418.) nearly stemless; leaves hairy, pinnate; leaflets pinnatifid, with linear, acute segments; umbels many-flowered. ♃. G. Delaun. herb. amat. t. 27. Ger. tríste, Corn. can. t. 110. Cav. diss. 4. t. 107. f. 1. Petals obovate-oblong, pale greenish-yellow, spotted with brown, fragrant in the evening.

Sad-flowered Stork's-bill. Fl. May, Oct. Clt. 1632. Pl. 1 ft.

168 P. schizope'talum (Sweet, ger. 232.) stem scaly; leaves ternate or trifid, obtuse, waved, hairy; lateral leaflets 2-lobed, intermediate ones large, hardly lobed, all toothed; umbels many-flowered; petals nearly equal, 2-parted, with the segments multifid; nectariferous tube 3 times longer than the calyx. ♄. G. Petals upper ones pale-yellow, lower ones brownish-purple. Root tuberous. Stem short.

Cut-petalled Stork's-bill. Fl. June, Oct. Clt. 1821. Pl. ½ ft.

169 P. loba'tum (Willd. spec. 3. p. 650.) nearly stemless; leaves cordate, tomentose beneath, bluntly 3-5-lobed, sinuately-toothed; scape subdivided; umbels many-flowered. ♃. G. Sweet, ger. 51. Ger. lobàtum, Cav. diss. 4. p. 250. t. 114. f. 2. Petals obovate-oblong, blackish, with the base and margins yellow. Stamens usually 6, rarely 9-10.

Lobed-leaved Stork's-bill. Fl. May, Oct. Clt. 1710. Pl. 1 ft.

170 P. pulverule'ntum (Sweet, ger. 3. t. 218.) nearly stemless; umbels many-flowered; scape rather branched; leaves roundish-cordate, somewhat lobed, crenated, clothed with powdery tomentum, fleshy; superior petals smallest, with 2 spots each. ♃. G. Root a tuber, covered with rough cracked skin. Petals 3, lower ones dark-velvety, with a yellowish margin; upper ones yellowish, with 2 dark velvety marks near the apex.

Powdery-leaved Stork's-bill. Fl. May, Aug. Clt. 1822. Pl. ½ foot.

171 P. pedicella'tum (Sweet, ger. 3. t. 250.) nearly stemless; leaves smooth, ciliated, fleshy, 5-7-lobed, toothed, reflexed at the apex; stipulas cordate, acute; umbels many-flowered; flowers on long pedicels; calyxes reflexed; petals nearly equal; nectariferous tube 5 times longer than the calyx. ♃. G. Root a tuber, covered with brown bark. Petals lower ones dark-purple, edged with pale-yellow, 2 upper ones pale greenish-yellow, marked with a bifid, purplish spot.

Pedicellate-flowered Stork's-bill. Fl. May, Aug. Clt. 1822. Pl. 1 foot.

172 P. lu'ridum (Sweet, ger. 3. t. 281.) leaves ovate, bluntly toothed or cut, smooth, or slightly pubescent; scape simple; umbels many-flowered, on very long pedicels; petals nearly equal, obovate, at length reflexed; nectariferous tube 5-times longer than the calyx; root large, tuberous, covered with wrinkled scaly bark. ♃. G. Ger. lùridum, Andr. ger. icon. P. huræfòlium, Sweet, in colv. cat. Petals straw-coloured, of a brownish-copper colour towards the apex.

Lurid-flowered Stork's-bill. Fl. Jul. Dec. Clt. 1811. Pl. 1 ft.

* * * * * *Fúlgido* (from *fulgido*, to be shining; brilliancy of flowers) *Stem short and rather fleshy. Leaves divided, cut, and toothed. Petals scarlet or blood-coloured.*

173 P. a'rdens (Sweet, ger. 45.) nearly stemless; leaves clothed with soft villi, cordate, ovate-oblong, ternate, or 3-5-lobed; lobes obtuse, sinuately-toothed; scape branched; umbels many-flowered. ♄. G. Lodd. bot. cab. 139. Ger. árdens, Andr. ger. icon. Petals obovate, fire-coloured. Nectariferous tube very long. Stamens usually 6. Said to be a hybrid between *P. lobàtum* and *P. fúlgidum*.

Glowing Stork's-bill. Fl. Mar. Aug. Clt. 1810. Sh. 1 to 2 ft.

174 P. sanguíneum (Wendl. coll. 2. p. 53. Sweet, ger. t. 76. but not of Willd.) stem fleshy, thick; leaves pilose, pinnate, with jagged, pinnatifid, decurrent leaflets, and linear-lanceolate lobes; umbels many-flowered; petals obovate, rather oblong. ♄. G. Flowers of an intense purplish-scarlet colour, on long pedicels.

Blood-coloured-flowered Stork's-bill. Fl. April, Aug. Sh. 1 ft.

175 P. fu'lgidum (Ait. hort. kew. 2. p. 422.) stem shrubby, fleshy; leaves ternate; leaflets sessile, wedge-shaped, deeply toothed, middle one largest, pinnatifid; umbels many-flowered, usually jointed; pedicels rather refracted after flowering. ♃. G. Sweet, ger. 69. Ger. fúlgidum, Lin. spec. 945. Cav. diss. 4. t. 116. f. 2. Flowers scarlet.

Shining-flowered Stork's-bill. Fl. Mar. Oct. Clt. 1723. Sh. 1 to 2 feet.

* * * * * * *Bicolòra. Stem suffruticose. Leaves lobed, hairy. Petals marked with a broad purple spot in the middle.*

176 P. BÍCOLOR (Ait. hort. kew. 2. p. 425.) stem suffruticose; leaves cordate, trifid, waved, hairy, obtuse, toothed; lateral segments 3-lobed, middle ones 5-lobed; stipulas kidney-shaped, entire; umbels crowded, many-flowered; calyx reflexed. ♄. G. Sims, bot. mag. 201. Sweet, ger. 97. Ger. bícolor, Jacq. hort. vind. 3. t. 39. Cav. diss. 4. t. 111. f. 1. Petals cuneate-oblong, distinct, sometimes pale, sometimes dark-purple. Sweet, ger. l. c. f. 2. with white margins.

Two-coloured-flowered Stork's-bill. Fl. July, Aug. Clt. 1778. Shrub 2 to 3 feet.

177 P. ELE'CTUM (Sweet, ger. 238.) stem much branched; branches slender, flexuous; leaves cordate, profoundly 3-lobed, smooth, serrately toothed; lobes cuneated, divaricate, spreading; intermediate one 3-lobed; stipulas cordate, acute; peduncles usually 3-flowered; nectariferous tube very rough, twice the length of the calyx. ♄. G. Ger. grandiflòrum, var. parvifoliàtum, Andr. ger. icon. Petals white, with 2 red spots at the apex of each, and with 2 branched lines at the base.

Elect Stork's-bill. Fl. May, Oct. Clt.? Shrub 1 to 3 feet.

178 P. IMBRICA'TUM (Sweet, ger. t. 65.) stem suffruticose; leaves cordate, waved, hairy, subtrifid; lobes obtuse, toothed, lateral ones bifid, terminal one lobed; stipulas kidney-shaped, toothed; umbels crowded, many-flowered. ♄. G. Petals obovate, imbricate, of the same colour as *P. bicolor.* Perhaps a hybrid.

Imbricate-petalled Stork's-bill. Fl. May, Aug. Clt. 1800. Shrub 1 to 3 feet.

* * * * * * * *Cortùsina (from the shape of the leaves being like those of Cortùsa). Stem suffruticose, fleshy. Leaves oblong, or usually cordate, rather cut. Stipulas lanceolate, spreading, acute. Roots tuberously fasciculate. Stamens 7-6, rarely 5.*

179 P. PA'LLENS (Sweet, ger. t. 148.) stem suffruticose, fleshy, decumbent; floriferous branches erect; leaves 3-parted, pilose, lateral segments smallest, lobately toothed, terminal one elongated, deeply toothed; umbels 4-5-flowered; petals spreading, lower ones oblong, upper ones somewhat spatulate; nectariferous tube very long. ♄. G. Ger. pállens, Andr. ger. icon. Petal from white to a cream-colour.

Pale Stork's-bill. Fl. May, Sept. Clt. 1800. Shrub 2 ft.

180 P. PULCHE'LLUM (Curt. bot. mag. t. 524. but not of Willd.) stem suffruticose, rather pilose; scape divided; leaves oblong, lobately-pinnatifid; umbels many-flowered; nectariferous tube slender, 3-times longer than the calyx. ♄. G. Sweet, ger. t. 31. Petals obovate, white, 2 upper ones with a small roundish spot in the middle, 3 lower ones lined with red.

Neat Stork's-bill. Fl. Mar. May. Clt. 1795. Shrub 2 ft.

181 P. PI'CTUM (Pers. ench. 2. p. 227.) nearly stemless; leaves cordate, oblong, rather runcinate, toothed, tomentose; scape branched; umbels many-flowered; involucre leafy. ♄. G. Ger. pictum, Andr. bot. rep. 168. Petals white, with a long red spot in the centre of each.

Painted-flowered Stork's-bill. Shrub 2 to 3 feet.

182 P. ECHINA'TUM (Curt. bot. mag. t. 309.) stem thick, fleshy; leaves ovate, cordate, rather lobed, crenated, villous beneath; stipulas permanent, spiny; umbels many-flowered; nectariferous tube slender, twice the length of the calyx. ♄. G. Sweet, ger. 154. P. hamàtum, Jacq. schoenbr. 2. t. 138. Petals oblong, somewhat cuneated, white; 2 superior ones with a red patch in the centre. Anthers 6.

Echinated-stemmed Stork's-bill. Fl. June, Oct. Clt. 1789. Shrub 1 to 2 feet.

183 P. ARMA'TUM (Sweet, ger. 3. t. 214.) umbels many-flowered, panicled; leaves cordate, 5-7-lobed, crenated, smooth above and shining, tomentose and many-nerved beneath; stipulas awl-shaped, permanent, spinescent, straight; stem straight, thick, and fleshy. ♄. G. Petals of a bright purple-colour, with a darker spot in the centre of each, upper ones obcordate, lower ones oblong and narrower.

Armed-stemmed Stork's-bill. Fl. March, July. Clt. 1789. Shrub 1 to 2 feet.

184 P. CRASSICAU'LE (Lher. ger. t. 26.) stem fleshy, branched, smooth; leaves kidney-shaped, rather acuminate, toothed, silky on both surfaces; umbels many-flowered: bracteas 4-times shorter than the pedicels; petals hardly emarginate. ♄. G. Anthers 5. Petals white (Sweet, ger. 2. t. 192. f. *a.*) or the 2 superior ones are spotted with red (Sweet, ger. 2. t. 192. f. *b.*)

Thick-stemmed Stork's-bill. Fl. Ju. Oct. Clt. 1786. Shrub 1 to 3 feet.

185 P. PRIMU'LINUM (Sweet, ger. no. 14. in a note) stem fleshy, branched, smooth; leaves kidney-shaped, rather acuminated, toothed, silky on both surfaces; umbels many-flowered; bracteas one-half shorter than the pedicels; petals obcordate. ♄. G. P. crassicaúle, Curt. bot. mag. t. 477. Anthers 7. Petals white, each with a blood-coloured spot in the middle. Flowers smelling like the primrose.

Primrose-scented Stork's-bill. Fl. Ju. Aug. Clt.? Sh. 2 ft.

186 P. CORTUSÆFÒLIUM (Lher. ger. t. 25.) stem thick, fleshy; leaves cordate, deeply lobed, waved, obtusely-toothed, pubescent; umbels many-flowered; nectariferous tube 4-times longer than the calyx. ♄. G. Sweet, ger. t. 14. G. cortusæfòlium, Andr. bot. rep. 121. Petals obovate, rather obcordate, from white to reddish; 2 superior ones lined at the base, 3 lower ones rather spotted in the middle.

Cortusa-leaved Stork's-bill. Fl. Ju. Oct. Clt. 1786. Sh. 2 ft.

187 P. RENIFÓRME (Curt. bot. mag. t. 493.) stem shrubby, flexuous, rather fleshy; leaves kidney-shaped, crenate-toothed, tomentose; umbels 3-6-flowered; stipulas permanent, dilated at the base; nectariferous tube nearly sessile, 3-times longer than the calyx. ♄. G. Sweet, ger. t. 48. Ger. renifórme, Andr. bot. rep. 108. Petals purple, rather spotted in the centre, obovate, retuse.

Kidney-shaped-leaved Stork's-bill. Fl. Jan. Dec. Clt. 1791. Shrub 1 to 2 feet.

* * * * * * * * *Pinguifòlia* (from *pinguis*, fat, and *folium*, a leaf; leaves fleshy;) *stem shrubby, fleshy, rather climbing; leaves peltate or cordate, 5-lobed, fleshy. Nectariferous tube length of pedicel. Stipulas broad-ovate.*

188 P. PINGUIFÒLIUM (Sweet, ger. t. 52.) stem shrubby; branches fleshy, diffuse, rather angular; leaves kidney-shaped, cordate, 5-lobed, rather crenate, fleshy, puberulous; lobes obtuse, mutic; umbels many-flowered. ♄. G. Ger. hederìnum flòre álbo, Andr. ger. icon. Petals obovate-oblong, pale rose-coloured, 2 superior ones spotted with purple. Perhaps a hybrid from *P. peltàtum* and *P. latéripes.*

Fat-leaved Stork's-bill. Fl. May, Oct. Clt.? Sh. straggling.

189 P. LATE'RIPES (Lher. ger. t. 24.) stem shrubby; branches fleshy, terete; leaves cordate, 5-lobed, rather toothed, fleshy, smooth; umbels many-flowered. ♄. ◡. G. Petals pale-purple, 2 upper ones marked with deeper lines oblongly-ovate.

Var. α, viridifòlium (Sweet, hort. brit. 83.) leaves green. Andr. ger. icon.

Var. β, zonàtum (Sweet, l. c.) leaves zonate.

Var. γ,ròseum (Sweet, l. c.) flowers rose-coloured.

Var. δ, albomarginàtum (D. C. prod. 1. p. 666.) leaves rather curled, edged with white.

Var. ε, Walnèri (D. C. prod. 1. p. 666.) leaves bluntly lobed;

umbels few-flowered. An intermediate plant between *P. latéripes* and *P. peltàtum*.

Side-stalked or Ivy-leaved Stork's-bill. Fl. June, Aug. Clt. 1787. Shrub straggling.

190 P. PELTA'TUM (Ait. hort. kew. 2. p. 427.) stem shrubby; branches fleshy, angular; leaves peltate, 5-lobed, quite entire, fleshy; umbels few-flowered. ♄. ◡. G. Ger. peltàtum, Lin. spec. 947. Cav. diss. 4. p. 232. t. 100. f. 1. P. peltàtum, Curt. bot. mag. t. 20. Flowers pale-purple.

Var. β, zonàtum (D. C. prod. 1. p. 666.) leaves zonate. Haw. pl. succ. p. 307.

Var. γ, variegàtum (Andr. ger. icon.) leaves edged with white or yellow.

Peltate-leaved Stork's-bill. Fl. May, Oct. Clt. 1701. Sh. cl.

191 P. SCUTA'TUM (Sweet, ger. t. 95.) stem shrubby; branches angular, puberulous, as well as the petioles; leaves fleshy, rather peltate, 5-lobed, glandularly-crenated, pubescent; umbels 7-8-flowered; petals spreading; antheriferous filaments 7, 2 of which are very short; nectariferous tube nearly sessile, 3-times longer than the calyx. ♄. ◡. G. Flowers white, 2 superior petals marked each with 2 branched lines of purple.

Saucer-leaved Stork's-bill. Fl. May, Oct. Clt. 1701. Sh. cl.

Series II. *Platypétala* (from πλατυς, *platys*, broad, and πεταλον, *petalon*, a petal). *The 2 superior petals are broader and shorter than the lower ones, very blunt.*

192 P. OVA'LE (Lher. ger. t. 28. but not of Burm.) stem suffruticose, twisted, slender, prostrate; branches, petioles, and peduncles hispid; leaves oval, acute, toothed, canescent; umbels usually 5-flowered, on long peduncles; nectariferous tube shorter than the calyx. ♄. G. Petals purplish, oblong-obovate, nearly equal, 2 superior ones broadest, lined with more intense purple. Stamens 7, fertile.

Oval-leaved Stork's-bill. Fl. May, Aug. Clt. 1774. Sh. 2 ft.

193 P. E'LEGANS (Willd. spec. 3. p. 655.) stem shrubby, erect; leaves elliptic-roundish, sharply serrated, obtuse, stiff, smooth; umbels usually 5-flowered; petals all obovate; nectariferous tube shorter than the calyx. ♄. G. Ger. élegans, Andr. bot. rep. t. 28. P. élegans, Sweet, ger. t. 36. Petals white, 2 superior ones marked at the base with intense branched lines. Stamens 7, fertile, with puberulous filaments.

Var. α, màjor (Sweet, ger. 36. f. *a*.).

Var. β, minor (Sweet, ger. t. 36. f. *b*.).

Elegant Stork's-bill. Fl. May, Aug. Clt. 1795. Sh. 1-2 ft.

Series III. *Anisopétala* (from ανισος, *anisos*, unequal, and πεταλον, *petalon*, a petal). *The 2 upper petals are longer and broader than the lower ones. Stems shrubby.*

§ 1. *Glaucescéntia. Leaves smooth or smoothish, and more or less glaucous.*

* *Petals white, the 2 superior ones usually spotted or lined with red.*

194 P. GLAU'CUM (Lher. ger. t. 29.) plant quite smooth and glaucous; leaves lanceolate, entire, acuminated; peduncles 1-2-flowered; nectariferous tube 5-times longer than the calyx. ♄. G. Sweet, ger. t. 57. Ger. glaúcum, Andr. ger. icon. Ger. lanceolàtum, Cav. diss. 4. t. 102. f. 2. Curt. bot. mag. t. 56. but not of Andr. Petals white, 2 superior ones roundish, with blood-coloured bases.

Glaucous Stork's-bill. Fl. Ju. Aug. Clt. 1775. Sh. 1 to 2 ft.

195 P. LANCEOLA'TUM (Andr. ger. icon. under *Geránium*,) smooth, branched, spreading, purplish; leaves oblong-lanceolate, or lanceolate, acuminated, green, quite entire; peduncles 1-flowered, axillary; nectariferous tube about 3-times longer than the calyx; petals obovately emarginate, lower ones rather spatulate. ♄. G. Petals white, upper ones marked with a branched, large purple spot, lower ones with 2 faint lines.

Lanceolate-leaved Stork's-bill. Fl. July, Aug. Clt. 1775. Shrub 1 foot.

196 P. DIVERSIFÒLIUM (Wendl. obs. p. 51.) smooth, glaucous; leaves lanceolate, quite entire or trifid, lower ones toothed; peduncles usually 1-flowered, panicled. ♄. G. Flowers like those of the preceding species. Leaves rather bearded at the apex.

Diverse-leaved Stork's-bill. Fl. June, Aug. Clt. 1794. Sh. 1 to 2 feet.

197 P. TRIFOLIA'TUM (Andr. ger. icon. under *Geránium*,) plant quite smooth, glaucous; leaves trifoliate; leaflets quite entire, linear, acuminated at both ends, lateral ones shortest; pedicels 1-flowered; stipulas linear-awl-shaped. ♄. G. P. lævigàtum, Lher. herb. and ger. ined. no. 91. but not of Willd. P. oxyphýllum, D. C. prod. 1. p. 667.

Trifoliate Stork's-bill. Shrub 1 to 2 feet.

198 P. CUSPIDA'TUM (Willd. enum. suppl. 47.) plant quite smooth, and glaucescent; leaves ovate, acute, glaucous, rather deeply and remotely serrated; peduncles usually 3-flowered. ♄. G. Very nearly allied to *P. glaúcum*, according to Willd. Flowers pale-red, 2 superior petals with 2 deep-purple branched lines at the base.

Cuspidate-leaved Stork's-bill. Fl. June, Aug. Shrub 1 to 3 feet.

199 P. SORÒRIUM (Willd. enum. suppl. 48.) plant quite smooth and glaucous; leaves deeply 3-parted, with hatchet-shaped segments, deeply serrated; peduncles 3-flowered. ♄. G. Said to be a hybrid between *P. grandiflòrum* and *P. glaúcum*. Petals pale-flesh-coloured, 2 upper ones painted with 2 branched, blood-coloured lines.

Sister Stork's-bill. Fl. June, Aug. Clt.? Shrub 1 to 2 ft.

200 P. LÆVIGA'TUM (Willd. spec. 3. p. 685.) plant quite smooth and glaucous; leaves trifid or ternate; segments trifid; wedge-shaped, with linear lanceolate lobes; peduncles usually 2-flowered. ♄. G. Ger. lævigàtum, Lin. fil. suppl. 306. Cav. diss. 4. t. 121. f. 1. Flowers white, with red lines.

Var. β, compósitum (Lher. ger. ined. no. 92.) leaves ternate, lateral segments undivided, middle ones 3-parted and somewhat pinnatifid; upper leaves trifid; nectariferous tube very long.

Smooth-trifid-leaved Stork's-bill. Fl. June, Aug. Clt.? Shrub 1 to 2 feet.

201 P. GRANDIFLÒRUM (Willd. spec. 3. p. 674.) plant smooth and glaucous; leaves 5-lobed, palmatifid, cordate at the base; lobes toothed towards the apex; peduncles 3-flowered; nectariferous tube 4-times longer than the calyx; petals 4-times longer than the calyx. ♄. G. Sweet ger. 29. Ger. grandiflòrum, Andr. bot. rep. t. 12. but not of Lin. Calyx and peduncles rather pilose. Petals white, 2 superior ones cuneately-obovate, striped with blood-colour at the base.

Var. β; flowers rose-coloured. This variety sometimes occurs in the gardens under the name of *P. nóbilis*.

Great-flowered Stork's-bill. Fl. May, Oct. Clt. 1794. Shrub 1 to 3 feet.

202 P. VARIEGA'TUM (Willd. spec. 3. p. 674.) plants smooth and glaucous; leaves 3-5-lobed, palmate-parted, with trifid toothed segments; stipulas ovate, cordate, acute; peduncles usually 2-flowered; nectariferous tube 5-times longer than the calyx; petals 3-times longer than the calyx. ♄. G. Ger. variegàtum, Lin. fil. suppl. 305. Cav. diss. 4. p. 251. t. 118. f. 3. The 2 superior petals are marked with branched, blood-coloured lines, the rest whitish.

Variegated-flowered Stork's-bill. Fl. May, Oct. Clt. 1812. Shrub 1 to 3 feet.

203 P. ALBIFLÒRUM (Spin. cat. 1818. p. 30.) plants smooth and glaucous; leaves 3-lobed; lobes obovate, acutely toothed at the apex; petioles, pedicels, and calyxes puberulous; peduncles 2-flowered; nectariferous tube as well as the upper petals about 3-times longer than the calyx. ♄. G. P. pàtulum, Spin. cat. Petals white, 2 upper ones striated, with blood-coloured lines. Perhaps a hybrid.

White-flowered Stork's-bill. Shrub 1 to 3 feet.

204 P. CÓLLÆ (Spin. cat. hort. 1818. p. 31.) plant glaucous and puberulous; leaves cuneated at the base, trifid; lobes acutely toothed; peduncles 4-5-flowered, and are, as well as the branches, hispid; nectariferous tube one-half shorter than the calyx; petals twice the length of the calyx. ♄. G. Petals white, 2 superior ones marked with branched, blood-coloured lines. Perhaps a hybrid.

Colla's Stork's-bill. Fl. June, Aug. Clt.? Sh. 1 to 3 feet.

205 P. BELLA'RDII (Spin. cat. hort. 1818. p. 30.) plant glaucous and hispid; leaves palmately 5-7-cleft; lobes acutely toothed; peduncles 4-10-flowered; nectariferous tube one-half shorter than the calyx; petals narrow, about twice the length of the calyx. ♄. G. Petals white, spotless.

Bellardi's Stork's-bill. Fl. June, May. Clt.? Sh. 1 to 2 ft.

** *Petals rose-coloured or violet, the 2 upper ones usually striped.*

206 P. PA'TULUM (Jacq. icon. rar. 3. t. 541. coll. 4. p. 187.) plant smooth and glaucous; leaves on very long petioles, cordately kidney-shaped, 3-5-cleft, toothed; peduncles 2-flowered; nectariferous tube 3-times longer than the calyx; petals lanceolate-wedge-shaped, 2 upper ones rather emarginate. ♄. G. Stamens 6, fertile. Petals rose-coloured, 2 upper ones marked with a blood-coloured circle.

Spreading Stork's-bill. Fl. April, July. Clt. 1812. Shrub 1 to 3 feet.

207 P. SANICULÆFÒLIUM (Willd. spec. 6. p. 673.) plant smooth and glaucous; leaves on long stalks, roundish, cordate, 5-cleft, toothed, zonate above; peduncles 4-5-flowered; nectariferous tube length of calyx; petals twice the length of the calyx. ♄. G. P. cortusæfòlium, Jacq. icon. rar. 3. t. 539. Ger. tabulàre, Burm. ger. t. 1. Cav. diss. 4. t. 100. f. 2. Ger. hederæfòlium, Dum. Cours. bot. cult. 4. no. 62. P. Hippocrèpis, Lher. ger. ined. no. 94. The 2 upper petals obovate, large, violet, striped with purple. The 3 lower ones pale rose-coloured, nearly linear.

Sanicle-leaved Stork's-bill. Fl. June, Sept. Clt. 1806. Shrub 1 to 3 feet.

208 P. HEPATICIFÒLIUM (Spreng. nov. prov. p. 31.) plant smooth and glaucescent; leaves deeply 3-lobed, concave, zonate above, rough beneath; lobes wedge-shaped, deeply-toothed; peduncles usually 2-flowered. ♄. G. Petals pale rose-coloured, 2 superior ones 3-lobed, 3 lower ones linear and whitish.

Hepatica-leaved Stork's-bill. Fl. May, Aug. Clt. 1791. Shrub 1 to 3 feet.

209 P. FUSCA'TUM (Jacq. icon. rar. 3. t. 340. coll. 4. p. 186.) plant glabrous and rather glaucous; leaves cordate, 5-lobed, toothed, glaucous beneath, younger ones zonate on the upper surface; uppermost ones somewhat 3-5-parted; peduncles 4-flowered; nectariferous tube length of calyx. ♄. G. Two superior petals obovate, broad, of an intense rose-colour, striped with purple, the 3 lower ones linear and pale rose-coloured.

Clouded-petalled Stork's-bill. Fl. May, Aug. Clt. 1812. Shrub 1 to 3 feet.

210 P. GHILÌNI (Spin. cat. 1818. p. 31.) plant rather glaucous and smooth; leaves somewhat wedge-shaped, 3-5-cleft; lobes ovate, acutely serrated, stiff; peduncles 4-flowered; nectariferous tube nearly equal in length to the calyx. ♄. G. Petals of a purple rose-colour, 2 upper ones lined.

Ghilini's Stork's-bill. Shrub 1 to 2 feet.

§ 2. *Lineàta. Flowers white or very pale rose-coloured. Two upper petals marked with intense red lines. Leaves ovate, undivided.*

211 P. BETU'LINUM (Ait. hort. kew. 2. p. 429.) leaves ovate, unequally serrated, smoothish; stipulas ovate-lanceolate; peduncles 2-4-flowered; nectariferous tube shorter than the calyx. ♄. G. Ger. betùlinum, Lin. spec. 964.—Burm. afr. t. 33. f. 1. and 2. Curt. bot. mag. 148. Petals white or rose-coloured, striped with blood-coloured veins.

Birch-leaved Stork's bill. Fl. May, Oct. Clt. 1759. Shrub 1 to 4 feet.

212 P. FORMOSÍSSIMUM (Pers. ench. 2. p. 231. Sweet, ger. 215.) umbels of several flowers; leaves ovate, acute, concave, stiff, rather lobed, unequally and cartilaginously toothed, truncate, many-nerved; bracteas ovate, rather shorter than the pedicels; nectariferous tube 3-times shorter than the calyx. ♄. G. P. formòsum, Desf. arbr. 2. p. 459. P. speciòsum, Andr. ger. icon. Petals all white, 2 upper ones sometimes furnished with 2 branched lines at the base of each.

Very-shewy Stork's-bill. Fl. My. Oct. Clt. 1800. Sh. 1 to 3 ft.

§ 3. *Tomentòsa. Petals white, narrow. Leaves cordate, tomentose. Stipulas spreading.*

213 P. TOMENTÒSUM (Jacq. icon. rar. 3. t. 537.) stem shrubby, fleshy; branches, leaves, and peduncles hairy-tomentose; leaves cordate, hastately 5-lobed, very soft; umbels many-flowered. panicled; nectariferous tube 3-times shorter than the calyx. ♄. G. Sweet, ger. 168. Petals white, coloured with short blood-coloured lines. Leaves smelling strong of peppermint.

Var. β, bicolòrum (D. C. prod. 1. p. 671.) 2 superior petals lilac, and marked with a branched spot, lower ones white, with a purple stripe in the middle.

Tomentose Stork's-bill. Fl. May, Aug. Clt. 1790. Shrub 1 to 3 feet.

214 P. RIBIFO'LIUM (Jacq. icon. rar. 3. t. 538. coll. 5. p. 141.) stem shrubby, fleshy; branches and peduncles pilosely-hispid; leaves cordate, hastately 5-lobed, scabrous; umbels many-flowered; nectariferous tube length of calyx. ♄. G. Petals and filaments white. Anthers orange-coloured.

Currant-leaved Stork's-bill. Fl. May, Aug. Clt. 1798. Shrub 1 to 3 feet.

215 P. ODORÍFERUM (Andr. ger. icon. under *Gerànium*,) very hairy and rough; leaves cordate, lobed unequally, and acutely toothed; umbels 2-3-flowered; nectariferous tube rather longer than the calyx; petals obcordate. ♄. G. Plant sweet-scented. Petals white, upper ones with red branched veins.

Odoriferous Stork's-bill. Fl. May, Oct. Shrub 1 to 3 feet.

§ 4. *Papilionàcea. Leaves cordate, flat, toothed, rarely lobed. Lower petals linear, upper ones purplish, streaked with darker lines.*

216 P. PAPILIONA'CEUM (Ait. hort. kew. 2. p. 423.) branches, leaves, and peduncles rather pilose; leaves cordate, roundish, angularly-toothed; umbels panicled, many-flowered; lower petals awl-shaped, linear, shorter than the calyx. ♄. G. Ger. papilionàceum, Lin. spec. 945. Cav. diss. 4. t. 112. f. 1.—Dill. hort. elth. 128. f. 155. P. papilionàceum, Sweet, ger. t. 27. Superior petals purplish, white at the base, and brownish in the middle; lower petals whitish.

Butterfly Stork's-bill. Fl. April, July. Clt. 1724. Shrub 1 to 3 feet.

217 P. staphysagroìdes (Sweet, ger. new series, t. 98.) stems erect, shrubby, rather branched; the whole plant villously pilose; leaves cordate, very soft, deeply 3-5-lobed, acute; lobes divaricate, unequally and sinuately-toothed; upper ones 3-lobed, with the lobes nearly entire; umbels many-flowered; petals cut at the apex; style pilose. ♄. G. Upper petals purple, with a darker patch near the apex, lower ones darkish-lilac.

Staves acre-like Stork's-bill. Fl. May, Aug. Clt. 1825. Shrub 1 to 2 feet.

218 P. corda'tum (Ait. hort. kew. 2. p. 427.) leaves cordate, acute, toothed, flat, hoary-pubescent beneath; branches and peduncles rather pilose; umbels many-flowered, panicled; lower petals awl-shaped, linear, acute, longer than the calyx; nectariferous tube a little shorter than the calyx. ♄. G. Ger. cordifòlium, Cav. diss. 4. t. 117. f. 3. P. cordàtum, Lher. ger. t. 22. P. cordifòlium, Curt. bot. mag. t. 165. Two lower petals pale-purple, with deeper branched lines, red at the claws, 3 upper ones whitish.

Cordate-leaved Stork's-bill. Fl. March, Aug. Clt. 1774. Shrub 1 to 3 feet.

§ 5. *Purpurascéntia. Leaves cordate or cuneated, toothed, undivided or lobed; lobes obtuse, never divided so far as the middle. Flowers purplish; lower petals oblong or obovate.*

219 P. cucylla'tum (Ait. hort. kew. 2. p. 426.) leaves kidney-shaped, cucullate, toothed, pubescent; branches and peduncles rather hispid; umbels 5-flowered; lower petals oblong; nectariferous tube shorter than the calyx. ♄. G. Seb. mus. 1. t. 26. f. 2. Ger. cucullàtum, Lin. spec. 946. Cav. diss. 4. p. 241. t. 106. f. 1. Flowers purplish-red, with darker veins.

Var. β, striatiflòrum (Sweet, hort. brit. 79.) petals striped. This variety is called *Prince Regent* in the gardens.

Var. γ, màjor (Sweet, l. c.) This is a fine variety. It is called *Royal George* in the gardens.

Var. δ, grandiflòrum (Sweet, l. c.) A fine large-flowered variety.

Hooded-leaved Stork's-bill. Fl. April, Nov. Clt. 1690. Shrub 2 to 4 feet.

220 P. cochlea'tum (Willd. enum. suppl. 48.) leaves orbicularly-ovate, rather cordate, concave, somewhat angular, serrated, pubescent; umbels 5-flowered; nectariferous tube length of calyx. ♄. G. P. concavifòlium, Hortul. Flowers purplish.

Shell-leaved Stork's-bill. Fl. April, Nov. Shrub 2 to 3 ft.

221 P. cardiifòlium (Sweet, ger. t. 15.) leaves cuneate, cucullate and plaited, somewhat 5-lobed, cartilaginously-toothed, many-nerved, pubescent; branches puberulous; umbels many-flowered; nectariferous tube twice the length of the calyx. ♄. G. Flowers pale-purple. The 2 superior petals are hardly larger than the rest, marked with a dark-purple spot in the middle of each, and rather lined.

Cockle-leaved Stork's-bill. Fl. April, Sept. Clt. 1816. Shrub 2 to 3 feet.

222 P. Broadle'yæ (Andr. ger. icon. under *Geràmium,*) pilose; lower leaves 5-lobed, upper ones 3-lobed; umbels many-flowered; nectariferous tube longer than the calyx; lower petals lanceolately-spatulate. ♄. G. Petals purple, upper ones with a dark centre.

Broadley's Stork's-bill. Fl. May, Aug. Shrub 2 to 3 feet.

223 P. acerifòlium (Lher. ger. t. 21. but not of Cav.) leaves cuneated at the base and entire, palmately 5-lobed at the apex, toothed, many-nerved, rather villous; branches and peduncles hairy; umbels usually 5-flowered; stipulas cordate, ovate; nectariferous tube a little shorter than the calyx. ♄. G. Ger. citriodòrum, Cav. icon. 1. p. 6. t. 8. Flowers pale-purplish.

Maple-leaved Stork's-bill. Fl. April, July. Clt. 1784. Shrub 2 to 3 feet.

224 P. macula'tum (Andr. ger. icon. under *Geràmium,*) leaves cuneated at the base, obsoletely 5-lobed, unequally-toothed, hairy; umbels several-flowered; nectariferous tube about the length of the calyx; petals nearly equal. ♄. G. Petals blush, 2 upper ones with a dark-purple centre.

Spotted-petalled Stork's-bill. Fl. May, Oct. Clt. 1796. Shrub 1 to 3 feet.

225 P. angulòsum (Ait. hort. kew. 2. p. 426.) leaves truncate at the base, rather cucullate, roundish, obtusely 5-lobed, toothed, pubescent; stipulas cordate, ovate, acuminated; branches and peduncles hispid; umbels numerous, 4-6-flowered; nectariferous tube one-half shorter than the calyx. ♄. G. Ger. acerifòlium, Cav. diss. 4. t. 112. f. 2. but not of Lher.—Dill. hort. elth. t. 129. f. 156. Flowers pale-purplish.

Angular-leaved Stork's-bill. Fl. June, Sept. Clt. 1724. Shrub 1 to 3 feet.

226 P. rugòsum (Andr. ger. icon. under *Geràmium,*) leaves cordate, 5-7-lobed, plicately-wrinkled, very hairy, of a brownish-colour, unequally-toothed; umbels 4-flowered; nectariferous tube shorter than the calyx; upper petals emarginate, lower ones ovate. ♄. G. Petals dirty-red, upper ones with 3 branched lines, and a spot at the end of these branched lines; lower petals with 3 simple lines.

Wrinkled-leaved Stork's-bill. Fl. May, Aug. Clt. 1800. Shrub 1 to 3 feet.

227 P. erube'scens (Spin. cat. 1809. p. 27.) leaves on long footstalks, rather villous, lobed, denticulated, rounded at the base, with the margins and nerves red; branches villous; umbels 4-5-flowered. ♄. G. Flowers like those of *P. acerifòlium*. Perhaps a hybrid.

Reddish-leaved Stork's-bill. Shrub 1 to 3 feet.

228 P. Barringto'nii (Willd. enum. 706.) leaves kidney-shaped, obtuse, cucullate, denticulated, pilose on both surfaces; umbels many-flowered. ♄. G. P. Tormánni, Dietr. beschr. gaertn. 3. Aug. 235. Flowers of a deep violet-colour.

Barrington's Stork's-bill. Fl. April, Oct. Shrub 1 to 3 ft.

229 P. ri'gidum (Willd. spec. 3. p. 681.) leaves roundish, truncate at the base, 3-lobed, obtuse, flat, rather scabrous, with curled denticulated margins; umbels many-flowered. ♄. G. Shrub stiff. Petals whitish, oblong, 2 superior ones coloured with 2 violet lines at the base.

Stiff-leaved Stork's-bill. Fl. May, Aug. Clt. 1790. Shrub 1 to 3 feet.

230 P. deco'rum (Sweet, ger. new series. t. 15.) leaves subcordate, rather trifid, stiff, sharply-serrated, glandularly-pilose both beneath and on the margins, reflexed at the apex, with acutely-lobed segments; stipulas ovate-lanceolate, acuminated, subcordate; umbels 2-3-flowered; petals obcordate; nectariferous tube about equal in length to the calyx. ♄. G. Petals pale-lilac, with a bright dark-purple patch in the centre, below which are some lines.

Shewy Stork's-bill. Fl. May, Aug. Clt. 1825. Shrub 1 to 3 feet.

231 P. semitri'lobum (Jacq. schœnbr. t. 130.) leaves truncate at the base, and somewhat cuneated, trifid, flat, hairy; lobes divaricate, serrated at the apex; peduncles usually 2-flowered; lower petals linear. ♄. G. Petals pale flesh-coloured, 2 superior ones striped with blood-colour at the base.

Half-three-lobed-leaved Stork's-bill. Fl. May, Aug. Clt. 1800. Shrub 1 to 3 feet.

232 P. vitifòlium (Ait. hort. kew. 2. p. 425.) leaves cordate, 3-lobed, rather scabrous, obtuse, toothed; stipulas broad-cordate; stem erect; umbels many-flowered; nectariferous tube 3 times shorter than the calyx. ♄. G. Ger. vitifòlium, Lin. spec. 947. Cav. diss. 4. t. 111. f. 2. Petals rose-coloured, 2 superior ones striped with dark-purple.

Vine-leaved Stork's-bill. Fl. April, Aug. Clt. 1724. Shrub 1 to 3 feet.

233 P. CAPITA'TUM (Ait. hort. kew. 2. p. 425.) leaves cordate, lobed, waved, villous, toothed; stipulas broad-cordate; stems diffuse; umbels many-flowered, capitate; nectariferous tube 3-times shorter than the calyx. ♄. G. Ger. capitàtum, Lin. spec. 947. Cav. diss. 4. p. 105. f. 1. Ger. ròsa, Hortul. Leaves smelling like the rose. Petals pale-purple, 2 superior ones lined.

Capitate-flowered Stork's-bill. Fl. April, Aug. Clt. 1690. Shrub 1 to 3 feet.

234 P. RU'BIDUM (Sweet, hort. brit. p. 87.) lower leaves cordate, and shortly 5-lobed, hairy; upper ones 3-lobed, rather cuneated at the base; umbels 4-flowered; nectariferous tube rather shorter than the calyx. ♄. G. Petals reddish-purple, upper ones streaked at the base. P. rùbens, Andr. ger. icon.

Reddish-flowered Stork's-bill. Fl. May, Oct. Shrub 1 to 2 ft.

235 P. RU'BENS (Willd. enum. suppl. 48.) leaves rather cordate, acute, 5-lobed, serrated; umbels 5-flowered, subcapitate; pedicels hardly longer than the involucre; nectariferous tube 4 times shorter than the calyx. ♄. G. Petals pale-violet, 3 lower ones bifid, marked with a simple blood-coloured line, 2 upper ones marked with 4 branched lines.

Red-flowered Stork's-bill. Fl. April, Oct. Shrub 1 to 3 ft.

§ 6. *Crîspa. Leaves lobed; lobes acutely-toothed at the apex.*

236 P. TRICUSPIDA'TUM (Lher. ger. t. 30.) leaves cuneated at the base, trifid; middle lobe stretched out, serrated, with the rib muricated beneath; peduncles 2-flowered; nectariferous tube length of calyx. ♄. G. Petals white, 2 superior ones spotted with purple. Perhaps a hybrid.

Tricuspidate-leaved Stork's-bill. Fl. April, Aug. Clt. 1780. Shrub 1 to 3 feet.

237 P. SCA'BRUM (Ait. hort. kew. 2. p. 430.) leaves cuneated at the base, trifid, scabrous; lobes lanceolate, loosely-serrated; peduncles 1-4-flowered; nectariferous tube shorter than the calyx. ♄. G. Jacq. icon. rar. 3. t. 542. Lher. ger. t. 31. Ger. scàbrum, Lin. spec. 946. Cav. diss. 4. t. 108. f. 1. Petals rose-coloured, 2 upper ones lined. Lateral lobes of leaves bifid.

Scabrous Stork's-bill. Fl. April, Oct. Clt. 1775. Shrub 1 to 3 feet.

238 P. HERMANNIFO'LIUM (Jacq. icon. rar. 3. p. 545.) leaves wedge-shaped, distich, scabrous, plicate, truncate at the apex, deeply-toothed; peduncles 2-flowered, short; nectariferous tube a little longer than the calyx. ♄. G. Ger. hermannifòlium, Lin. mant. 569. Berg, cap. 177. Petals white, hardly flesh-coloured, 2 superior ones lined at the base with 2 purple stripes.

Hermannia-leaved Stork's-bill. Fl. April, June. Shrub 1 to 3 feet.

239 P. CITRIODO'RUM (Andr. ger. icon. under *Gerànium*,) much branched, very slender; leaves small, cordate, lower ones 5-lobed, upper ones 3-lobed, with stiffer hairs on the margins and nerves; flowers solitary, terminal; nectariferous tube about the length of the calyx; upper petals obcordate. ♄. G. Petals white, 2 upper ones marked with red at the base.

Citron-scented Stork's-bill. Fl. May, Aug. Shrub 1 to 2 ft.

240 P. CRI'SPUM (Ait. hort. kew. 2. p. 430.) leaves distich, roundish, fleshy, rather cuneated at the base, trifid, wavedly-plicate, scabrous, toothed; peduncles usually 2-flowered; nectariferous tube length of calyx. ♄. G. Lher. ger. t. 33. Ger. crîspum, Lin. mant. 257. Cav. diss. 4. t. 109. f. 2. Leaves with the scent of balm. Petals purplish, 2 superior ones lined.

Curled-leaved Stork's-bill. Fl. June, Nov. Clt. 1774. Shrub 2 to 3 feet.

241 P. UNIFLO'RUM (Spreng. nov. prov. p. 32.) leaves 3-lobed, toothed, rather glaucous, shining above; peduncles 1-flowered, elongated; superior petals emarginate. ♄. G. Perhaps only a variety of *P. crîspum*.

One-flowered Stork's-bill. Fl. April, Aug. Shrub 1 to 3 ft.

242 P. EXSTIPULA'TUM (Ait. hort. kew. 2. p. 431.) leaves truncately-cordate, 3-lobed, toothed, hoary-velvety; stipulas almost wanting; peduncles 3-4-flowered; nectariferous tube 3 times longer than the calyx. ♄. G. Ger. exstipulàtum, Cav. diss. 4. t. 123. f. 1. Ger. suavèolens, Andr. ger. icon.—Lher. ger. t. 35. Petals pale-violet, upper ones lined.

Exstipulate-leaved Stork's-bill. Fl. May, Oct. Clt. 1779. Shrub 1 to 3 feet.

243 P. TERNA'TUM (Jacq. icon. rar. 3. t. 544.) leaves ternate, cucullate, scabrous; lobes wedge-shaped, deeply-serrated at the apex, middle one trifid; peduncles 1-2-flowered; nectariferous tube a little longer than the calyx. ♄. G. Sweet, ger. 165. Curt. bot. mag. 428. Ger. ternàtum, Lin. suppl. 306. Cav. diss. 6. t. 107. f. 2. Plant rather glaucous. Petals rose-coloured, 2 superior ones marked with blood-coloured lines.

Ternate-leaved Stork's-bill. Fl. May, Aug. Clt. 1789. Shrub 1 to 3 feet.

§ 7. *Rádula. Leaves parted beyond the middle; with the lobes either cut, toothed, or pinnatifid.*

244 P. QUERCIFO'LIUM (Ait. hort. kew. 2. p. 420. Lher. ger. t. 14.) leaves cordate, pinnatifid, with roundish recesses; lobes obtuse, crenated; branches and petioles hispid; umbels many-flowered; nectariferous tube rather longer than the calyx. ♄. G. Ger. quercifòlium, Lin. suppl. 306. Cav. diss. 4. t. 119. f. 1. Ger. terebinthinàceum, Murr. comm. goett. 1785. t. 4. Petals purplish rose-coloured; the upper ones lined. Leaves with a heavy scent.

Var. β, bipinnatîfidum (Lher. ger. t. 15.) leaves twice pinnatifid.

Oak-leaved Stork's-bill. Fl. March, Aug. Clt. 1774. Shrub 2 to 4 feet.

245 P. GRAVE'OLENS (Ait. hort. kew. 2. p. 423.) leaves palmately 7-lobed; lobes oblong, obtuse, toothed, with revolute margins; umbels many-flowered, rather capitate; nectariferous tube shorter than the calyx. ♄. G. Lher. ger. t. 17. Ger. terebinthinàceum, Cav. diss. 4. p. 250. t. 114. f. 1.

Var. β, variegàtum (Sweet, hort. brit. 82.) leaves striped. Ger. capitàtum var. Andr. ger. icon. Petals pale-purple.

Strong-scented or Odour of Rose Stork's-bill. Fl. April, Aug. Clt. 1774. Shrub 1 to 3 feet.

246 P. GLUTINO'SUM (Ait. hort. kew. 2. p. 426.) leaves cordate, hastately 5-angled, toothed, clammy, smoothish; umbels 2-4-flowered; nectariferous tube a little longer than the calyx. ♄. G. Lher. ger. t. 20. Curt. bot. mag. 143. Jacq. icon. rar. t. 131. Ger. glutinòsum, Cav. diss. 4. t. 108. f. 1. Ger. cratægifòlium, Roth, abh. t. 9. but not of Thunb. Petals pale rose-colour or white, with purple lines, superior ones marked with long spots. There is a variety with the leaves marked with black in the middle.

Clammy Stork's-bill. Fl. May, July. Clt. 1777. Shrub 1 to 3 feet.

247 P. VISCOSI'SSIMUM (Sweet, ger. t. 118.) leaves palmately 5-7-lobed, and are, as well as the stem, clammy; segments flat, sinuated or toothed, recurved at the top; umbels capitate, many-flowered; petals oblong, obtuse; calyxes very blunt; nectariferous tube a little longer than the calyx. ♄. G. Petals white and flesh-coloured, 2 upper ones lined with red.

Very-viscid Stork's-bill. Fl. March, Aug. Clt. 1820. Shrub 1 to 3 feet.

248 P. HI'SPIDUM (Willd. spec. 3. p. 677.) leaves palmatifid, tomentose, hispid; lobes acuminated, deeply-toothed; umbels panicled, many-flowered; nectariferous tube one-half shorter

than the calyx. ♄. G. Ger. híspidum, Lin. suppl. 303. Cav. diss. 4. t. 110. f. 1. Flowers small.

Hispid Stork's-bill. Fl. May, Sept. Clt. 1790. Shrub 1 to 3 ft.

249 P. RA'DULA (Ait. hort. kew. 2. p. 423.) leaves palmately-parted, scabrous; lobes narrow, pinnatifid, with revolute margins; segments linear; umbels few-flowered; nectariferous tube 3 times shorter than the calyx. ♄. G. Lher. ger. t. 16. Ger. Rádula, Cav. diss. 4. t. 101. f. 1. Ger. revolùtum, Jacq. icon. rar. t. 133. Petals pale-red, lined with darker veins.

Var. β, ròseum (Willd. spec. 3. p. 679.) segments of leaves linear-lanceolate. Leaves smelling like the rose. A hybrid between *P. Rádula* and *P. gravèolens*.

Rasp-leaved Stork's-bill. Fl. March, July. Clt. 1774. Shrub 2 to 4 feet.

250 P. BALSA'MEUM (Jacq. icon. rar. 3. t. 543.) leaves palmate-parted, rather scabrous, cuneated at the base; lobes lanceolate, remotely toothed; umbels few-flowered; nectariferous tube very short. ♄. G. Petals flesh-coloured, oblong, 2 superior ones rather spotted at the base.

Balsam-scented Stork's-bill. Fl. May, Sept. Clt. 1790. Shrub 1 to 3 feet.

251 P. A'SPERUM (Willd. spec. 3. p. 678.) leaves rather palmately-lobed, scabrous; lobes 5-7, oblong, obtuse, with curled denticulated margins; umbels usually 5-flowered, capitate; nectariferous tube shorter than the calyx. ♄. G. Ger. Rádula, Roth. abh. p. 51. t. 10. Bracteas of involucre large, ovate, acute. Petals flesh-coloured, 2 upper ones lined with red.

Rough-leaved Stork's-bill. Fl. May, Sept. Clt. 1795. Shrub 1 to 3 feet.

252 P. DENTICULA'TUM (Jacq. schœnb. 2. t. 135.) leaves palmate-parted, clammy, smooth; lobes linear, pinnatifid, repandly-toothed, flattish; umbels few-flowered; nectariferous tube very short; superior petals bifidly-emarginate. ♄. G. Petals oblong-cuneated, flesh-coloured, two superior ones spotted with red.

Toothletted-leaved Stork's-bill. Fl. May, Aug. Clt. 1789. Shrub 1 to 3 feet.

† *Species of Pelargònium not sufficiently known.*

* *Acaúlia. Stemless plants referable to Sections Hoárea and Dimàcria.*

253 P. ANGUSTIFO'LIUM (Thunb. fl. cap. ed. Schult. 2. p. 514. under *Geránium*,) stemless; leaves elliptic, entire, smooth, marginated; scape hairy, umbelliferous. 4. G. Petals linearly-obovate. Like *P. longifòlium*.

Narrow-leaved Stork's-bill. Pl. ½ foot.

254 P. ENSA'TUM (Thunb. l. c. under *Geránium*,) stemless; leaves ensiformly-obovate, hairy; umbel compound. 4. G. Petals white, obovately-lanceolate.

Sword-leaved Stork's-bill. Pl. ½ foot.

255 P. SETI'FERUM (D. C. prod. 1. p. 680.) stemless; leaves roundish, doubly serrated, pubescent beneath; umbel 2-flowered. 4. G. Ger. setòsum, Thunb. l. c. 517.

Bristle-bearing Stork's-bill. Pl. ½ foot.

256 P. SIDOI'DES (D. C. prod. 1. p. 680.) stemless; leaves cordate, orbicular, tomentose; scape bifid, umbelliferous. 4. G. Ger. sidæfòlium, Thunb. l. c. 518. Petals blackish-purple.

Sida-like Stork's-bill. Pl. ½ foot.

257 P. HETERO'LOBUM (D. C. prod. 1. p. 680.) stemless; leaves trifid and pinnate, beset with bristles beneath; scape bifid, furrowed; umbels many-flowered. 4. G. Ger. heterophýllum, Thunb. l. c. p. 515. Petals obovate, white.

Various-lobed-leaved Stork's-bill. Pl. ½ foot.

258 P. ARENA'RIUM (D. C. prod. 1. p. 680.) stemless; root long, perpendicular; leaves pinnatifid; lobes oblong, deeply-toothed; scapes 2-3, longer than the leaves; umbels 4-5-flowered. 4. G. Ger. arenàrium, Burm. ger. no. 65.—Cav. diss. 4. t. 259. Flowers reddish-purple.

Sand Stork's-bill. Pl. ½ foot.

259 P. TRI'LOBUM (Thunb. l. c. p. 519. under *Geránium*,) stemless; leaves pinnate, with 5 ovate, ciliated leaflets; umbels proliferous. 4. G. Petals obovate, blood-coloured.

Three-lobed-leaved Stork's-bill. Pl. ½ foot.

260 P. PLICA'TUM (Thunb. l. c. p. 526. under *Geránium*,) stemless; leaves tomentose, pinnate, with plicate leaflets; scape umbelliferous. 4. G. Petals pale flesh-coloured, larger ones marked with purple.

Plicate-leaved Stork's-bill. Pl. ½ foot.

261 P. ACAU'LE (Thunb. l. c. p. 526. under *Geránium*,) stemless; leaves somewhat bipinnatifid, hairy; scape umbelliferous. 4. G. Petals white.

Stemless Stork's-bill. Pl. ½ foot.

262 P. TOMENTE'LLUM (D. C. prod. 1. p. 680.) stem very short, shrubby; leaves bipinnate, tomentose; umbels somewhat 3-flowered. 4. G. Ger. tomentòsum, Thunb. fl. cap. 2. p. 527.

Tomentose Stork's-bill. Shrub ½ foot.

263 P. VILLI'FERUM (D. C. prod. 1. p. 680.) stem very short; leaves tripinnatifid, villous; umbels many-flowered. 4. G. Ger. villòsum, Thunb. l. c. p. 528. Like *P. hírtum*.

Villi-bearing Stork's-bill. Pl. ½ foot.

** *Herbaceous plants.*

264 P. APHANOI'DES (Thunb. l. c. p. 514.) leaves 5-parted, tomentose; lobes cut; peduncles elongated; umbels 4-5-flowered. 4. G. Allied to *P. alchimilloìdes*.

Aphanes-like Stork's-bill. Pl. ½ foot.

265 P. DONDIÆFO'LIUM (Link. enum. 1. p. 187.) stem and petioles hairy; leaves 5-lobed, acutely-crenated in front; pedicels very long; bracteas linear. 4. G. Lower leaves lobed, upper ones parted. Allied to *P. tabulàre*.

Dondia-leaved Stork's-bill. Pl. ½ foot.

266 P. EUPHRA'SEUM (Horn. hort. hafn. 2. p. 634.) leaves cordate, trifid, cut, crenated; petioles very long; peduncles few-flowered. 4. G.

Euphrasia-like Stork's-bill. Pl. ½ foot.

267 P. ACUMINA'TUM (Thunb. l. c. p. 526.) stem herbaceous, trigonal; leaves deeply-pinnatifid, smooth; peduncles 2-flowered. 4. G. Petals white or flesh-coloured, larger ones spotted with purple.

Acuminated-leaved Stork's-bill. Pl. ½ foot.

268 P. FLEXUO'SUM (Thunb. l. c. p. 526.) stem suffrutescent, erect; leaves trifid, tomentose; umbels somewhat trifid. ♄. G. Petals white, larger ones spotted with purple.

Flexuous-stemmed Stork's-bill. Pl. 1 foot.

*** *Shrubs with fleshy stems.*

269 P. TE'CTUM (Thunb. l. c. p. 525.) stem shrubby, fleshy; leaves deeply triternate, woolly; umbels many-flowered. ♄. G. Petals deep-purple.

Covered Stork's-bill. Shrub 1 foot.

270 P. PI'NGUE (Thunb. l. c. p. 527.) stem shrubby, fleshy; leaves pinnatifid, hairy; umbels many-flowered. ♄. G. Petals white.

Fat Stork's-bill. Shrub 1 foot.

**** *Shrubby species.*

271 P. ERYTHRÆ'UM (D. C. prod. 1. p. 681.) leaves oblong, serrated, tomentose; stem frutescent; peduncles alternate, usually 1-flowered. ♄. G. Ger. rùbens, Thunb. l. c. p. 515.

Red-flowered Stork's-bill. Shrub 1 to 3 feet.

272 P. ELLI'PTICUM (Thunb. l. c. p. 525.) stem shrubby; leaves elliptic, hoary; umbels usually 3-flowered. ♄. G. Petals blood-coloured.

Elliptic-leaved Stork's-bill. Shrub 1 to 2 feet.

273 P. SERRA'TUM (Thunb. l. c. p. 517.) caulescent, flexuous; leaves roundish, serrated, with scabrous veins; peduncles usually 1-flowered. ♄. G. Petals obovate, blood-coloured.

Serrated-leaved Stork's-bill. Shrub 1 foot.

274 P. LANA'TUM (Thunb. l. c. p. 518.) stem shrubby, hairy; leaves cordate, ovate, serrated, clothed with woolly tomentum beneath. ♄. G. Petals obovate, flesh-coloured, with a purple patch in the centre of each.

Woolly Stork's-bill. Shrub 1 to 2 feet.

275 P. SIDÆFO'LIUM (Willd. enum. 706.) leaves roundish-cordate, rather angular, mucronately-toothed; umbels usually 4-flowered. ♄. G. Flowers pale-violet. Allied to *P. speciòsum.*

Sida-leaved Stork's-bill. Shrub 1 to 2 feet.

276 P. TO'TTUM (Thunb. fl. cap. 2. p. 523.) stem shrubby, villous; leaves 5-parted, scabrous; lobes lacerately-toothed; umbels usually 4-flowered. ♄. G. Petals flesh-coloured, larger ones spotted with purple.

Hottentot Stork's-bill. Shrub 1 to 2 feet.

277 P. SPU'RIUM (Willd. enum. 709.) leaves kidney-shaped, rather distich, 3-lobed, obtuse, unequally-toothed, waved; peduncles 3-4-flowered. ♄. G. Corolla violaceous, the 2 superior petals lined. Nectariferous tube longer than the peduncle. Perhaps the same as *P. scàbrum.*

Spurious Stork's-bill. Fl. April, July. Shrub 1 to 3 feet.

278 P. PANICULA'TUM (Horn. suppl. 76. but not of Jacq.) leaves kidney-shaped, pubescent, 9-lobed; lobes rounded, mucronately-toothed; umbels many-flowered, in crowded panicles.

Panicled-flowered Stork's-bill. Shrub 1 to 3 feet.

279 P. SUAVE'OLENS (Desf. arbr. 2. p. 465.) villous; leaves cordate, roundish, curled, 5-lobed, sharply denticulated; peduncles many-flowered; pedicels short, and are, as well as the calyxes, very villous. ♄. G. Flowers purple. Allied to *P. crìspum.* Perhaps *P. suavèolens* of Horn. hort. hafn. 2. p. 640. is different from this.

Sweet-scented Stork's-bill. Shrub 2 to 4 feet.

280 P. HORNEMA'NNI (D. C. prod. 1. p. 681.) leaves cordately kidney-shaped, trifid, sharply-toothed, smooth, fleshy, cucullate; umbels 4-flowered. ♄. G. P. blándum, Horn. suppl. 76. but not of Sweet. Allied to *P. tricuspidàtum.*

Hornemann's Stork's-bill. Shrub 1 to 3 feet.

281 P. CASTELLIA'NUM (Spin. cat. 1818. p. 30.) leaves cuneated at the base, cucullate, angular, toothed, scabrous; branches and petioles hairy; umbels many-flowered. ♄. G. Petals pale rose-coloured, 2 upper ones roundish, with a dark-purple, branched mark at the base of each, lower ones linear, obtuse.

Castellian Stork's-bill. Shrub 1 to 3 feet.

282 P. GRA'TUM (Willd. enum. 710.) leaves trifid, unequally and acutely toothed, undulated, pilose; peduncles 2-4-flowered. ♄. G. Plant smelling like peppermint. Petals flesh-coloured, 2 upper ones obovate, retuse, painted with dark-purple lines, 3 lower linearly-cuneated.

Grateful-scented Stork's-bill. Fl. May, Aug. Shrub 1 to 3 ft.

283 P. NO'THUM (Willd. enum. p. 710.) leaves roundish-ovate, obtuse, rather trifid, conduplicate, undulately-toothed, rather pilose beneath; peduncles usually 2-flowered; segments of calyx erect. ♄. G. Very like *P. gràtum*, and allied to *P. crìspum.*

Counterfeit Stork's-bill. Fl. May, Aug. Shrub 1 to 3 feet.

284 P. CONSANGUI'NEUM (Willd. enum. 710.) leaves 3-lobed, flat, obtuse; lobes divaricate, unequally and sharply-toothed; peduncles usually 3-flowered. ♄. G. Like *P. gràtum*, but the leaves are scentless. Flowers flesh-coloured.

Kindred Stork's-bill. Fl. May, Aug. Shrub 1 to 3 feet.

285 P. PUBE'SCENS (Spin. cat. 1818. p. 32.) leaves 3-lobed, deeply toothed, pilose, with ciliated margins; branches, petioles, peduncles, and calyxes pilosely-pubescent; peduncles usually 5-flowered. ♄. G. Leaves smelling like the citron. Petals flesh-coloured, upper ones roundish, painted with purple, branched lines, lower ones linear.

Pubescent Stork's-bill. Shrub 1 to 3 feet.

286 P. CUNEA'TUM (Spin. cat. 1818. p. 32.) leaves rather villous, cuneated, 3-lobed, serrated; umbels few-flowered; petals about equal in length to the calycine lobes. ♄. G. Petals purple, upper ones roundish, lined with dark-purple, lower ones linear, obtuse.

Wedge-leaved Stork's-bill. Shrub 1 to 3 feet.

287 P. WILLDENÒWII (Link. enum. 2. p. 190. but not of Dietr.) leaves roundish, cuneated, 3-lobed, undulately-toothed; branches, petioles, and peduncles villous; umbels 3-4-flowered; nectariferous tube longer than the calyx. ♄. G. P. pulchéllum, Willd. suppl. 47. but not of Ait. Petals white, 3 lower ones oblong, 2 upper ones painted with a blood-coloured spot and lined with red.

Willdenow's Stork's-bill. Fl. May, Aug. Shrub 1 to 3 feet.

288 P. UNICOLÒRUM (Willd. enum. suppl. 48.) leaves roundish, cuneated, 3-lobed, acutely and undulately-toothed; branches, petioles, and peduncles pilose; umbels 4-flowered; nectariferous tube one-half shorter than the reflexed calyx. ♄. G. Flowers blood-coloured, 2 superior petals with darker veins.

One-coloured-flowered Stork's-bill. Fl. May, Aug. Shrub 1 to 3 feet.

289 P. ALNIFÒLIUM (Willd. enum. 710.) leaves elliptic, obtuse, floral ones obsoletely-trifid, unequally-toothed, rather cuneated at the base, quite entire; peduncles 1-4-flowered. ♄. G. Perhaps allied to *P. betulìnum.* Corolla flesh-coloured, the two superior petals broadest, and painted with dark-purple lines at the base.

Alder-leaved Stork's-bill. Fl. May, Aug. Shrub 1 to 3 ft.

290 P. AMPLI'SSIMUM (Willd. enum. suppl. p. 48.) leaves flat, quite smooth, semiorbicular, 7-lobed, serrated, cordate at the base; peduncles 2-5-flowered; nectariferous tube twice the length of the reflexed calyx. ♄. G. Corolla size and colour of *P. speciòsum.* Allied to *P. grandiflòrum.*

Very ample-flowered Stork's-bill. Fl. May, Aug. Shrub 1 to 3 feet.

291 P. EGRE'GIUM (Hort. belved. 71. Link. enum. 2. p. 195.) leaves ternate; leaflets pinnatifid, pubescent; stipulas ovate; umbels 3-flowered; nectariferous tube length of calyx. ♄. G. Petals scarlet.

Egregious Stork's-bill. Shrub 1 to 3 feet.

292 P. FRAGRANTI'SSIMUM (Link. enum. 2. p. 192.) leaves rounded at the base, lobed; middle lobes rounded, lateral ones acutish, all acutely-serrated; nectariferous tube 4 times shorter than the calyx. ♄. G. Petals purplish, marked with deeper branched lines. Stipulas ovate, reflexed.

Very-fragrant Stork's-bill. Shrub 1 to 2 feet.

293 P. LADA'NOMA (Hoffmans. in Dietr. nachr. 6. p. 68. ex Link. enum. 2. p. 192.) leaves roundish, somewhat lobed, acutely crenated; corolla lilac. ♄. G.

Ladanoma Stork's-bill. Shrub 1 to 3 feet.

294 P. MUNI'TUM (Burch. cat. geogr. no. 1240. voy. 1. p. 225.) smooth; leaves bipinnatifid; panicle dichotomous, furnished with lignescent spines. ♄. G.

Fenced Stork's-bill. Shrub 2 to 3 foot.

295 P. DIVARICA'TUM (Thunb. fl. cap. 2. p. 525.) stem shrubby, erect, smooth; leaves multifidly-pinnatifid, smooth; peduncles 1-flowered. ♄. G. Petals flesh-coloured, larger ones spotted with purple.

Divaricate Stork's-bill. Shrub 1 to 3 feet.

† *A list of garden Hybrids belonging to Section Pelargium, arranged alphabetically.*

abrotanifòlium, Sw. ger. 351
abutilöìdes, Sw. ger. n. s. 2
aceroìdes, Sw. ger. 242
acetabulòsum, Sw. ger. n. s. 40
ácidum, Sw. ger. 261
acutidentàtum, Sw. ger. n. s. 36
acutílobum, Sw. ger. 184
adulterìnum, Lher. ger. 34
adventítium, Sw. ger. n. s. 80
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Cult. The tuberous rooted kinds, or those belonging to sections *Hoárea*, *Dimàcria*, and *Seymoúria* thrive best in an equal mixture of light turfy loam, peat, and sand; and when in a dormant state, require to be kept quite dry, which commences as soon as they have done flowering, and have ripened their seeds; after which time they require to be kept in a cool situation, out of the reach of frost, but as soon as they begin to push afresh, all the old mould should be shaken out of the pots, and from their roots; they should then be potted afresh in new mould. In potting them care must be taken not to bury the heart of the plants; after this they require a little water, and, as they grow, watered whenever they are dry, and if the pots get filled with roots they must be shifted into larger ones. The best method of increasing them is by the little tubers, which issue from the old bulbs, planted singly in small pots, with their tops above the surface, and kept dry until they begin to grow, when they should be watered. The commoner, free growing, shrubby kinds will thrive well in a rich loamy soil, or a mixture of loam and decayed leaves. The dwarfer woody kinds, as *P. tricolor*, *élegans*, and *ovàle*, thrive best in a mixture of loam, peat, and sand; the pots should be well drained with potsherds. The fleshy stemmed sorts succeed best in rather more than one-third of fine sand, the same quantity of turfy loam, and the remainder of peat; the pots also require to be well drained with pot-sherds, very little water is requisite when they are not in a vigorous state. Young cuttings of all the shrubby kinds strike root freely under hand-glasses, in the same kind of soil recommended for the plants, or in pots without being covered by glasses, placed in a shady situation. Many of the kinds may be increased by slips from the roots. No genus is more liable to sport into hybrids than *Pelargònium* by promiscuous impregnation. All the fine hybrid varieties in the gardens have been obtained by impregnating one sort with the pollen of another, by cutting out the anthers of the plant intended for the female parent before they burst, and impregnating the stigmas with the pollen of another. The object of this should be to obtain a superior variety; therefore particular attention should be paid to those plants intended for the parents, and more so to that intended for the male parent; for it has been observed that seedlings approach nearer to the male than the female parent. To grow geraniums in rooms, they require as much air and light as can possibly be given them, and watered regularly when dry; and when the leaves get dusty, to clean them well with a sponge and water.

VII. GRIE'LUM (from γραια, *graia*, old, grey; hoary aspect of plants). Lin. gen. 1235. Gært. fruct. 1. p. 180. t. 36. Sweet, ger. 171. D. C. prod. 2. p. 549.

Lin. syst. *Monadélphia*, *Decándria*. Calyx permanent, 5-cleft, with a short tube, rather concrete to the carpels. Petals 5, inserted in the tube of the calyx. Stamens 10, connate at the base; filaments permanent. Styles 5-10, short, capitate. Capsule of 5-10 closely concrete carpels, depressed at the apex; carpels verticillate, 1-celled, 1-seeded. Seeds inverse. Cotyledons leafy. Radicle oblique, superior.—Suffrutescent herbs, natives of the Cape of Good Hope, with dissected leaves, and large, solitary, axillary flowers. It is doubtful whether this genus really belongs to *Geràniàceæ*; the habits of the plants are like those of *Monsònia*, but the structure of the fruit and the seeds come nearer to *Neuràda*; both genera perhaps more properly belong to *Malvàceæ*, but De Candolle has placed them in *Rosàceæ*, where they form a separate section, called *Neuràdeæ*.

1 G. tenuifòlium (Lin. gen. 578.) leaves bipinnatifid, hoary, with linear, acutish, channelled segments; stem branched, diffuse. ♃. G. Native of the Cape of Good Hope. Gerànium grandiflòrum, Lin. spec. 2. p. 958. Cav. diss. 4. t. 75. f. 1. Monsònia tenuifòlia, Spreng. syst. 3. Grielum tenuifòlium, Burm. ger. 1. Sweet, ger. 171. Thunb. fl. cap. 509.—Burm. afr. 53. Petals obovate, crenated at the margins, yellow, with green bases. Root succulent.

Fine-leaved Grielum. Fl. Apr. May. Clt. 1790. Pl. prostrate.

2 G. humifu'sum (Thunb. fl. cap. 509.) leaves bipinnatifid,

tomentose, with linear, oblong segments; calyx tomentose. ♃. G. Native of the Cape of Good Hope. Flowers one-half smaller than those of the first species.

Trailing Grielum. Fl. April, May. Clt. 1825. Pl. prostrate.

3 G. LACINIA'TUM (Gært. fruct. 1. p. 180. t. 36.) stem tomentose; leaves unequally jagged, smooth above and shining, but tomentose beneath; segments linear-oblong, obtuse, channelled above; stipulas linear, acuminated, longer than the petioles; calyx densely tomentose, with acute segments. ♃. G. Native of the Cape of Good Hope. Root succulent. Flowers not half the size of those of the first species. Sweet, ger. t. 306. G. sinuàtum, Licht. ex Burch. voy. 1. p. 286.

Jagged-leaved Grielum. Fl. May, Aug. Clt. 1825. Pl. prostrate.

Cult. Mr. Sweet says the species of this genus thrive best in sandy gravel, and the pots must be well drained with potsherds, as nothing injures them more than too much wet; cuttings will root in the same kind of soil without glasses, in a shaded situation.

ORDER LV. TROPÆO'LEÆ (plants agreeing with *Tropæ'olum* in important characters). Juss. mem. mus. 3. p. 447. D. C. prod. 1. p. 683.

Calyx 5-parted, coloured, superior segment furnished with a free spur at the base; lobes sometimes free, sometimes joined together more or less. Petals 5, inserted in the calyx, and alternating with its lobes, unequal, irregular, 2 superior ones sessile and remote, fixed in the mouth of the spur, 3 lower ones unguiculate, smaller, sometimes abortive. Stamens 8; filaments free, closely girding the ovary, inserted in the disk; anthers terminal, oblong, erect, 2-celled, bursting by a double chink. Carpels 3, closely joined into a trigonal ovary. Styles 3, connected together into one, which is 3-furrowed. Carpels 3, adnate to the base of the style or axis of the fruit, 1-celled, 1-seeded. Seed large, without albumen, filling the cell, and conforming to the cavity. Embryo large; cotyledons 2, straight, thick, younger ones distinct, but at length closely connected together, and also adhering to the spermoderm, but rather distinct at the base; radicle lying within the process of the cotyledons, bearing 4 tubercles, which at length become radicles. Gært. fruct. 1. p. 380. t. 79. Rich. ann. p. 90. St. Hil. ann. mus. 18. p. 461. t. 24.—American herbs, with a hot taste like the cress, smooth, tender, diffuse and climbing. Leaves alternate, without stipulas, stalked, peltate, entire, lobed, or 5-7-parted. Peduncles axillary, 1-flowered. This order agrees with *Geraniàceæ* in the structure of the petals and calyx, but differs in the stamens being free, in not agreeing in number with the petals, as well as in the flowers being axillary, and in the structure of the fruit and seeds. It is curious that this is the only order in which the peculiar acrid flavour of *Cruciferæ* is found to exist. All the species are powerfully antiscorbutic. The flowers of all are handsome.

Synopsis of the Genera.

1 TROPÆ'OLUM. Calyx 5-parted, upper lobe furnished with a spur. Petals 5, 3 lower ones smallest or vanished. Stamens 8, free.

2 MAGALLA'NA. Calyx 5-lobed, spurred, 2 of the lobes deeply parted, the other 3 connected into a 3-toothed lobe. Petals 5, unequal. Stamens 8, connected at the base.

I. TROPÆ'OLUM (from τροπαιον, *tropaion*, which the Latins have changed to *tropæ'um*, a trophy; the leaves are of the form of a buckler, and the flowers resemble an empty helmet). Lin. gen. no. 466. D. C. prod. 1. p. 683.

LIN. SYST. *Octándria, Monogýnia.* Calyx 5-parted, upper lobe furnished with a spur. Petals 5, unequal, 3 lower ones smallest or vanished altogether. Stamens 8, free from the base. Carpels 3, somewhat erose, kidney-shaped, indehiscent, furrowed, roundish. Seed large, filling the cell.

§ 1. *Leaves peltate-nerved, entire or lobed.*

1 T. MINUS (Lin. spec. 490.) leaves peltate-nerved, orbicular, somewhat repand; nerves mucronate at the apex; petals each ending in a bristle-like point. ⊙. H. or ♃. G. Native of Peru. Curt. bot. mag. t. 98. Schkuhr. handb. t. 105. Nastúrtium I'ndicum, Dod. pempt. 397. Flowers deep-yellow, streaked with orange and red; these may be eaten in salads, as well as the leaves, and the fruit may be pickled and used like capers. Calyx coloured like the petals.

Var. β, *flòre-plèno;* flowers double. ♃. G. This is a beautiful plant.

Small Indian-cress. Fl. June, Oct. Clt. 1596. Pl. trailing and climbing.

2 T. MA'JUS (Lin. spec. 490.) leaves peltate-nerved, orbicular, somewhat 5-lobed; nerves not mucronate at the apex; petals obtuse. ⊙. H. or ♃. G. Native of Peru. Curt. bot. mag. t. 23.—Hern. mex. 161. with a figure.—Plench. icon. t. 294. Flowers larger than those of the foregoing species, yellow, darker on the inside at the base, and streaked with red and orange; these are frequently eaten in salads, as well as the leaves; they have a warm taste like the garden-cress, and hence the plant has its common name of *Nastúrtium;* they are likewise used for garnishing dishes. The seeds when green are pickled, and by some are preferred to most pickles for sauce, under the false name of capers. Elisabeth Christina, daughter of the celebrated Linnæus, we are informed by her father, observed the flowers of the great Indian-cress to emit spontaneously, at certain intervals, sparks like electric ones, visible only in the evening. If this be the case in this plant, it is probable the whole possess the property more or less.

Var. β, *flòre-plèno;* flowers double. ♃. G. This is a beautiful plant.

Great Indian-cress. Fl. June, Oct. Clt. 1686. Pl. trailing or climbing.

3 T. HY'BRIDUM (Lin. mant. 64.) leaves peltate-nerved, wedge-shaped, somewhat cucullate, 5-lobed; petals variable. ♃. G. A hybrid raised from the seeds of *T. màjus* in a garden at Stockholm. Flowers yellow, never perfect, therefore this plant has always been propagated from cuttings.

Hybrid Indian-cress. Fl. June, Oct. Clt.? Pl. trailing or climbing.

4 T. ADU'NCUM (Smith, tour, 1. p. 158.) leaves peltate-nerved, somewhat kidney-shaped, with 5-7-lobed, mucronate lobes; 2 upper petals lobed, mucronate, 3 lower ones smaller, fringed; spur hooked, about the length of the upper petals. ⊙. H. or ♃. ◡. G. Native of Peru and Mexico. T. peregrinum, Jacq. schœnbr. t. 98. Andr. bot. rep. t. 617. Ker. bot. reg. 718. Sims, bot. mag. t. 1351. H. B. et Kunth, nov. gen. amer. 5. p. 252. but not of Lin. Petals yellow, hardly longer than the calyx. This species is cultivated at Gibraltar in the open air, where it is called *Canary-bird* flower.

Hooked-spurred or Fringed-flowered Indian-cress. Fl. June, Oct. Clt. 1775. Pl. climbing.

5 T. Smi'thii (D. C. prod. 1. p. 684.) leaves peltate-nerved, palmate, deeply 5-lobed; petals all lobed and fringed; spur straight, twice as long as the corolla. ♃. G. Native of New Granada. T. peregrìnum, Lin. exclusive of the synonyme of Feuille, according to Smith in Rees' cycl. no. 4. Flowers yellow.

Smith's Indian-cress. Pl. cl.

6 T. dipe'talum (Ruiz et Pav. fl. per. 3. p. 77. t. 313.) leaves rather peltate-nerved, 5-7-lobed; lobes ovate, rather mucronate, glaucous beneath; petals 2, spatulate, crenulated. ♃. G. Native of Peru on the Andes, and of Brazil. St. Hil. pl. usu. bras. no.—Feuille, per. 2. t. 42? and hence this is probably the true T. peregrìnum of Linnæus, spec. 940. Flowers yellow. Root tuberous.

Two-petalled Indian-cress. Pl. cl.

7 T. bicolòrum (Ruiz et Pav. fl. per. 3. p. 77. t. 313.) leaves peltate-nerved, 7-lobed, transversely truncate at the base; petals cut, ciliated. ♃. ◡. G. Native of the Andes of Peru, in humid groves. The 2 upper petals small and yellow, the 3 lower ones larger, of a fine vermilion scarlet-colour. This is a very shewy species. Root tuberous.

Two-coloured-flowered Indian-cress. Pl. cl.

8 T. pube'scens (H. B. et Kunth, nov. gen. amer. 5. p. 251.) leaves peltate-nerved, obsoletely and acutely 5-lobed, truncate at the base, smoothish above, and pubescently-pilose beneath; petals lobately 2-awned, about equal in length to the calyx. ⊙. H. Native of Peru in woods, near Loxa. Flowers yellow.

Pubescent-leaved Indian-cress. Fl. June, Oct. Pl. cl.

9 T. cilia'tum (Ruiz et Pav. fl. per. 3. p. 77.) leaves peltate-nerved, 5-7-lobed; stipulas and bracteas ciliated; petals quite entire, about equal in length to the calyx. ♃. or ⊙. F. Native of Chili in woods. Flowers yellow.

Ciliated-stipuled Indian-cress. Pl. cl.

10 T. tuberòsum (Ruiz et Pav. fl. per. 3. t. 314.) leaves peltate-nerved, 5-lobed, transversely-truncate at the base, smooth; petals almost the length of the calyx. ♃. ◡. F. Native of Peru, among decayed rocks. Roots tuberous, depressed; these are eatable when boiled. Petals toothed according to Ruiz and Pavon, but according to H. B. et Kunth, nov. gen. amer. 5. p. 251. they are entire and yellow.

Tuberous-rooted Indian-cress. Clt. 1827. Pl. cl.

11 T. brachy'ceras (Hook. bot. Beech. voy. p. 14.) leaves peltate; segments 6-7, oblong-obovate, entire, sessile; petals cuneiform; segments of the calyx obtuse; spur very short and very blunt. ♃. F. Native of Chili. Common in bushy places on the mountains about Valparaiso. Root tuberous, fusiform? Plant weak.

Short-horned Indian-cress. Clt. 1828. Pl. cl.

12 T. tricolòrum (Sweet, fl. gard. 3. t. 270.) root tuberous; stem slender, climbing, branched; leaves peltately divided; segments 6-7, obovate, entire, cuspidate; petioles cirrhose; petals unguiculate, a little longer than the rather closed permanent calyx, obtuse, quite entire. ♃. F. Native of Chili at Coquimbo. Root tuberous, depressed. Calyx permanent, of an orange-scarlet colour, tipped with black, with a long straight spur. Petals yellow. This is the most shewy of all the species.

Three-coloured-flowered Indian-cress. Fl. June, Oct. Clt. 1828. Pl. cl.

13 T. pinna'tum (Andr. bot. rep. 8. t. 535.) leaves somewhat peltate; lobes obsolete; flowers pinnate; petals 5, wedge-shaped, toothed at the apex. ♃. G. Native of? Flowers yellow. This is a hybrid plant raised from the seeds of *T. màjus* in 1800.

Pinnate-flowered Indian-cress. Fl. June, Nov. Clt. 1800. Pl. cl.

§ 2. *Leaves peltately cut into leaflets to the base.*

14 T. pentaphy'llum (Lam. dict. 1. p. 605. ill. t. 277.) leaflets 5, ovate or ovate-lanceolate, entire, stalked; petals 2, sessile, acute, quite entire, shorter than the calyx. ♃. ◡. F. Native of Monte Video, Buenos Ayres, and Brazil in the province of Cisplatine. Root tuberous. Flowers yellow.

Five-leaved Indian-cress. Clt. 1826. Pl. cl.

15 T. tene'llum; leaves peltate; leaflets 5-6, obovate, mucronate; spur shorter than the calyx; petals 5, cuneiform, on long claws, all longer than the calyx, the segments of which are obovate. ♃. F. Native of Chili. Root tuberous. Petals pale-yellow, upper ones striped with dark streaks. A very slender plant. (v. s. herb. Lamb.)

Tender Indian-cress. Pl. cl.

16 T. leptophy'llum; leaves peltate; leaflets 7, linear, mucronate; segments of calyx ovate, acute; petals 5, bifid or trifid, crenulate, longer than the calyx; spur slender, tapering. ♃. F. Native of Chili at Santiago. Root tuberous. Stems slender. Petals yellow. (v. s. herb. Lamb.)

Slender-leaved Indian-cress. Pl. cl.

17 T. polyphy'llum (Cav. icon. 4. p. 65. t. 395.) leaflets 5-10, oblong or obovate, a little toothed, cuneated at the base; petals unguiculate, rather longer than the calyx, obtuse, quite entire. ⊙. ◡. G. Native of Chili on the Cordilleras. Flowers yellow.

Many-leaved Indian-cress. Fl. July, Oct. Clt. 1827. Pl. cl.

18 T. e'legans; leaves peltately and deeply 5-lobed; lobes obovate, lower ones smallest; segments of the calyx ovate-lanceolate, acute; petals spatulate, not much longer than the calyx. ♃. F. Native of Chili. Calyx apparently purple or red. Petals yellow. Root tuberous.

Elegant Indian-cress. Pl. cl.

Cult. All the species of *Indian-cress* are very shewy, therefore they are desirable plants in every collection. The greenhouse and frame species will thrive in any light rich soil, and cuttings will root freely if planted in the same kind of soil, under a hand-glass. The annual kinds should be sown in the open ground in April. In fact, all the species may be either increased by seeds or cuttings, whether said to be annual or perennial, because those species said to be annual are permanent, when protected from the frost in winter. The species are all climbing when supported, but if not they are prostrate. All the tuberous rooted kinds will grow well in a light soil in the open air, in a sheltered situation, all the summer, and in winter the roots may be taken up and kept in dry sand, until the spring, when they may again be planted out into the open ground.

II. MAGALLA'NA (in honour of the celebrated circumnavigator Ferdinand Magellan, or Magallanes in Portuguese, who was the first discoverer of Magellan). Cav. icon. 4. p. 50. D. C. prod. 1. p. 684.

Lin. syst. *Octándria, Monogýnia.* Calyx 5-lobed, spurred, 2 of which are profoundly parted, the other 3 are joined together into a 3-toothed one. Petals 5, unequal. Stamens 8, a little joined together at the base. Fruit 3-winged, 1-celled, and 1-seeded from abortion. Seed not sufficiently known. —A climbing annual plant, with ternate leaves, and yellow flowers.

1 M. porrifòlium (Cav. icon. 4. p. 51. t. 374.) ⊙. F. Native of South America at Port Desideratum. Climbing in hedges. Leaves divided into 3 linear entire leaflets.

Leak-leaved Magallana. Pl. cl.

Cult. The seeds should be sown in a pot of fine, light, rich earth in spring, and placed in a moderate hot-bed, and when the

plants are of sufficient size, they should be planted out into the open border, in a sheltered situation, where they will no doubt ripen their seed.

Order LVI. BALSAMI'NEÆ (plants agreeing with *Balsamìna* in important characters). A. Rich. dict. class. 2. p. 173. D. C. prod. 1. p. 685.—Impàtiens, Lin. gen. no. 1008.—Balsamìna, Tourn. inst. 418. t. 235. Juss. gen. 270. Gært. fruct. 2. p. 151. t. 113.

Calyx of 2 sepals; sepals small, deciduous, opposite, usually mucronate, imbricate in æstivation. Petals 4, hypogynous, cruciate, 2 outer ones alternating with the sepals, ending in a callous tip, upper one arched and emarginate, lower one entire, drawn out into a spur at the base; 2 inner petals alternating with the outer ones, more petal-like and equal with each other, usually bifid or appendiculate. Stamens 5, hypogynous, closely girding the ovary; filaments short, thickened at the apex; anthers rather connate, 3 lower ones opposite the petals, ovate, 2-celled, 2 superior ones rising in front of the upper petal; these are sometimes 1-celled, sometimes 2-celled. Anthers bursting lengthwise. Ovary 1. Style wanting; stigmas 5, distinct or connected into 1, sessile and short. Capsule oblong or ovate, 5-valved; valves separating with elasticity; central placenta ending in a slender thread, which adheres to the stigmas as in *Caryophýlleæ*, 5-angled; angles membranous, touching the intervalvular sutures, and therefore the young capsule is 5-celled, but 1-celled above the placenta. Seeds fixed to the placenta, pendulous, many in each cell, ovate-oblong, exalbuminous. Embryo straight, with a superior radicle. Cotyledons flat on the inside and convex on the outside. Tender herbs, with alternate or opposite, exstipulate, feather-nerved, toothed leaves. Peduncles axillary. M. de Candolle remarks that the flowers are those of *Fumariàceæ*, the capsules of *Oxalis*, the seeds of *Lìnum*, and the habit peculiar. The well-known elastic spring with which the seeds are ejected, constitutes a principal character of this order. It differs from *Tropæòleæ* in the calyx being of 2 sepals, in the structure of the corolla and capsule, and from *Oxalideæ* in the structure of flowers. All the species are remarkable for the singularity and varied colours of their blossoms.

Synopsis of the genera.

1 Balsami'na. Anthers 5, 2-celled. Stigmas 5, distinct. Valves of capsule bending inwards elastically at the apex. Peduncles 1-flowered.

2 Tytònia. Anthers and stigmas as in *Impàtiens*. Berry almost globular, 5-grooved, succulent, smooth, containing 5 hard, nut-like seeds, lapping over each other at both ends. Peduncles axillary, 1-3-flowered.

3 Impa'tiens. Anthers 5, 3 of which are 2-celled, and the 2 in front of the upper petal 1-celled. Stigmas 5, joined. Valves of capsule revolute, inwardly from the base to the apex. Peduncles axillary, branched, many-flowered.

I. BALSAMI'NA (from *balsamum*, balsam; Fuchs says this name is given because a balsam is made from the plant which is said to cure wounds; it is, however, called *balassan* by the Arabs, which is most likely to be the primitive of *Balsamìna*). Riv. irr. tetr. with a figure. D. C. prod. 1. p. 685.

Lin. syst. *Pentándria, Monogýnia.* Anthers 5, all 2-celled. Stigmas 5, distinct. Capsules ovate; valves at maturity bending inwards elastically at the apex. Cotyledons thick.—Pedicels always 1-flowered, solitary, or aggregate. Capsules puberulous. Flowers easily changed to double in the gardens.

§ 1. *Pedicels twin or aggregate. Leaves alternate.*

1 B. horte'nsis (Desp. dict. sc. nat. 3. p. 485.) pedicels aggregate; leaves lanceolate, serrated, lower ones opposite; spur shorter than the flower. ⊙. F. Native of the East Indies, China, Cochin-china, and Japan. Impàtiens balsamìna, Lin. spec. 1328. Mill. fig. t. 59. Blackw. t. 583. The varieties of this elegant plant, which cultivation has produced, are numerous, white, rose-coloured, red, purple, striped, and variegated with these colours, single and double of each. Mr. Miller speaks particularly of two remarkable varieties, which probably belong to one or other of the species. The first he calls the *Immortal Eagle*, a most beautiful plant, from the East Indies; the flowers of it are double, and much larger than those of the common kind, scarlet and white or purple and white, very numerous. The second kind he calls the *Cockspur*, introduced from the West Indies, which has single flowers as large as the other, but never more than semidouble, striped with red and white; this is apt to grow to a great size before it flowers, which is very late in the autumn, so that in bad seasons there will be hardly any flowers, and the seeds seldom ripen. Dr. Wallich found this species, or one very closely allied to it, on Chundrugiri and at Thankote in the East Indies. The Japanese are said to use the juice with alum for dyeing their nails red.

Common *Garden* Balsam. Fl. July, Oct. Clt. 1596. Pl. 1 to 2 feet.

2 B. coccínea (D. C. prod. 1. p. 685.) pedicels aggregate; leaves oblong-oval, serrated; petioles with many glands; spur incurved, about equal in length to the flower. ⊙. F. Native of the East Indies. Impàtiens coccínea, Sims, bot. mag. t. 1256. Flowers scarlet, streaked with white.

Scarlet-flowered Balsam. Fl. June, Sept. Clt. 1808. Pl. 1 to 2 feet.

3 B. cornu'ta (D. C. prod. 1. p. 686.) pedicels aggregate; leaves lanceolate, serrated; spur much longer than the flower. ⊙. F. Native of Ceylon and Cochin-china. Burm. zeyl. 41. t. 16. f. 1. Impàtiens cornùta, Lin. spec. 1328. Leaves dusky green, sweet smelling. Flowers purple or white, with the spur somewhat bowed. Capsules ovate, hispid. The Ceylonese call this species *Kudaelu-kola*, from *kudaelu*, a swallow, *kola*, a leaf. The inhabitants of Cochin-china use a decoction of the leaves as a wash to their head and hair, to which it gives a very sweet odour.

Horned Balsam. Fl. July, Sept. Clt. 1826. Pl. 1 foot.

4 B. Mysore'nsis (D. C. prod. 1. p. 686.) pedicels twin; leaves oblong-lanceolate, remotely-toothed; stem simple, filiform; spur straight, shorter than the flower. ⊙. F. Native of Mysore in the East Indies. Impàtiens Mysoréns is, Roth. in Rœm. et Schult. syst. 5. p. 348. Flowers small, red.

Mysore Balsam. Fl. July, Sept. Clt. 1820. Pl. $\frac{1}{2}$ to 1 ft.

5 B. scabriu'scula; plant villous; leaves cuneately-lanceolate, acute, with pointed serratures, tapering to the base; flowers axillary, twin, villous, spurless. ⊙. F. Native of the East Indies. Impàtiens scabriúscula, Heyne, in Roxb. fl. ind. 2. p. 404. This is a small branching species.

Roughish Balsam. Pl. 1 foot.

§ 2. *Pedicels aggregate. Leaves opposite.*

6 B. oppositifòlia (D. C. prod. 1. p. 686.) pedicels aggregate; leaves lanceolate, serrated; spur shorter than the flower. ⊙. F. Native of Ceylon, in sandy places. Impàtiens oppositifòlia, Lin. spec. 1328. Rheed. mal. 9. t. 31. Flowers small, purplish-blue.

Opposite-leaved Balsam. Pl. 1 foot.

7 B. heterophy'lla; pedicels aggregate; leaves linear, very long, rounded at the base, remotely and cuspidately serrated; spur much longer than the flower. ⊙. F. Native of the East Indies, bordering on the district of Silhet. Impàtiens heterophýlla, Wall. fl. ind. 2. p. 458. Leaves 6 inches long. Flowers large, purplish, with the 2 lateral petals 2-lobed, outer lobe extremely large.

Variable-leaved Balsam. Pl. 2 feet.

8 B. fasciula'ta (D. C. prod. 1. p. 686.) pedicels aggregate, shorter than the leaves; leaves lanceolate. ⊙. F. Native of Malabar. Impàtiens fasciculàta, var. *α*. Lam. dict. 1. p. 359.—Rheed. mal. 9. p. 93. t. 47. Flowers pale-red, with an awl-shaped, green spur.

Fascicled-flowered Balsam. Pl. 1 *to 2 feet.*

9 B. Tìlo (D. C. prod. 1. p. 686.) pedicels aggregate, truly deflexed after flowering, 3-times shorter than the leaves; leaves ovate-lanceolate, acute, tapering to the base; spur incurved. ⊙. F. Native of Malabar. Impàtiens fasciculàta *β*, Rœm. et Schult. syst. 5. p. 349.—Tìlo, Rheed. mal. 9. p. 93. t. 49. Flowers pale, with an incurved, green spur.

Tilo Balsam. Pl. 1 to 2 feet.

10 B. mi'nor (D. C. prod. 1. p. 686.) pedicels aggregate, truly deflexed after flowering, 4-times shorter than the leaves, about the length of the spur; lower leaves ovate, stalked, upper ones ovate-lanceolate, tapering to the base. ⊙. F. Native of Malabar. Impàtiens fasciculàta, var. *γ* and *δ*, Rœm. et Schult. syst. 5. p. 349.—Rheed. mal. 9. t. 50. and 51. Flowers whitish, with a straight greenish spur.

Smaller Balsam. Fl. July, Sept. Clt. 1817. Pl. $\frac{1}{2}$ to 1 foot.

§ 3. *Pedicels solitary. Leaves alternate.*

11 B. latifòlia (D. C. prod. 1. p. 686.) pedicels usually solitary, shorter than the leaves; leaves ovate, crenated, rather pilose; spur longer than the flower. ⊙. F. Native of the East Indies. Impàtiens latifòlia, Lin. spec. 1328.—Rheed. mal. 9. t. 48. Flowers pale-red, about the same size as those of the common balsam.

Broad-leaved Balsam. Fl. Jul. Sept. Clt. 1818. Pl. 1 to 2 ft.

12 B. Leschenau'ltii (D. C. prod. 1. p. 686.) pedicels shorter than the leaves; leaves smooth, oval, taper-pointed at both ends, crenated, lower teeth acute, glandular; spur about the length of the flower. ⊙. F. Native of Ceylon. Flowers red, about the size of those of the last species.

Leschenault's Balsam. Pl. 1 foot.

13 B. bífida (D. C. prod. 1. p. 686.) pedicels solitary; leaves oblong, serrated, stalked; spur very long, bifid. ⊙. F. Native of the Cape of Good Hope. Impàtiens bífida, Thunb. fl. cap. 2. p. 54. Flowers red?

Bifid-spurred Balsam. Fl. June, Sept. Clt. 1820. Pl. 1 ft.

14 B. Cape'nsis (D. C. prod. 1. p. 686.) pedicels capillary; leaves stalked, ovate, crenated, with the notches bearing hairs; spur longer than the flower. ⊙. F. Native of the Cape of Good Hope in woods. Impàtiens Capénsis, Thunb. fl. cap. 2. p. 54. Flowers red?

Cape Balsam. Fl. June, Sept. Clt. 1818. Pl. 1 foot.

15 B. móllis; upper part of plant soft, villous; pedicels filiform, half the length of the leaves; leaves lanceolate, acuminated, with gibbous, cuspidate serratures; spur length of flower, with the end incurved. ⊙. F. Native of the East Indies on Sheopore, in rich moist shady situations. Impàtiens móllis, Wall. fl. ind. 2. p. 461. Flowers large, purple, nodding.

Soft Balsam. Fl. July, Aug. Pl. 2 to 3 feet.

§ 4. *Pedicels solitary. Leaves opposite.*

16 B. rosmarinifòlia (D. C. prod. 1. p. 686.) pedicels shorter than the leaves; leaves linear; spur short, rather recurved at the end. ⊙. F. Native of Ceylon. Impàtiens rosmarinifòlia, Retz. obs. 5. p. 29. no. 79. Bert. amœn. p. 20. Leaves with spinulose serratures. Flowers small, purplish.

Rosemary-leaved Balsam. Pl. 1 foot.

17 B. mu'tila (D. C. prod. 1. p. 686.) pedicels usually solitary; leaves lanceolate, serrated; spur cucullate, blunt, mutilated. ⊙. F. Native of and cultivated in Cochin-china. Impàtiens mùtila, Lour. cochin. 512. Flowers scarlet.

Mutilated-spurred Balsam. Pl. $1\frac{1}{2}$ foot.

18 B. cochlea'ta (D. C. prod. 1. p. 686.) pedicels usually solitary, elongated; leaves oblong, somewhat serrated; spur twisted, compressed; root creeping. ⊙. F. Native of China, and cultivated about Canton. Impàtiens cochleàta, Lour. fl. cochin. 512. Flowers beautiful scarlet. Stem red, almost destitute of branches.

Twisted-spurred Balsam. Pl. 1 foot.

19 B. Chine'nsis (D. C. prod. 1. p. 686.) pedicels longer than the leaves; leaves ovate; spur greatly arched; stem branched. ⊙. F. Native of China. Impàtiens Chinénsis, Lin. spec. 1328. Stem red. Flowers reddish-purple.

Chinese Balsam. Fl. July, Sept. Clt. 1824. Pl. 1 foot.

20 B. pube'rula; peduncles 1-flowered, deflexed after flowering; leaves elliptical, pointed at both ends, serrated, younger ones as well as the stem rather scabrous, from rough down. ⊙. F. Native of Nipaul. Impàtiens pubérula, D. C. prod. 1. p. 687. Flowers large, purplish.

Puberulous Balsam. Pl. 1 to $1\frac{1}{2}$ foot.

Cult. The seeds of these plants should be sown on a moderate hot-bed in spring, and when the plants are about 2 or 3 inches high they should be planted into separate small pots, taking care to shade them until they have taken fresh root, replacing them in the hot-bed, after which they should have a moderate share of free air admitted to them when the weather is favourable, to prevent their being drawn up tall and weak; they should then be shifted from size to size of pots, until the plants have grown the size required, and when in flower, they may be placed in the greenhouse, where they will make a very shewy appearance, and seed freely. Some may be planted out, when young, in the open border in a sheltered situation, where they will flower, if the summer proves favourable. A light, rich soil, or a mixture of loam, peat, and sand, suits them best. Balsams are all shewy flowering plants, and are worth cultivating for the sake of decorating greenhouses when the greenhouse plants are set out in the open air. Those grown in pots require to be often refreshed with water.

II. TYTO'NIA (in honour of Arthur Tyton, F.L.S. by whose care many of the oldest inhabitants of our gardens are preserved, and more particularly many of those plants which were cultivated by Miller, which do not now exist in any collection but his own).

Lin. syst. *Pentándria, Monogýnia.* Anthers 5, 3 of which are 2-celled, and the 2 in front of the upper petal 1-celled. Stigmas 5, joined together. Flowers with a remarkable gibbous spur. Berry almost globular, 5-grooved, succulent, smooth, red, size of a cherry, containing 5 hard, nut-like, obliquely-oblong seeds, lapped over each other at both ends. Peduncles axillary, solitary, 1-3-flowered. Leaves opposite and alternate.

1 T. na'tans; peduncles 3-flowered; leaves alternate, linear-

lanceolate, serrated; spur very short, gibbous. ⊙. S. W. Native of the East Indies, in ponds and ditches, &c. of sweet water. Stem piped, all the parts that grow in or float on the water bending in various directions, the parts above the water are erect and branchy, the former is jointed and emit roots from the joints. Flowers large, very beautifully variegated with red, white, and yellow. When in flower this is one of the most elegant water-plants. Impàtiens nàtans, Willd. spec. 1. p. 1175.

Floating Tytonia. Fl. July, Sept. Clt. 1810. Pl. floating in water.

2 T. MADAGASCARIE'NSIS; pedicels solitary, much shorter than the leaves; leaves opposite, oval, crenated; spur gibbous, almost wanting; stem simple. ⊙. S. W. Native of Madagascar, in ditches and ponds. Balsamìna Madagascariénsis, D. C. prod. 1. p. 686. Flowers small, float.

Madagascar Tytonia. Fl. July, Sept. Clt. 1824. Pl. float.

Cult. This is a beautiful genus of water-plants, worth cultivating in every collection. They should be grown in large pots or pans of water in a rich loamy soil, and placed in a warm part of the stove or in a hot-bed. The seeds should be sown in spring.

III. IMPA'TIENS (from *impatiens*, impatient; a metaphorical name given to these plants because of the elasticity of the valves of the capsule when touched, which throw out the seed with great force). Riv. irr. tetr. with a figure. D. C. prod. 1. p. 687.

LIN. SYST. *Pentándria, Monogýnia.* Anthers 5, 3 of which are 2-celled, and the 2 in front of the upper petal are only 1-celled. Stigmas 5, joined together. Capsules prismatically terete, elongated, with the valves curling inwards from the base to the top, and expelling the seeds when touched.—Peduncles axillary, branched, many-flowered. Capsules smooth. Leaves alternate, very rarely opposite.

§ 1. *Peduncles bearing from 2-5, but usually 3 flowers, axillary.*

1 I. TRIFLÒRA (Willd. spec. 1. p. 1175.) peduncles 3-flowered, very short; leaves linear-lanceolate, very long; spur arched, longer than the flower and pedicel. ⊙. F. Native of Ceylon, in dry sandy places.—Burm. zeyl. p. 41. t. 16. f. 2. Flowers large, pale-red.

Three-flowered Touch-me-not. Fl. June, Sept. Clt. 1818. Pl. 1 foot.

2 I. FU'LVA (Nutt. gen. amer. 1. p. 146.) peduncles 2-4-flowered; leaves rhomboid-ovate, blunt, mucronately-toothed: the petal bearing the spur is longer than the rest. ⊙. H. Native of North America from Canada to Carolina, in wet shady places. Im. biflòra, Willd. spec. 1. p. 1175. Sweet, fl. gard. t. 43. Im. nóli-tángere β, Michx. Flowers dark-yellow, with red spots on the inside; spur emarginate.

Fulvous-flowered Touch-me-not. Fl. June, July. Clt. 1818. Pl. 1 to 2 feet.

3 I. PA'LLIDA (Nutt. gen. amer. 1. p. 146.) peduncles 3-4-flowered; leaves rhomboid-ovate, rather acute, mucronately toothed; spurred petal dilated, shorter than the rest; spur recurved, very short. ⊙. H. Native of North America from New England to Carolina near springs and rivulets in shady places. Im. nóli-tángere, Pursh, fl. sept. amer. 1. p. 171. Flowers pale-yellow. Plant glaucous.

Pale-flowered Touch-me-not. Fl. June, July. Clt. 1817. Pl. 1 to 2 feet.

4 I. NÓLI-TA'NGERE (Lin. spec. 1328.) peduncles 3-4-flowered, shorter than the leaves, and spreading under them; flowers pendulous; spur recurved at end; leaves ovate, coarsely toothed; joints of stem swollen. ⊙. H. Native of Europe and Siberia, in shady humid places; in Britain, in several parts of Westmoreland; also in Yorkshire, Lancashire, and Wales; on the banks of Wynandermere, in little brooks and watery places, near Rudall-hall, plentifully. Smith, engl. bot. t. 937. Oed. fl. dan. t. 582. Schkuhr. handb. t. 270. Flowers large, yellow, spotted internally with red. Ray says this plant is dangerously diuretic. Dodonæus speaks of its pernicious qualities. The seeds of this, as well as all the other species are thrown out with considerable force when ripe, upon being touched. Hence the specific name *Noli-me-tangere*, and the English names of *Quick-in-hand* and *Touch-me-not*. The elasticity of the capsules has furnished names for this plant in most European languages. In German it is called *Spring-same, Springkraut*, &c.; in Swedish, *Springkorn*; in Danish, *Springkorn* or *Springurt*; in French, *Impatiente, Ne me touchez pas*, and also *Balsamine-jaune*; in Italian, *Erba impaziente, Balsamìna gialla*; in Spanish, *No quieras tocarme, Balsamina amarilla*; in Portuguese, *Melindre nao me toquis*. The leaves are said by Villars to hang pendant at night; we have not observed this. The whole plant is considerably acrid, and no quadruped, except perhaps goats, are said to eat it. Notwithstanding this, it was formerly used as a diuretic and vulnerary, and was given to relieve the hæmorrhoids and the strangury. Boerhaave regarded it as poisonous.

FIG. 120.

Common *Touch-me-not*. Fl. Jul. Aug. Brit. Pl. 1 to 1½ ft.

5 I. PARVIFLÒRA (D. C. prod. 1. p. 687.) peduncles 3-6-flowered, and are as well as the flowers erect; leaves ovate, acuminated, serrated; serratures mucronate; spur straight. ⊙. H. Native on the Upper Irtisch, without the limits of Russia. Flowers pale-yellow, 3-times smaller than those of *I. nóli-tángere*. Leaves more blistered and larger.

Small-flowered Touch-me-not. Fl. June, Sept. Clt. 1820. Pl. 2 to 3 feet.

6 I. TRIPE'TALA (Roxb. hort. beng. p. 18.) peduncles short, 1-4-flowered, sometimes more; pedicels elongated, but much shorter than the petioles; leaves broad-lanceolate, acuminated, serrated, with the lower serratures cilia-like; corolla 3-petalled; spur hooked. ⊙. F. Native of the East Indies on the mountains of Silhet. Lower leaves opposite and tern. This species has a pretty appearance when in full blossom, the flowers being numerous, large, and of a lively red colour, with the nectary deeply tinged with yellow.

Three-petalled Touch-me-not. Fl. July, Sept. Clt. 1825. Pl. 1 foot.

7 I. HAMILTONIA'NA (D. Don, prod. fl. nep. p. 204.) peduncles dichotomous, 2-flowered, shorter than the petioles; leaves ovate, stalked, serrated, acuminated, tapering to the base; lateral petals horned on the back. ⊙. H. Native of Nipaul at Narainhetty. Flowers yellow. Im. nóli-tángere, Hamilt. mss. but not of Lin.

Hamilton's Touch-me-not. Fl. July, Aug. Pl. 1 foot.

8 I. TRILOBA'TA (Colebr. ex Spreng. syst. append. p. 99.) peduncles usually 4-flowered, spreading, about equal in length to the leaves; leaves oblong-lanceolate, serrated, smooth; spur conical, acuminated, incurved. ⊙. F. Native of Silhet. Flowers yellow.

Three-lobed-petalled Touch-me-not. Pl. 1 foot.

9 I. SCA'BRIDA (D. C. prod. 1. p. 687.) peduncles 3-4-flow-

ered, erect, shorter than the leaves; leaves oval, taper-pointed at both ends, serrated, younger ones on both surfaces, as well as the stem beset with scabrous down, adult ones smooth; spur very long. ⊙. H. Native of Nipaul. Flowers yellow.

Rough Touch-me-not. Fl. July, Aug. Pl. 1 foot.

10 I. DÍSCOLOR (D. C. prod. 1. p. 687.) peduncles 3-flowered or sometimes only 1-flowered from abortion, shorter than the leaves; leaves smooth, glaucous beneath, and green above, rather pilose, ovate, acute, mucronately-toothed; lower ones tapering much at the base. ⊙. H. Native of Nipaul. Flowers yellow.

Two-coloured-leaved Touch-me-not. Fl. July, Aug. Clt. 1820. Pl. 1 foot.

11 I. CRISTA'TA (Wall. fl. ind. 2. p. 456,) peduncles 2-4-flowered, equal in length to the petioles; leaves lanceolate, cuspidately-serrated, acuminated, pubescent; upper petal with a sharp keel; spur longer than the pedicel, incurved at the end. ⊙. H. Native of Hungtoo in Bissepur, on the confines of Chinese Tartary. Stem purplish. Flowers yellow, with minute purple dots. Stem pubescent, slightly angular, hardly jointed.

Crested-petalled Touch-me-not. Fl. July, Aug. Clt. 1827. Pl. 2 to 3 feet.

12 I. URTICIFÒLIA (Wall. fl. ind. 2. p. 457.) peduncles very long, filiform, 4-5-flowered; leaves ovate, acuminated, tapering to the base, coarsely and bluntly serrated, with bristly gland-bearing crenatures; spur equal in length to the pedicel, ample, conical, ending rather abruptly in a cylindrical horn. ⊙. H. Native of Nipaul at Gosainsthan, in the Himalaya mountains. Stem jointed, smooth. Peduncles bearing 4-5, alternate, longish, slender, 1-flowered pedicels, each having a bractea at the base. Flowers large, yellow, nodding.

Nettle-leaved Touch-me-not. Fl. July, Aug. Pl. 1 foot.

13 I. CALYCI'NA (Wall. fl. ind. 2. p. 463.) peduncles 2-flowered, equal in length to the petioles; leaves ovate, acuminated, acutely serrated; stipulas alternate, glandular; calyx large, ovate; spur long, cylindrical, ascending, exceeding the length of the peduncles; capsule cylindrical. ⊙. H. Native of Nipaul on Chitlong and on Chundrugiri. Plant erect, branching, jointed, villous. Flowers large, yellow, netted with purple veins.

Large-calyxed Touch-me-not. Pl. 1 foot.

14 I. GRA'NDIS (Heyne, mss. in Roxb. fl. ind. 2. p. 465.) peduncles 3-flowered; leaves ovate, acuminated, on long petioles, with 2 oblong glands below the base; spur very long. ⊙. H. Native of the East Indies. The flowers appear to be yellow, and are by far the largest of any of the species.

Great-flowered Touch-me-not. Pl. 1 to 2 feet.

15 I. FRUTICÒSA (Leschen. herb. D. C. prod. 1. p. 687.) peduncles 3-4-flowered, equal in length to the leaves; leaves oval, acuminated at both ends, serrulated; lower serratures glandular, somewhat scabrous above from scattered down, velvety-pubescent beneath; stem suffruticose. ♄. S. Native of the East Indies on the mountains, where it is commonly called *Kavegueda*. Flowers yellow?

Shrubby Touch-me-not. Shrub 2 feet.

§ 2. *Peduncles many-flowered, from* 6-20, *axillary and terminal, seldom radical.*

16 I. SULCA'TA (Wall. fl. ind. 2. p. 458.) peduncles axillary, many-flowered, shorter than the leaves; leaves opposite, with cuspidate serratures, somewhat rounded at the base on glandular slender petioles; stem branched, smooth, and deeply furrowed; nectary ample, ending abruptly in a slender curved spur. ⊙. H. Native of Nipaul at Gosainsthan. Flowers large yellow.

Furrowed-stemmed Touch-me-not. Pl. 2 feet.

17 I. BRACTEA'TA (Colebr. mss. in Roxb. fl. ind. 2. p. 459.) racemes terminal, oblong, many-flowered, fringed with the innumerable long coloured hairs of the lanceolate bracteas; leaves lanceolate, serrulated, almost opposite; lower lip of flower very large. Spur long, ascending. ⊙. F. Native of Silhet in the East Indies, as well as among rubbish at Narainhetty of Nipaul. Im. insígnis, D. C. prod. 1. p. 688. Im. racemòsa, D. Don, prod. fl. nep. p. 203. Im. fimbriàta, Hook. exot. fl. 146. This is a charming plant. Stem jointed, purplish. Leaves opposite and alternate. Racemes from 2-6 inches long, before expansion globular and capitate, afterwards oblong, beautifully decorated with numerous, pink-coloured, large flowers, interspersed with the dense pink hairs of the bracteas.

Bracteate-flowered Touch-me-not. Pl. 2 feet.

18 I. BICORNU'TA (Wall. fl. ind. 2. p. 460.) peduncles long, axillary, corymbose, crowded together towards the top of the stem and branches; leaves ample, approximate, ovate, acuminated, coarsely serrated, a little hairy above; nectary very large, conical, ending abruptly in a filiform spur; its mouth furnished with a long horn-like point; capsule cylindrical. ⊙. H. Native of Nipaul on Chundrugiri and Sheopore, as well as on the mountains towards Gosainsthan. Plant erect, branching. Stem jointed, angular towards the top, with several thick, cylindrical, purple glands scattered along the angles, otherwise smooth. Flowers large, variegated with purple dots, disposed in axillary corymbose racemes; pedicels filiform, fascicled, or whorled, leaning to one side, supported by 3 spreading, lanceolate, bractlets, which are at length reflexed.

Two-horned-flowered Touch-me-not. Pl. 2 to 3 feet.

19 I. LEPTO'CERAS (D. C. prod. 1. p. 688.) racemes axillary, panicled; flowers on long pedicels; leaves linear-lanceolate, elongated, tapering to both ends, with bristly serratures; spur exceedingly long, filiform. ⊙. H. Native of Nipaul, on the western part; also of Shreenugur, and among rubbish at Narainhetty. Im. odoràta, D. Don, fl. nep. p. 203. Balsamìna odoràta, Hamilt. mss. Im. longicórnu, Wall. fl. ind. 2. p. 462. A large, erect, branched, smooth, and fleshy species, with scattered leaves, crowded towards the top. Peduncles very slender, 3-6 inches long, naked; pedicels approximate, an inch long, supported by ovate-lanceolate, 3-nerved bracteas. Flowers yellow, fragrant, with the upper petal concave, a little ciliated, lateral petals 2-lobed. Stem with swollen joints.

Slender-horned Touch-me-not. Pl. 1 to 2 feet.

20 I. UMBELLA'TA (Heyne, mss. in Roxb. fl. ind. 2. p. 464.) umbels several, terminal, on long peduncles; leaves crowded towards the apex of the stem, ovate, obtuse, broadly-crenated, acute, tapering to the base, equal in length to the petioles; spur very long. ⊙. F. Native of the East Indies. Stem simple. Flowers probably yellow.

Umbelled-flowered Touch-me-not. Pl. 1 foot.

21 I. RACEMÒSA (D. C. prod. 1. p. 688.) peduncles 7-8-flowered, racemose, about the length of the leaves; leaves smooth, oblong, coarsely-toothed, acuminated at both ends; spur recurved, slender, rather longer than the flower. ⊙. H. Native of Nipaul. Flowers small, yellow.

Racemose-flowered Touch-me-not. Pl. 1 foot.

22 I. MICRA'NTHA (D. Don, prod. fl. nep. p. 203.) racemes corymbose, one-half the length of the leaves; leaves elliptical, acuminated, stalked, coarsely-crenated, tapering much to the base; spur equal in length to the pedicel; lateral petals appendiculate. ⊙. H. Native of Nipaul. Flowers rose-coloured, smaller than the rest.

Small-flowered Touch-me-not. Pl. 2 feet.

23 I. SCAPIFLÒRA (Heyne, mss. in Roxb. fl. ind. 2. p. 404.) scape radical, bearing a raceme of long-stalked flowers; leaves roundish, cordate, many-nerved, entire; spur longer than the

pedicel. ⊙? ♃? S. Native of the East Indies. This singular species appears to have tuberous roots. Leaves radical, almost kidney-shaped. Flowers large, apparently purplish.

Scape-bearing Touch-me-not. Pl. ½ foot.

Cult. *Impàtiens* is a genus of beautiful and singular plants. The seeds of the hardy annual kinds only require to be sown in the open ground in a shady situation; those of the frame and stove kinds should be raised on a moderate hot-bed in spring, and when the plants are about 2 inches high, they may be planted out in the open border in a warm sheltered situation, but a few of them may be kept in pots separately, and placed in a greenhouse stove or hot-bed, to secure a sufficient quantity of seeds, these should be planted in a light rich soil. The *Impàtiens scapiflòra*, if perennial, should be kept in the stove, and care should be taken not to give it too much water in the winter, as from its succulent nature it will be apt to rot at that season.

ORDER LVII. OXALI'DEÆ (plants agreeing with *O'xalis* in important characters). D. C. prod. 1. p. 689.

Calyx of 5 sepals (f. 122. *a.*), or 5-parted (f. 121. *a.*) permanent, equal. Petals 5 (f. 121. *b.* f. 122. *b.*), hypogynous, equal, sometimes cohering to each other at the very base, unguiculate; with straight claws and spreading limbs, spirally twisted in æstivation (f. 121. *a.*). Stamens 10 (f. 121. *d. c.* f. 122. *c.*); filaments awl-shaped, erect, usually monadelphous at the base, 5 of which are opposite the petals, inner ones longest (f. 122. *c.*). Anthers 2-celled (f. 122. *c.*), not adnate. Ovary free, 5-angled, 5-celled. Styles 5 (f. 122. *d.*), filiform, sometimes all shorter than the stamens (f. 122. *d.*); these are called very short (f. 122. *d.*) in the specific characters, sometimes longer than the outer stamens, and shorter than the interior ones, these are called intermediate in the specific characters; sometimes all longer than the stamens, these are called very long, or longer than the stamens in the specific characters. Stigmas usually pencil-formed (f. 122. *d.*), also capitate and somewhat bifid. Capsule ovate or oblong, somewhat pentagonal, membranous, 5-celled, 5-10-valved, bursting lengthwise at the angles. Seeds few, fixed to the central axis (f. 121. *g.*) of the cells, ovate, striated, younger ones inclosed in a fleshy aril, but at length bursting elastically from the aril at the apex, and the seeds are, therefore, thrown out at one end. Albumen cartilaginously-fleshy. Embryo inverse, length of the albumen, with leafy cotyledons, and a long superior radicle.—Subshrubs or herbs, rarely trees. Leaves alternate, rarely opposite or in whorls, simple and variously compound. This order was formerly confounded with *Geraniàceæ*, but it is the opinion of Jussieu and De Candolle that the species are more nearly allied to *Rutàceæ* and *Zygophýlleæ*, and that their character and peculiar habit are quite sufficient to distinguish them. The beauty of most of the species of *O'xalis* is very great, and of easy cultivation. Their properties are well known. All of them are slightly acid, whence some have been employed as salads. Their acidity is very agreeable, and depends upon the presence of a small quantity of oxalate of potass. In some South American species, oxalic acid exists in great abundance. Several species are employed in Brasil as a remedy for certain fevers of that country.

Synopsis of the Genera.

1 AVERRHÒA. Calyx 5-cleft (f. 121. *a.*). Berries large, oblong, 5-celled (f. 121. *g.*). Trees with impari-pinnate leaves.

2 BIO'PHYTUM. Sepals 5. Stamens nearly free. Stigmas emarginately bifid at the apex. Capsule ovate-globose. Subshrubs or herbs with abruptly-pinnate leaves.

3 O'XALIS. Sepals 5 (f. 122. *a.*), free, or connected at the base. Stamens monadelphous at the base. Stigmas pencil-formed (f. 122. *d.*), rarely capitate or bifid. Capsule oblong or cylindrical. Subshrubs or herbs. Roots tuberous or fibrous. Leaves simple or 3-4-5-foliate (f. 122.).

4 LEDOCA'RPUM. Calyx 5-parted, girded by 10 linear bracteas. Stamens permanent, free. Styles thickened. Small branching shrubs with opposite, 3-parted, linear leaves.

I. AVERRHO'A (in honour of Averrhoes of Corduba, a celebrated Arabian physician, who resided in Spain during the domination of the Moors; he lived towards the middle of the 12th century, and translated Aristotle into Arabic). Lin. gen. no. 576. Lam. ill. t. 385. Corr. ann. mus. 8. p. 71. t. 2. D. C. prod. 1. p. 689.

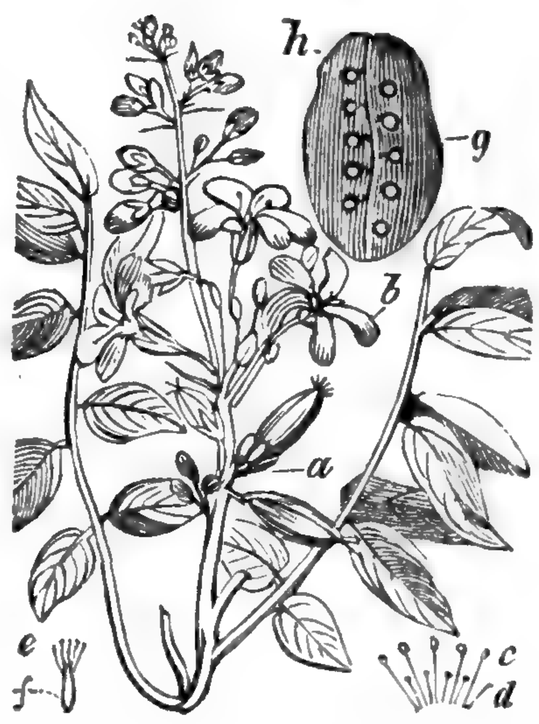
LIN. SYST. *Decándria, Pentagýnia.* Calyx of 5 sepals (f. 121. *a.*), which are more or less joined together at the base. Petals 5 (f. 121. *b.*). Stamens 5 (f. 121. *c.*), alternating with the petals, or 10 (f. 121. *c. d.*) alternate ones, smaller, joined together at the base into a short ring. Ovary angular. Styles 5, permanent. Berry large, oblong (f. 121. *g.*), 5-furrowed, 5-celled, with a few seeds in each cell, adhering to the central angle (f. 121. *g.*). Embryo straight, in a fleshy albumen.—East Indian trees, with alternate, impari-pinnate leaves, with alternate leaflets, racemose panicles of flowers, and eatable fruit. The leaves of *A. Bilimba* are irritable to the touch, as in *Biophytum sensitìvum.*

1 A. CARAMBÒLA (Lin. spec. 613.) calyxes smooth; limb of petals roundish; stamens 5; fruit with 5 acute angles; seeds arillate. ♄. S. Native of the East Indies and all the warmer parts of Asia, and is now cultivated in many parts of South America.—Rumph. amb. 1. p. 115. t. 35.—Rheed. mal. 3. p. 51. t. 43. and 44.—Cav. diss. 7. t. 220. Tree with a spreading head. Leaves have about 4-5 pairs of ovate, acuminated, entire, stalked leaflets, the outer ones largest. Flowers lateral, scattered, disposed in short racemes, usually rising from the smaller branches, but sometimes from the larger ones or the trunk itself. Calyx red. Corolla small, bell-shaped, with oblong-ovate petals, which are variegated with purple and yellow. Fruit the size of a hen's egg, acutely 5-cornered, with a yellow, thin, smooth rind, and a clear watery pulp, in many sweet, in others acid, with hardly any smell. Seeds small, oblong, angular, flatted, and brown. The stamens are in 5 pairs, each pair placed in the angles of the germ, only one stamen is fertile or furnished with an anther; the filaments are curved, adapted to the shape of the ovary, they may be pressed down gently so as to remain, and then when moved a little upwards rise with a spring. Dr. Bruce gives a curious detailed account of the sensitive qualities of the petioles, and even branches of this tree. Rheede says the *Carambola* is a tree about 14 feet high, and hardly a foot in girth, with a brown bark; that it bears fruit 3 times a year, from the age of 3 to 50 years, that the root, leaves, and fruit are used medicinally, either alone or with *Areca* or *Betel* leaves; that the latter, when ripe, are esteemed delicious; unripe are pickled; and that they are also used in dyeing and for other economical purposes. Burman says that the acid

juice of this is not so pleasant as that of *A. Bilímba*, that the fruit is rather larger, and is used for the same purposes, and that it is a very beautiful tree. In Bengal the tree is called *Camruc* and *Camrunga;* in Malabar, *Tamara-tonga;* the Bramins and Portuguese call it *Carambolas*.

Carambola Averrhoa. Clt. 1793. Tree 14 to 20 feet.

FIG. 121.



2 A. BILI'MBI (Lin. spec. 613.) calyxes pubescent; limb of petals oval-oblong; stamens 10; fruit obtuse-angled; seeds without aril. ♄. S. Native of Goa and many other parts of the East Indies, both within and without the Ganges, and is now cultivated in many parts of South America.—Cav. diss. 7. t. 219.—Rumph. amb. 1. p. 115. t. 35.—Rheed. mal. 3. p. 51. t. 45 and 46. This is a small tree, with a few reclining branches. The leaves have from 5-10-pairs of ovate-lanceolate, entire, smooth leaflets on short stalks. The flowers are reddish-purple, disposed in racemes, rising from the trunk. The fruit is oblong, somewhat resembling a small cucumber, with a thin, smooth, green rind, filled with a grateful acid juice, and the substance and seeds not unlike that of a cucumber. A syrup is made of the juice and a conserve of the flowers, which are esteemed excellent in fevers and bilious disorders. The tree is called *Bilimbi* in Malabar.

Bilimbi or Cucumber-tree. Fl. May, July. Clt. 1791. Tree 8 to 15 feet.

Cult. These are very pretty trees, and will thrive well in a light sandy loam. Ripe cuttings will strike root freely in sand under a hand-glass, in heat.

II. BIO'PHYTUM (from *βιος*, *bios*, life, and *φυτον*, *phyton*, a plant; the leaves of *B. sensitívum* are sensitive to the touch). D. C. prod. 1. p. 689.

LIN. SYST. *Decándria, Pentagýnia.* Calyx of 5 sepals. Stamens 10, free, the 5 outer ones are smaller than the inner 5, alternating with each other. Stigmas 5, emarginately-bifid and capitate. Capsules ovate, globose, somewhat pentagonal.—Annual or suffruticose herbs, with a naked stem, bearing at the apex, a fascicled whorl of abruptly-pinnate leaves; leaflets many, opposite. Peduncles many-flowered, umbellate. St. Hilaire does not consider this genus distinct from the following; indeed there is no character yet discovered that would separate them, but the peculiar habit of the plants is sufficient.

1 B. SENSITÍVUM (D. C. prod. 1. p. 690.) almost stemless; peduncles thick, bearing many flowers at the apex, about equal in length to the leaves; leaflets 14 pairs, oblong, obtuse, mucronate. ☉. S. Native of the East Indies and China, in gardens and meadows. O'xalis sensitìva, Lin. spec. 622. Jacq. oxal. no. 21. t. 78. f. 4.—Garc. in phil. trans. 1730. p. 379. t. 2.—Rumph. amb. 5. p. 301. t. 104. f. 2.—Rheed. mal. 9. p. 33. t. 19. The leaves of this plant contract on the slightest touch, like those of *Mimòsa pudìca*. It is a beautiful plant, with umbels of small yellow flowers. Stigmas emarginately bifid.

Sensitive Biophytum. Fl. May, July. Clt. 1824. Pl. ¼ to ½ foot.

2 B. DENDROÌDES (D. C. prod. 1. p. 690.) stem woody, simple, leafy at the apex; petioles of leaves with a fascicle of long hairs between each pair of leaflets; leaflets of 12 pairs, oblong, unequal-sided, acute, ciliated, outer ones largest; peduncles 1-flowered. ♄. S. Native of New Granada between Guaduas and Quebrada de la Carbonera. O'xalis dendroìdes, H. B. et Kunth, nov. gen. amer. 5. p. 250. Flowers violaceous. Cells of ovary containing only one seed.

Tree-like Biophytum. Shrub ½ to 1 foot.

3 B. MIMOSOÌDES (St. Hil. fl. bras. 1. p. 107. t. 21. under *O'xalis*,) stem shrubby, hardly branched at the apex; leaves corymbose, abruptly-pinnate; leaflets linear, obliquely-truncate both at the apex and the base, puberulous, veinless above; peduncles shorter than the leaves, villous, very much thickened at the apex, bracteate, 3-4-flowered; pistils much longer than the stamens; cells of ovary 4-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. Flowers white, resembling those of *Stellària Holóstea*. Filaments rather monadelphous at the base. Stigmas laciniately-jagged, capitate.

Mimosa-like Biophytum. Fl. Nov. Shrub ½ foot.

4 B. CA'STA; stem shrubby, umbellately branched; leaves abruptly-pinnate, of many pairs of leaflets, smoothish; leaflets adnate, somewhat rhomboid; fascicles of flowers subsessile, bracteate; stamens exceeding the styles in length. ♄. S. Native of Brazil. O'xalis cásta, Zucc. in act. acad. monach. 9. t. 6.

Chaste Biophytum. Shrub ½ foot.

5 B. DO'RMIENS; stem suffruticose, simple; leaves abruptly-pinnate, with many pairs of pubescent, nearly sessile leaflets, which are angular at the base, oblong, obtuse; pedicels aggregate, 1-flowered, rising from the bracteas. ♄. S. Native of Brazil. O'xalis dórmiens, Zucc. in act. acad. monach. 9. t. 5.

Dormant Biophytum. Shrub ½ foot.

6 B. SO'MNIANS; stem shrubby, simple; leaves abruptly-pinnate, with about 6 pairs of leaflets, outer ones largest, obovate-oblong, obtuse, lower ones rather cordate, acute; heads of flowers on long peduncles, bracteate; styles exceeding the stamens in length. ♄. S. Native of Brazil. O'xalis sómnians, Mart. mss. Zucc. in act. acad. monach. 9. t. 4.

Sleeping Biophytum. Shrub ½ foot.

Cult. These singular and beautiful little plants will thrive best in a mixture of loam and peat. The seeds of the first species should be sown in spring on a hot-bed, and after the plants are of sufficient size, they should be separated and planted singly in pots shaded until the plants have taken fresh root, they may then be removed to the stove. The rest of the species, being suffruticose plants, may be either increased by cuttings or seeds.

III. O'XALIS (from *οξυς*, *oxys*, acid; the leaves have an acid taste). Lin. gen. no. 582. D. C. prod. 1. p. 690. O'xys, Tourn. inst. t. 19.

LIN. SYST. *Decándria, Pentagýnia.* Sepals 5, (f. 122. *a.*) free, or joined together at the base. Petals 5. (f. 122. *b.*) Stamens 10, (f. 122. *c. c.*) with the filaments connected together a little way at the base, 5 of which are exterior, and are shorter than the other 5. Styles 5, usually crowned by pencil-like, (f. 122. *d.*) rarely capitate, or bifid stigmas. Capsules pentagonal, oblong, or cylindrical.—Permanent, caulescent, stipitate, or stemless herbs. Leaves various, but never abruptly-pinnate, full of an acid juice. Flowers of various hues.

§ 1. *Hedysaroídeæ* (plants with the habit of *Hedýsarum*). *D. C. prod.* 1. *p.* 690. *Peduncles bifid, or bifidly-umbelliferous, with one flower in the fork, bearing the other flowers on the inside of the divisions, with usually petinated bracteas; flowers secund, intermixed with the bracteas. Stems leafy, usually suffruticose. Leaves trifoliate; leaflets ovate, lanceolate, or rhomboid, rarely obcordate, with the middle one on a long stalk. Cells of ovary* 1-5-*seeded.—Species natives of South America.*

1 O. PENTA'NTHA (Jacq. ox. no. 1. t. 1.) stem erect, branched, leafy; peduncles umbelliferous, about the length of the leaves;

leaves pilose; lateral leaflets roundish, emarginate, middle one obovate, blunt; styles shorter than the outer stamens. ♄. S. Native of Caraccas and Brazil. P. divaricàta, Mart. Flowers small, spreading, yellow.

Var. β, Humbóldtii (D. C. prod. 1. p. 690.) styles twice as long as the stamens. ♄. S. Native of South America. O. pentántha, H. B. et Kunth, nov. gen. amer. 5. p. 247. Flowers spreading, yellow. Probably a distinct species.

Five-flowered Wood-sorrel. Shrub 1½ foot.

2 O. psoraleoìdes (H. B. et Kunth, nov. gen. amer. 5. p. 246. t. 470.) stem erect, leafy; branches downy; peduncles longer than the petioles, bifid at the apex, 6-8-flowered; leaves downy, silky or silvery beneath; calyxes downy, hairy; styles intermediate. ♄. S. Native of South America, near Santa-Fé de Bogota? Flowers yellow.

Psoralea-like Wood-sorrel. Shrub ½ to 1 foot.

3 O. Plumie`ri (Jacq. ox. no. 3.) stem erect, leafy; peduncles umbelliferous, 4-6-flowered, length of leaves; leaflets entire, ovate, bluntish. ♄. S. Native of South America, particularly in the Caribbee Islands, Guiana, and La Vera Cruz. Lindl. bot. reg. t. 810. O. frutéscens, Lin. spec. 624.—Plum. ed. Burm. t. 213. f. 1. Flowers yellow. Capsules smooth.

Plumier's Wood-sorrel. Fl. year. Clt. 1769. Shrub 1½ foot.

4 O. Neæ`i (D. C. prod. 1. p. 690.) stem erect, leafy; peduncles umbelliferous, 4-flowered, length of leaves; leaflets villous, lateral ones oval, emarginate, middle one ovate-lanceolate; styles intermediate. ♄. S. Native of Mexico about Acapulca. Flowers yellow. This is apparently an intermediate species between the two preceding.

Nees's Wood-sorrel. Shrub 1½ foot.

5 O. Barrelie`ri (Jacq. ox. no. 4. t. 3.) stem erect, branched, leafy; peduncles bifid, racemose, length of leaves; leaflets ovate-lanceolate; styles length of inner stamens. ♄. S. Native of Guiana, Brazil, and the Caraccas. P. campéstris, Mart.—Barrel. icon. t. 1169. Petals of a pale flesh-colour, with the 3 superior ones marked with yellow at the base. Stem, petioles, and peduncles hairy. Stigmas capitate.

Barrelier's Wood-sorrel. Fl. May, Nov. Clt. 1796. Sh. 1-2 ft.

6 O. Pavònii; stem erect; leaflets obovately-roundish, pubescent; pedicels dichotomous, about the length of the leaves; cells of ovary many-seeded. ♄. S. Native of Peru. (v. s. herb. Lamb.) Flowers yellow.

Pavon's Wood-sorrel. Shrub 1 to 2 feet.

7 O. lespedezoìdes; hairy; lateral leaflets nearly sessile, obovately-lanceolate, all pendulous; peduncles axillary, rather longer than the petioles; flowers capitate, crowded. ♄. S. Native of Peru. (v. s. herb. Lamb.) Flowers yellow.

Lespedeza-like Wood-sorrel. Shrub 2 to 3 feet.

8 O. hedysarifòlia (Raddi. mem. bras. add. p. 22.) stem erect, leafy; peduncles terminal, few-flowered; leaflets ovate, acute at both ends, and are, as well as the petioles, hairy. ♄? S. Native of Brazil in grassy places, near Rio Janeiro. Flowers yellow.

Hedysarum-leaved Wood-sorrel. Shrub 1 to 2 feet.

9 O. hedysaroìdes (H. B. et Kunth, nov. gen. amer. 5. p. 247.) stem leafy, smooth; peduncles bifid at the apex, many-flowered; leaflets ovate-oblong, emarginate, smooth, rather glaucous beneath, lateral ones smallest, remote; calyxes smooth. ♄. S. Native of South America on the Andes about Quito, and at Santa-Fe de Bogota in cold and temperate places. Flowers pale-pink? This species is nearly allied to *O. Barrelièri*.

Hedysarum-like Wood-sorrel. Shrub 1 to 2 feet.

10 O. glau`ca (H. B. et Kunth, nov. gen. amer. 5. p. 247. t. 471.) stem leafy, smooth; peduncles bifid at the apex, 7-9-flowered, length of leaves; leaflets ciliated, smooth, glaucous, lateral ones roundish, remote, terminal one elliptic-ovate; sepals smooth, each marked with a spot at the apex; styles intermediate. ♄. S. Native of South America in shady places, on the banks of the river Amazon, not far from Tomependa. Flowers white.

Glaucous Wood-sorrel. Shrub 1 to 2 feet.

11 O. Borje´nsis (H. B. et Kunth, nov. gen. amer. 5. p. 247.) stem leafy, smooth; peduncles bifid at the apex, many-flowered, length of petioles; leaflets rounded at the apex, smooth, glaucous, lateral ones obovate-elliptical, remote, terminal one somewhat obovate-elliptical; sepals puberulous, spotless. ♄. S. Native of South America, on the banks of the river Orinoco, in shady humid places, near St. Borja. Flowers yellow.

Borja Wood-sorrel. Shrub 1 to 2 feet.

12 O. angustifòlia (H. B. et Kunth, nov. gen. amer. 5. p. 247.) stem leafy, smoothish; peduncles 3-4-flowered, longer than the petioles; leaflets oblong-linear, smooth, glaucous, lateral ones smaller, remote; calyx smooth, spotless. ♄. S. Native of New Spain, on the western declivities near La Venta del Peregrino. Flowers yellow.

Narrow-leaved Wood-sorrel. Shrub 1 to 2 feet.

13 O. cytisoìdes (Mart. et Zucc. in act. acad. monach. 9. ex Spreng. syst. append. 186.) branches tomentose; leaflets ovate, tapering to both ends, hoary-villous; peduncles many-flowered, exceeding the leaves in length; styles longer than the stamens. ♄. S. Native of Brazil. Flowers yellow.

Cytisus-like Wood-sorrel. Shrub 1 to 2 feet.

14 O. densifòlia (Mart. l. c.) stem twiggy, densely clothed with leaves; leaflets obcordately 2-lobed, hairy; peduncles elongated, usually 8-flowered; styles exceeding the stamens. ♄. S. Native of Brazil. Flowers yellow.

Dense-leaved Wood-sorrel. Shrub 1 foot.

15 O. rhombifòlia (Jacq. ox. no. 2. t. 2.) stem erect, branched, leafy; peduncles umbelliferous, 3-flowered, length of leaves; leaflets pubescent, ovate-rhomboid, sessile; styles longer than the stamens. ♄. S. Native of Caraccas. Flowers yellow. Inner filaments hispid.

Rhomb-leaved Wood-sorrel. Shrub 1½ foot.

16 O. rho´mbeo-ova`ta (St. Hil. fl. bras. 1. p. 108.) stem suffruticose, nearly simple, leafy; leaves spreading, trifoliate; leaflets large, stalked, rhomb-ovate, acuminated, ciliated, intermediate one much larger, and on a longer petiole; peduncles shortly 2-cleft at the apex, many-flowered; stamens all longer than the pistils; cells of ovary 1-seeded. ♄. S. Native of Brazil, in the provinces of Minas Geraes and Rio Janeiro. Petals yellow, emarginate. Stigmas capitate.

Rhomb-ovate-leafletted Wood-sorrel. Fl. Oct. Shrub 1 to 2 ft.

17 O. rosella`ta (St. Hil. fl. bras. 1. p. 109. t. 22.) nearly stemless, suffruticose; leaves rosellate, trifoliate; leaflets unequal, intermediate one ovate, acutish, stalked, lateral ones sessile, smaller, ovate, obtuse at the apex, very blunt and oblique at the base; peduncles filiform, 2-cleft, many-flowered; calyx hispid; stamens all shorter than the pistil; cells of ovary 5-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. O. puberula, Mart. Petals yellow. Stigmas capitate.

Rosellate-leaved Wood-sorrel. Fl. June. Shrub ¼ foot.

18 O. insi´pida (St. Hil. fl. bras. 1. p. 109.) stem shrubby, simple, pubescent, leafy at the apex; leaves trifoliate; leaflets unequally stalked, lanceolate-oblong, acuminated, rather narrow, pubescent beneath; peduncles axillary, 2-cleft, many-flowered; cells of ovary 1-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals yellow. Stigmas capitate, 2-lobed.

Insipid Wood-sorrel. Fl. Oct. Shrub 1 foot.

19 O. frute´scens (Ruiz et Pav. mss. in herb. Lamb.) leaflets 3, middle leaflet on a long footstalk, ovate, tapering to the apex, all hairy beneath; peduncles many-flowered, about the

length of the common petiole, and are, as well as the stem and branches, hairy. ♄. S. Native of Peru. Flowers yellow.

Frutescent Wood-sorrel. Shrub 1 to 2 feet.

20 O. SPIRA'LIS (Ruiz et Pav. mss. in herb. Lamb.) stem hairy; leaflets 3, all sessile, wedge-shaped, præmorse; peduncles very long, hairy; umbels bifid; flowers secund; capsule many-seeded; stigmas capitate. ♄. S. Native of Peru.

Spiral Wood-sorrel. Shrub 1 foot.

21 O. CAJANIFÒLIA (St. Hil. fl. bras. 1. p. 110.) pubescent; stem shrubby, leafy; leaflets unequally stalked, ovate-lanceolate, acuminated, acute, pubescent above, villous beneath; peduncles longer than the petioles, bifid; flowers racemose; stamens all longer than the pistils; cells of capsule 1-2-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro. Petals rose-coloured, yellow at the base. Stigmas capitate, 2-parted.

Pigeon-pea-leaved Wood-sorrel. Shrub 1 to 2 feet.

22 O. SE'PIUM (St. Hil. fl. bras. 1. p. 111.) stem suffruticose, leafy; leaves solitary, and appearing in whorls; leaflets unequally stalked, ovate, bluntish, smooth; petioles rather pilose; peduncles bifid; flowers racemose; calyxes obtuse, quite smooth; stamens all longer than the pistils; ovary 15-seeded. ♄. S. Native of Brazil in hedges near Rio Janeiro. Petals yellow. Stigmas capitate.

Hedge Wood-sorrel. Shrub 2 feet.

23 O. UMBRATI'COLA (St. Hil. fl. bras. 1. p. 111.) stem suffruticose, leafy, pubescent; leaflets unequally stalked, rhomb-ovate, obtuse, emarginate, acute at the base, with the margins and middle nerve hardly puberulous, soft; peduncles shorter than the leaves, 2-cleft, umbelliferous, pubescent; petals emarginate; cells of ovary 1-seeded. ♄. S. Native of Brazil in the provinces of Minas Geraes and Rio Janeiro. Petals yellow or whitish. Stigmas capitate. Like *O. Plumièri.*

Shaded Wood-sorrel. Fl. Feb. Shrub 1 to 2 feet.

24 O. MELILOTOI'DES (St. Hil. fl. bras. 1. p. 112.) stem suffruticose, erect, rather pilose; leaflets unequally stalked, ovate, obtuse, pilose on both surfaces; peduncles bifid, much longer than the leaves; flowers racemose; stamens all longer than the pistils; cells of ovary 2-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. Petals yellow. Stigmas capitate.

Melilot-like Wood-sorrel. Shrub 1 foot.

25 O. EUPHORBIOÌDES (St. Hil. fl. bras. 1. p. 113.) stem suffruticose, pubescent, clammy; leaflets unequally stalked, smooth, obtuse, usually retuse, lower ones ovate, the rest linear; peduncles bifid, 7-flowered; styles intermediate; cells of ovary 3-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. Petals orange-yellow. Stigmas capitate, 2-lobed.

Euphorbia-like Wood-sorrel. Shrub 1 foot.

26 O. NIGRE'SCENS (St. Hil. fl. bras. 1. p. 113.) stem suffruticose, leafy, flattened at the apex, rather pilose; leaflets unequally stalked, very smooth, lower ones ovate or ovate-oblong, upper ones oblong, uppermost ones usually linear; petioles pubescent above; peduncles bifid; flowers racemose; cells of ovary 3-seeded. ♄. S. Native of Brazil in that part of the province of Minas Geraes called Minas Novas. Roots black, horizontal. Margins of leaflets usually blackish. Petals orange-yellow. Stigmas capitate. Styles intermediate.

Var. β, linearifòlia (St. Hil. l. c.) stem 4 inches high; leaflets all linear, narrow, channelled, with the middle nerve usually pilose.

Blackish-leaved Wood-sorrel. Fl. May, Sept. Shrub ½ to 1 foot.

27 O. SAXA'TILIS (St. Hil. fl. bras. 1. p. 114.) stem shrubby, leafy; leaves in whorls, trifoliate; leaflets unequally stalked, small, obovately-orbicular, very obtuse; peduncles nearly equal in length with the leaves, shortly bifid, 5-flowered; stamens all longer than the pistils; cells of ovary 1-seeded. ♄. S. Native of Brazil in the province of Rio Janeiro, on the banks of the river Parahyba among rocks, not far from Villa Uba. Petals yellow. Stigmas capitate.

Rock Wood-sorrel. Fl. Feb. Oct. Shrub 1 to 2 feet.

28 O. DI'STANS (St. Hil. fl. bras. 1. p. 115.) stems suffruticose, ascending, leafy; leaves in fascicled-whorls at intervals; leaflets unequally stalked, obovate, obtuse, somewhat emarginate, villous, ciliated; peduncles umbelliferous; larger stamens a little longer than the pistils; cells of ovary 3-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. Petals yellow. Stigmas hardly capitate, bifid.

Distant-leaved Wood-sorrel. Fl. July. Shrub ascending.

29 O. CORDA'TA (St. Hil. pl. usu. bras. t. 45. fl. bras. 1. p. 115.) stem suffruticose, leafy; leaflets cordate, with puberulous margins, lateral ones sessile, intermediate one stalked; peduncles axillary, flattened, pubescent, subbifid, umbelliferous; cells of ovary 5-seeded. ♄. S. Native of Brazil in the province of Goyaz. Petals yellow. Styles intermediate.

Cordate-leafletted Wood-sorrel. Fl. June. Shrub 1 foot.

30 O. FU'LVA (St. Hil. pl. usu. bras. t. 44. fl. bras. 1. p. 115.) stem suffruticose, leafy, very hairy; leaflets obovately-orbicular, unequally stalked, very obtuse, villous, ciliated, lateral ones sessile, intermediate one stalked; peduncles subbifid, umbelliferous; umbels involucrated; stamens all longer than the pistils; cells of ovary 2-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. Petals yellow.

Fulvous-flowered wood-sorrel. Fl. year. Shrub 1 foot.

31 O. CAMPE'STRIS (St. Hil. fl. bras. 1. p. 116.) stem suffruticose, nearly simple; leaves scattered, small, nearly erect, hairy; leaflets 3, obcordate, intermediate one stalked, lateral ones sessile; peduncles axillary, longer than the leaves, usually exceeding the stems, bifid, umbelliferous; petals obcordate; stamens all longer than the pistils; cells of ovary 1-seeded. ♄. S. Native of Brazil in the province of Minas Geraes. Petals golden-yellow. Stigmas capitate.

Var. β, violàcea (St. Hil. l. c.) leaves violaceous and less hairy.

Field Wood-sorrel. Fl. May, Oct. Shrub ½ foot.

32 O. STENOPHY'LLA (Zucc. in act. acad. monach. 9. ex Spreng. syst. append. p. 186.) stem simple, suffruticose; leaflets linear, acutish, hairy; peduncles terminal, solitary, elongated, many-flowered; styles longer than the stamens. ♄. S. Native of Brazil. O. lineàris, Zucc. in act. acad. monach. vol. 9.

Narrow-leafletted Wood-sorrel. Shrub 1 foot.

§ 2. *Subaphýllæ. Petioles dilated, flat, but nearly leafless.*

33 O. LEPTÓPODES; petioles dilated, linear, sometimes terminated by a small leaflet; peduncles long; umbels bifid. ♄. S. Native of Peru. (v. s. in herb. Lamb.)

Narrow-petioled Wood-sorrel. Shrub ½ foot.

34 O. FRUTICÒSA (Radi. mem. ital. vol. 18. p. 401.) stem suffruticose, branched; petioles dilated, flat, lanceolate-linear, acute at both ends, nearly leafless; peduncles axillary, very short, bifid; pedicels subfasciculate; stamens all longer than the pistils; cells of ovary 1-seeded. ♄. S. Native of Brazil in woods near Rio Janeiro. Petals yellow. Stigmas capitate.

Shrubby Wood-sorrel. Shrub 1 to 2 feet.

35 O. SALICIFÓRMIS (Mik. ex Spreng. syst. append. 184.) stem much branched; branches twiggy; petioles leafy, scattered; peduncles elongated, bifid, racemose; styles very short. ♄. S. Native of Brazil. Flowers yellow.

Willow-formed Wood-sorrel. Shrub ½ foot.

36 O. BUPLEURIFÒLIA (St. Hil. fl. bras. 1. p. 117.) stem suffruticose, simple, densely leafy at the apex; petioles usually leafless, dilated, flat, oblong-lanceolate, acute, tapering at the base; peduncles axillary, flattened, bifid; stamens smooth, much

longer than the pistils; styles hispid; cells of ovary 1-seeded. ♄. S. Native of Brazil, not far from Rio Janeiro, in woods at a place called Mato. Petals yellow. Stigmas capitate.

Bupleurum-leaved Wood-sorrel. Shrub ½ foot.

§ 3. *Corniculàtæ* (from *corniculàtus*, horned; shape of pods). *D. C. prod.* 1. *p.* 691. *Stems not bulbous at base, herbaceous, rarely suffruticose, leafy. Peduncles 2 or many-flowered, rarely 1-flowered. Leaves trifoliate; leaflets sessile or subsessile, usually obcordate.*

* *Stems erect.*

37 O. PEDUNCULA'RIS (H. B. et Kunth, nov. gen. 5. p. 239.) stem simple, fleshy, leafy; peduncles very long, trifid at apex, many-flowered; leaflets roundish, or ovate-elliptical, pubescent beneath; styles intermediate. ♃. S. Native of South America on the mountains about Quito, in temperate places near Mira, and in the valley of the river Chambo. Peduncles 7 or 8 inches long. Flowers orange or copper-coloured. Roots fibrous.

Long-peduncled Wood-sorrel. Pl. ¾ foot.

38 O. LA'XA (Hook. bot. Beech. voy. p. 13.) stem simple, leafy, short; leaflets broad, obcordate, ciliated, with a few hairs above, but densely clothed beneath; petioles pilose; peduncles pilose, twice the length of the petioles, bearing a loose panicle of flowers at the apex; sepals pilose, very narrow-lanceolate. ♃. F. Native of Chili at Conception.

Loose-panicled Wood-sorrel. Pl. ¼ foot.

39 O. PUBE'SCENS (H. B. et Kunth, nov. gen. amer. 5. p. 239.) stem erect, branched at the base, clothed with soft pubescence; peduncles bifid at the apex, many-flowered, longer than the petioles; leaflets roundish-obovate, emarginate, pubescent on both surfaces, as well as the calyxes and petioles; styles longer, or equal in length to the stamens. ♃. G. Native of Peru on the mountains. Root fibrous. Flowers yellow? Peduncles 3 or 4 inches long.

Pubescent Wood-sorrel. Pl. ½ foot.

40 O. LEPTOPHY'LLA; shrubby, erect, hairy; lateral leaflets distant, sessile, lanceolate, and emarginate, middle one lanceolate, on a long petiole; peduncles axillary, 1-2-flowered, about the length of the leaves. ♄. F. Native of Chili. O. radìcans, Ruiz et Pav. mss. in herb. Lamb. Root creeping.

Slender-leaved Wood-sorrel. Pl. ½ foot.

41 O. CRENA'TA (Jacq. ox. no. 7.) stem erect, leafy; peduncles umbelliferous, 5-6-flowered, longer than the leaves; leaflets obovate; petals crenated. ☉. F. Native of Peru.—Feuill. per. 3. p. 49. t. 24. Flowers yellow, striped with purple. This plant is cultivated about Lima in gardens, and is used as sorrel. Root spindle-shaped.

Crenated-petalled Wood-sorrel. Pl. 2 feet.

42 O. PERE'NNANS (Haw. misc. 181.) stem erect, leafy, flexuous; peduncles 2-3-flowered, rather longer than the petioles; leaflets obcordately 2-lobed, ciliated; styles a little longer than the inner stamens. ♃. G. Native of New Holland. Flowers fulvous outside, yellow inside.

Perennial Wood-sorrel. Fl. May, Sept. Clt.? Pl. 2 feet.

43 O. VERTICILLA'TA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 691.) stem erect, simple, smooth; leaves 3 or 4 in a whorl; leaflets obcordate; peduncles 2-3-flowered, length of petioles. ♃. G. Native of Mexico? Cultivated in the gardens of St. Angelo. Flowers yellow.

Whorled-leaved Wood-sorrel. Pl. 1 foot.

44 O. DILLE'NII (Jacq. ox. no. 8.) stem erect, leafy, rather hairy; peduncles umbelliferous, usually twin, 5-6-flowered, longer than the leaves; leaflets obcordate; petals emarginate; styles longer than the stamens. ☉. H. Native of Carolina. O. flòrida, Sal. prod. 322.—Dill. elth. 2. t. 221. Flowers yellow, a little larger than those of *O. stricta*, with which it is generally confounded.

Dillenius's Wood-sorrel. Fl. May, Aug. Clt. 1798. Pl. ½ ft.

45 O. STRÍCTA (Lin. spec. 624.) stem erect, leafy; peduncles umbelliferous, 2-6-flowered, rather shorter than the leaves; leaflets obcordate; petals entire; styles about the length of the inner stamens. ♃. H. Native of North America in cultivated grounds, from Pennsylvania to Carolina. Jacq. oxal. no. 9. t. 4. O. ambígua, Sal. in Lin. trans. 2. p. 242. t. 23. f. 4. Root creeping. Flowers yellow, about the size of those of *O. corniculàta*. Browne says this plant is also a native of Jamaica; he recommends it as a pleasant cooler and diuretic, and says that it was formerly administered in inflammatory cases, but has been little used since the more agreeable acid fruit-trees have been so much cultivated in the West Indies. Plant hairy.

Strict Wood-sorrel. Fl. June, Oct. Clt. 1658. Pl. ½ foot.

46 O. TORTUÒSA (Lindl. bot. reg. 1249.) stem fleshy, scaly; leaflets linear, obtuse, pilose beneath; flowers umbellate; pedicels and petioles twisted, fleshy. ♃. G. Native of Chili. Petals yellow, usually bordered with red. Styles and stamens equal. Ovary many-seeded.

Twisted Wood-sorrel. Fl. June. Clt. 1826. Pl. ½ foot.

47 O. HAENKEA'NA (Spreng. syst. app. p. 186.) stem erect, leafy; leaflets obovate, emarginate, smooth; peduncles bifid, many-flowered, racemose, longer than the leaves; styles shorter than the stamens. ♃? G. Native of Peru. O. melilotoìdes, Zuccar. in act. monac. ex Spreng. Flowers yellow? This plant probably belongs to section 1. *Hedysaroìdeæ*.

Haenk's Wood-sorrel. Pl. 1½ foot.

48 O. ARRACA'CHA; leaves trifoliate; leaflets præmose, on long footstalks; stipulas large; peduncles few-flowered. ♄. G. Native of Chili. Petals yellow, small.

Arracacha Wood-sorrel. Fl. Sept. Shrub 2 to 3 feet.

49 O. CONORHÌZA (Jacq. ox. no. 6.) stem erect, leafy; peduncles longer than the leaves, 2-flowered; leaflets obcordate; roots turbinate. ♃. S. Native of Paraguay in South America in the vast plains to the northward of the River Plate.—Feuill. per. 2. p. 723. t. 24. Flowers large, yellow.

Cone-rooted Wood-sorrel. Pl. ¾ foot.

50 O. RÒSEA (Jacq. ox. no. 5.) stem erect, fleshy, leafy; peduncles bifid, corymbosely-racemose at the apex, 4-times longer than the leaves; leaflets obcordate. ♃. F. Native of Chili in moist places about Conception. Feuill. obs. 2. p. 23. O. racemòsa, Savig. in Lam. dict. 4. p. 684. O. floribúnda, Lindl. bot. reg. 1123. but not of Lehm. Petals rose-coloured, crenated at the apex. Styles longer than the stamens.

Var. β; flowers smaller; petals hardly lined, red, entire at the apex. Sims, bot. mag. 2415.

Rose-coloured-flowered Wood-sorrel. Fl. Mar. April. Clt. 1823. Pl. ½ to 1 foot.

51 O. CÆSPITÒSA (St. Hil. fl. bras. 1. p. 122.) stem suffruticose, very short, leafy; leaves tufted; leaflets unequally and shortly stalked, obcordate, ciliated; petioles rather dilated at the base, pilose; peduncles pubescent, 1-flowered, longer than the leaves; stamens all shorter than the styles, which are very long, joined together beyond the middle; cells of ovary 4-seeded. ♄. S. Native of Brazil in the southern part of the province of St. Paul. Stems erect or ascending, hardly 2 inches high. Petals yellow, entire, or emarginate. Stigmas small, capitate.

Tufted Wood-sorrel. Fl. Jan. Shrub 3 inches.

52 O. HÍSPIDA (Zucc. et Mart. act. mon. 9. ex Spreng. syst. append. p. 186.) stem erect, very short; leaflets obovate, emarginate, hispid, as well as the stem; peduncles equal in length to the leaves, usually 3-flowered; styles shorter than the stamens. ♃? S. Native of Brazil. Flowers yellow.

Hispid Wood-sorrel. Pl. $\frac{1}{4}$ foot.

53 O. CINERA'CEA (St. Hil. fl. bras. 1. p. 123.) stem suffruticose, very short, leafy; leaves much crowded, cinereous; leaflets nearly sessile, small, obcordate, pilose on both surfaces; petioles dilated at the base, villous as well as the peduncles, which are 1-flowered, and longer than the leaves; petals emarginate; stamens all shorter than the pistils; styles very long, connected at the base: cells of ovary 5-seeded. ♄. S. Native of Brazil in the province of Cisplatine. Stem scaly at the base. Petals yellow. Stigmas oblong, obtuse.

Grey Wood-sorrel. Fl. Jan. Shrub 2 inches.

54 O. SQUAMA'TA (Zucc. in act. monach. ex Spreng. syst. append. p. 186.) stem erect, leafy, dwarf, scaly; leaflets obcordately 2-lobed, smooth; peduncles axillary, dichotomous, many-flowered. ♃. F. Native of Chili. Flowers yellow.

Scaly Wood-sorrel. Pl. $\frac{1}{4}$ foot.

* * *Stems ascending, prostrate, or diffuse.*

55 O. CRASSICAU'LIS (Zucc. in act. monach. ex Spreng. syst. append. p. 186.) stem ascending, fleshy; leaflets obcordate, pubescent beneath; stipulas lanceolate, acute, ciliated; peduncles elongated, umbelliferous, few-flowered. ♃. G. Native of Peru. Flowers yellow.

Thick-stemmed Wood-sorrel. Pl. $\frac{1}{2}$ foot.

56 O. LATERIFLÒRA (Jacq. hort. schoenbr. 2. p. 41. t. 204.) stem ascending, a little branched, naked at the base; peduncles lateral, umbellate at top; leaflets cuneated, emarginately 2-lobed; styles shorter than the outer stamens. ♃. G. Native of the Cape of Good Hope. Flowers purple; filaments hispid.

Lateral-flowered Wood-sorrel. Fl. Mar. April. Clt. 1824. Pl. $\frac{1}{2}$ foot.

57 O. REFRA'CTA (St. Hil. fl. bras. 1. p. 119.) stem diffuse, pilose; leaflets hairy, obcordate, sessile, ciliated, acute at the base; peduncles hairy, exceeding the length of the leaves, 2-3-cleft, umbelliferous; fruit-bearing pedicels refracted; stamens all longer than the pistils; cells of ovary 4-seeded. ♃. S. Native of Brazil on the mountains called Serra-Aspro near the town of Rocha. Petals yellow. Stigmas jagged.

Var. β, *débilis* (St. Hil. l. c.) stems weaker; hairs slenderer and less numerous.

Refracted-pedicelled Wood-sorrel. Pl. diffuse.

* * * *Stems decumbent.*

58 O. LYÒNI (Pursh, fl. sept. amer. 1. p. 323.) the whole plant clothed with silky villi; stem branched, decumbent; peduncles 2-3-flowered, longer than the petioles; leaflets obcordately 2-lobed; petals wedge-shaped; capsules downy, twice the length of the lanceolate calyx. ♃. H. Native of North America on Cumberland Island, Georgia. Flowers yellow.

Lyon's Wood-sorrel. Fl. Ju. Jul. Clt. 1816. Pl. decumb.

59 O. MICROPHY'LLA (Poir. suppl. 4. p. 248.) smoothish; stems procumbent; peduncles 2-flowered, longer than the petioles; leaflets 2-lobed, obcordate; petals wedge-shaped; siliques puberulous; styles length of inner stamens. ⊙. H. Native of New Holland. O. rùbens, Haw. misc. p. 183. Flowers small, yellow.

Small-leaved Wood-sorrel. Clt.? Pl. procumbent.

60 O. MYRIOPHY'LLA (St. Hil. fl. bras. 1. p. 121.) stem suffruticose, prostrate, leafy; leaves small, in fascicles; leaflets sessile, deeply obcordate, villous; peduncles solitary, 1-flowered, and are as well as the petioles covered with soft hairs; larger stamens villous, all shorter than the styles; cells of ovary 1-seeded. ♄. S. Native of Brazil in the province of St. Paul. Petals denticulated, yellow. Stigmas tuberculately capitate.

Thousand-leaved Wood-sorrel. Fl. Jan. Feb. Sh. prostrate.

61 O. STERNBE'RGII (Zucc. in act. monach. 9. ex Spreng. syst. append. p. 185.) stem short, erect, hairy; leaflets obcordately 2-lobed, hairy; peduncles exceeding the length of the leaves; styles very long. ♃. G. Native of Brazil.

Sternberg's Wood-sorrel. Pl. $\frac{1}{2}$ foot.

62 O. CONFERTÍSSIMA (St. Hil. fl. bras. 1. p. 122. t. 24.) stem suffruticose, decumbent; branches erect, leafy; leaves small, very much crowded; leaflets sessile, obovately elliptical, hardly emarginate, pilose on both surfaces, with very villous margins; peduncles axillary, 1-flowered; flowers usually nodding; stamens shorter than the pistils; cells of ovary 5-seeded. ♄. S. Native of Brazil in the province of Minas Geraes, on the mountains called Serra do Propagaio. Petals entire, yellow. Stigmas bifid, pencilled. Stems sometimes rooting under-ground.

Very-crowded Wood-sorrel. Fl. Mar. Shrub decumbent.

63 O. LOTOÌDES (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stems procumbent; branches clothed with long hairs; peduncles longer than the petioles, 3-4-flowered; leaflets roundish-obovate, emarginate, beset with close-pressed hairs, margins villous, rather glaucous beneath; petioles pilose; calyxes pubescent; styles intermediate. ♃. G. Native of South America on Mount Quindiu. Flowers yellow?

Lotus-like Wood-sorrel. Pl. procumbent.

64 O. PALUDÒSA (St. Hil. fl. bras. 1. p. 121.) stem suffruticose, prostrate, angularly compressed, very smooth; leaves ternately-verticillate and solitary; leaflets sessile, smoothish, obcordate; petioles stipulaceously-dilated at the base; peduncles axillary, 1-flowered; styles intermediate; cells of ovary 3-seeded. ♄. S. Native of Brazil in the province of Rio Grande do Sul in marshes. Petals entire, yellow, marked each with 6 dark-purple lines at the base. Styles hairy. Stigmas capitate.

Marsh Wood-sorrel. Fl. Jan. Shrub prostrate.

65 O. MEDICAGÍNEA (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stems branched, procumbent, smooth; peduncles very long, bifid at apex, 4-12-flowered; leaflets obovate, emarginate, ciliated, smooth above, pubescent beneath; petioles smoothish; calyx smooth; styles intermediate. ♃. S. Native of New Granada. Flowers white.

Medik-like Wood-sorrel. Pl. procumbent.

66 O. AMA'RA (St. Hil. fl. bras. 1. p. 119.) hairy; stem suffruticose, prostrate; leaflets sessile, obcordate, villous, hispidly ciliated; peduncles axillary, 1-2-flowered, longer than the leaves; flowers large; stamens all longer than the pistils; cells of ovary 1-seeded. ♄. S. Native of Brazil in the province of Rio Grande do Sul. Petals yellow, denticulated. Stigmas small, capitate.

Bitter Wood-sorrel. Fl. spring. Shrub prostrate.

67 O. LUPULÍNA (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stems filiform, procumbent, a little branched, smoothish; peduncles 1-3-flowered; leaflets roundish-obovate, emarginately 2-lobed, and are as well as the calyxes smooth; styles very long. ♃. S. Native of New Granada in cold places near Almaguer. Flowers yellow.

Wolf Wood-sorrel. Pl. procumbent.

* * * * *Stems creeping or reptant.*

68 O. VILLÒSA (Bieb. fl. taur. 1. p. 355.) plant villous; stem creeping, branched; peduncles 2-flowered, longer than the petioles; leaflets obcordate; styles length of inner stamens. ⊙. H. Native of Iberia. This species is very like *O. corniculàta*, and probably only a variety. Flowers yellow.

Villous Wood-sorrel. Pl. creeping.

69 O. CORNICULA'TA (Lin. spec. 624.) stem decumbent, branched, rooting; peduncles somewhat umbellate, shorter than the petioles; leaflets obcordate; petals emarginate; styles length of inner stamens. ♃. H. Native of Europe, particularly in Spain, Sicily, Italy, Greece, Austria, Switzerland, and England

in Devonshire, as well as of Japan, Teneriffe, Bourbon, Caribbee Islands, Mexico, and of North America from Canada to Carolina, in cultivated ground. Smith, engl. bot. t. 1726. Jacq. ox. no. 10. t. 5. O. pusílla, Sal. in Lin. trans. 2. p. 243. t. 23. f. 5. Stipulas united to the base of the petioles. Flowers yellow, those of the North American plant are larger than the European.

Horned Wood-sorrel. Fl. May, Oct. Brit. Pl. decumbent.

70 O. móllis (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stems branched, creeping, and are as well as the petioles clothed with soft villi; peduncles bifid at apex, few-flowered, longer than the petioles; leaflets obovate, emarginate, pubescent, hoary beneath; calyxes puberulous; styles intermediate. ♃. S. Native of South America on the Andes about Popayan near Almaguer. Flowers yellow.

Soft Wood-sorrel. Pl. creeping.

71 O. a'lbicans (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stems tufted, branched, creeping, puberulous; peduncles 1-2-flowered, equal in length with the petioles; leaflets obcordately 2-lobed, a little glaucous, edged with violet, puberulous beneath as well as the calyxes and petioles; styles very long. ♃. G. Native of Mexico near Moran. O. cinèrea, Zucc. Flowers yellow.

Var. β, sericea (D. C. prod. 1. p. 693.) whole plant silky and hoary. ♃. G. Native of Quito near Llactagunga.

Whitish Wood-sorrel. Pl. creeping.

72 O. pilosiu'scula (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stems branched, creeping at the base, and are as well as petioles pilose; peduncles pubescent, 1-flowered; leaflets obcordate, ciliated, clothed with close-pressed hairs beneath; calyxes puberulous. ♃. S. Native of New Spain near the town of Caraccas. Flowers yellow.

Pilose Wood-sorrel. Pl. creeping.

73 O. filifórmis (H. B. et Kunth, nov. gen. amer. 5. p. 245. t. 469.) stems filiform, creeping, branched, smooth; peduncles 1-flowered, longer than the petioles; leaflets roundish-obovate, emarginately 2-lobed, with pilose edges, puberulous beneath; petioles pubescent; calyx ciliated; styles very long. ♃. S. Native of New Granada on the Andes near Guada. O. nematòdes, Spreng. syst. 2. p. 429. Flowers yellow.

Filiform Wood-sorrel. Pl. creeping.

74 O. parvifòlia (D. C. prod. 1. p. 693.) stems branched, creeping, smooth; branchlets leafy; peduncles 1-flowered, leaflets roundish-obovate, emarginately 2-lobed, ciliated, covered with close-pressed hairs on both surfaces; petioles and calyxes pubescent; styles very long. ♃. S. Native of South America in the kingdom of Quito and at Conception in Chili. O. microphýlla, H. B. et Kunth, nov. gen. amer. 5. p. 245. but not of Poir. This species is very like *O. filifórmis*. Flowers yellow.

Small-leaved Wood-sorrel. Pl. creeping.

75 O. re'pens (Thunb. ox. no. 11. t. 1. f. 5.) stem leafy, branched, prostrate, rooting; peduncles usually 2-flowered, length of petioles, pilose; leaflets obcordate, nearly sessile, ciliated; styles intermediate; stamens smooth; capsule pubescent. ♃. S. Native of Ceylon, Madagascar, Brazil, and the Cape of Good Hope. Jacq. ox. no. 11. t. 78. f. 1. O. stricta, Houtt. pfl. syst. 6. t. 51. f. 2. Flowers yellow.

Repent Wood-sorrel. Fl. Mar. April. Clt. 1793. Pl. creeping.

76 O. se'rpens (St. Hil. fl. bras. 1. p. 120.) stem filiform, creeping, leafy; leaflets sessile, obcordate, hardly emarginate, rather villous, ciliated; peduncles 1-flowered, longer than the leaves, smoothish; styles shorter than the stamens; cells of ovary 5-seeded. ♃. S. Native of Brazil in the province of St. Paul. Petals entire, deep yellow. Stigmas many-parted. Capsule globose, rather villous.

Creeping Wood-sorrel. Pl. creeping.

* * * * * *Stem climbing.*

77 O. sca'ndens (H. B. et Kunth, nov. gen. amer. 5. p. 241.) stem branched, climbing; peduncles elongated, dichotomously 4-cleft, many-flowered; leaflets obovate, emarginate, smooth above, hairy-pubescent beneath; petioles villous; calyxes smooth; styles very long. ♃. ◡. S. Native of South America on Mount Quindiu. Flowers yellow, larger than those of *O. acetosélla*.

Climbing Wood-sorrel. Pl. climbing.

§ 4. *Sessilifòlia* (from *sessilis*, sessile, and *folium*, a leaf; leaves sessile). *D. C. prod.* 1. *p.* 693. *Stems bulbous at the base, elongated, with scattered leaves, villous. Leaves sessile, trifoliate, villous, never bearing glands. Peduncles axillary, 1-flowered.*

78 O. macro'stylis (Jacq. ox. no. 22. t. 9.) stem erect, leafy, branched; peduncles much longer than the leaves; bracteas approaching the calyx; leaflets linear-cuneated, emarginate; styles longer than the inner stamens. ♃. G. Native of the Cape of Good Hope. Flowers with a long tube, purplish, with dirty-yellow claws, and yellowish on the under side. Bulb the size of a hazel-nut.

Long-styled Wood-sorrel. Fl. Oct. Nov. Clt. 1793. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

79 O. tubiflòra (Jacq. ox. no. 23. t. 10.) stem erect, rather branched; peduncles 4-times longer than the leaves; bracteoles pressed to the calyx; leaflets linear-wedge-shaped, blunt; styles shorter than the outer stamens. ♃. G. Native of the Cape of Good Hope. Flowers with a long tube, purplish, yellowish outside as well as the claws. Bulb the size of a hazel-nut, brown.

Tube-flowered Wood-sorrel. Clt. 1790. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

80 O. cane'scens (Jacq. ox. no. 24. t. 11.) stem erect, a little branched, leafy; peduncles twice as long as the leaves; bracteas approximating the calyx; leaflets wedge-shaped, somewhat emarginate; styles shorter than the outer stamens. ♃. G. Native of the Cape of Good Hope. Flowers with a long tube, pale-purplish, with yellowish claws. Bulb from the size of a pea to that of a hazel-nut.

Hoary Wood-sorrel. Fl. Jan. Sept. Clt. 1821. Pl. $\frac{1}{3}$ foot.

81 O. secu'nda (Jacq. ox. 68. t. 12.) stem declinate, branched, leafy; branches leaning to one side; leaflets linear-wedge-shaped; pedicels hardly exceeding the leaves in length; styles intermediate. ♃. G. Native of the Cape of Good Hope. Flowers with a long tube, lilac. Filaments smooth. Bulb brown, size of a hazel-nut.

Secund-branched Wood-sorrel. Fl. Oct. Nov. Clt. 1790. Pl. 1 foot long.

82 O. hi'rta (Lin. spec. 628.) stem erect, a little branched, leafy; leaflets linear-wedge-shaped, retuse; peduncles much longer than the leaves; bracteoles remote from the calyx; styles longer than the inner stamens; stamens toothless and glandless. ♃. G. Native of the Cape of Good Hope. Flowers lilac, with a yellow bottom, and a short tube. Jacq. ox. no. 26. t. 13.—Burm. afr. 70. t. 28. f. 1. Bulb brown, about the size of a hazel-nut.

Var. β, brévipes (D. C. prod. 1. p. 694.) peduncles hardly longer than the leaves.

Hairy-stemmed Wood-sorrel. Fl. Oct. Nov. Clt. 1787. Pl. $\frac{3}{4}$ foot.

83 O. hirte'lla (Jacq. ox. no. 27. t. 14.) stem erect, a little branched, leafy; leaflets linear-lanceolate, acutish; peduncles very long; bracteoles remote from the calyx; styles longer than the inner stamens; outer stamens with gibbous toothlets; hairs of stamens glandular. ♃. G. Native of the Cape of Good Hope. Flowers pale-lilac, with a yellow bottom, outside dirty-

yellow, with a short tube. O. sessilifòlia, Lin. mant. 241. O. hírta β, Willd. spec. 2. p. 705. Bulb brown, about the size of a hazel-nut.

Hirsute-stemmed Wood-sorrel. Fl. March, April. Clt. 1823. Pl. ½ to ¾ foot.

84 O. multiflòra (Jacq. ox. no. 28. t. 15.) stem erect, leafy, much branched; leaflets linear wedge-shaped, blunt; peduncles much longer than the leaves; bracteoles remote from the calyx; styles shorter than the outer stamens. 4. G. Native of the Cape of Good Hope. Jacq. icon. rar. t. 472. Corolla lilac, campanulate, yellowish outside, as well as the claws. Bulb brown, larger than a hazel-nut.

Many-flowered Wood-sorrel. Fl. Feb. March. Clt. 1789. Pl. ¼ to ½ foot.

85 O. rube'lla (Jacq. ox. no. 29. t. 16.) stem erect, leafy, branched; leaflets linear-cuneated; peduncles much longer than the leaves; bracteas rather remote from the calyx; styles intermediate. 4. G. Native of the Cape of Good Hope. Corolla purplish, campanulate, with yellowish claws. Jacq. icon. rar. t. 471. Sims, bot. mag. t. 1031.—Burm. afr. 71. t. 28. f. 2. Bulb brown, about the size of a hazel-nut.

Reddish-flowered Wood-sorrel. Fl. Sept. Nov. Clt. 1791. Pl. ½ foot.

86 O. fu'lgida (Lindl. bot. reg. 1073.) stem short, decumbent, branched; leaflets linear, sessile, acute; peduncles much higher than the leaves; bracteas approaching the calyx; styles very long. 4. G. Native of the Cape of Good Hope. Petals beautiful, purple. This plant is very like *O. rubélla*, but differs in being smooth.

Fulgid Wood-sorrel. Fl. Sept. Nov. Pl. ¼ foot.

87 O. rosa'cea (Jacq. ox. no. 30. t. 17.) stem decumbent, simple, leafy; leaflets oblong, wedge-shaped; peduncles much longer than the leaves; bracteas distant from the flower; styles intermediate. 4. G. Native of the Cape of Good Hope. Sims, bot. mag. t. 1698. Plant canescent. Corolla deep red, but pale outside, with yellowish claws. Bulb brown, smaller than a hazel-nut.

Rose-coloured-flowered Wood-sorrel. Fl. Sept. Nov. Clt. 1793. Pl. prostrate.

§ 5. *Cauliflòræ* (from *caulis*, a stem, and *flos*, a flower). *D. C. prod.* 1. *p.* 694. *Stems elongated, with scattered leaves. Leaves, only upper ones stalked, with* 3-5-*leaflets. Peduncles axillary,* 1-*flowered. The species of this section are very dissimilar in habit. Roots bulbous.*

88 O. virgi'nea (Jacq. hort. schœnbr. 3. t. 275.) stem erect, leafy, a little branched; leaves stalked; leaflets 3, lateral ones oblong, middle one obovately-cuneated; pedicels shorter than the leaves; styles intermediate; filaments toothless, hispid. 4. G. Native of the Cape of Good Hope. Flowers white.

Virgin Wood-sorrel. Fl. Nov. Dec. Clt. 1820. Pl. ½ foot.

89 O. repta'trix (Jacq. ox. no. 33. t. 20.) stem erect, short, leafy; leaves on long stalks; leaflets 3, obovate-roundish; peduncles longer than the leaves; styles very short; filaments toothed, glandular. 4. G. Native of the Cape of Good Hope. Flowers with a pale flesh-coloured border, and yellowish tube. Root creeping, emitting bulbs.

Crawling-rooted Wood-sorrel. Fl. Nov. Dec. Clt. 1795. Pl. ½ foot.

90 O. incarna'ta (Lin. spec. 622.) stem erect, branched, smooth, leafy; leaves stalked, several at remote distances, in whorls; leaflets 3, obcordate; peduncles length of leaves; styles very long; stamens toothed. 4. G. Native of the Cape of Good Hope. Jacq. hort. vind. t. 71. O'xys. Comm. hort. 1. p. 43. t. 22. Flowers pale flesh-coloured. Root of 2 or 3 fusiform legs. Stem weak, purple.

Flesh-coloured-flowered Wood-sorrel. Fl. April, June. Clt. 1739. Pl. ½ foot.

91 O. di'sticha (Jacq. ox. no. 31. t. 18.) stem branched at the base, ascending, smooth, leafy; leaves scattered, stalked; petioles with winged stipulas; leaflets 3, obcordate; peduncles longer than the leaves; styles intermediate; filaments toothed. 4. G. Native of the Cape of Good Hope. Flowers pale-yellow, but of a dusky-yellow within. Bulb brown, an inch long, tapering.

Distich-leaved Wood-sorrel. Fl. Jan. Sept. Clt. 1818. Pl. ½ foot.

92 O. venòsa (Sav. in Lam. dict. 4. p. 681.) stem erect, hairy, simple, leafy; lower leaves on short stalks, scattered, upper ones on long stalks, somewhat whorled; leaflets cuneated, emarginate, hispid beneath; stipulas awl-shaped; peduncles longer than the leaves. 4. G. Native of the Cape of Good Hope. Corolla veined, violet, with a yellow tube. Root bulbous.

Veiny-flowered Wood-sorrel. Fl. Oct. Nov. Pl. ½ foot.

93 O. ebractea'ta (Sav. in Lam. dict. 4. p. 682.) stem simple, erect, hairy, leafy at the top; leaves stalked; leaflets 3? oblong, obcordate, with the margin and rib beset with glandular hairs; peduncles without bracteas, length of petioles. 4. G. Native of the Cape of Good Hope. Flowers yellow. This is probably the same as *O. dísticha*.

Bractless Wood-sorrel. Pl. ½ foot.

94 O. heterophy'lla (D. C. prod. 1. p. 694.) villous; stem erect, branched at the base; lower leaves sessile; leaflets 3, obcordate, upper ones on long stalks, with 2-parted leaflets; peduncles longer than the petioles, with 2 bracteas in the middle; styles very short; root fibrous. 4. G. Native of the Cape of Good Hope? Flowers purple.

Variable-leaved Wood-sorrel. Pl. ½ foot.

95 O. quina'ta (Sav. in Lam. dict. 4. p. 688.) stem ascending, leafy on the upper part, on long stalks; leaflets 5, wedge-shaped, somewhat emarginate; peduncles longer than the petioles, with 2 bracteas on the middle of each. 4. G. Native of the Cape of Good Hope. Flowers purplish, with a yellow tube.

Quinate-leaved Wood-sorrel. Pl. ½ foot.

§ 6. *Caprìnæ* (from *caprinus*, of a goat; some species have bifid leaflets, which have been compared to the foot of a goat). *D. C. prod.* 1. *p.* 675. *Stemless or with a naked stipe, furnished with a few leaves at the top. Scape many-flowered, rarely* 1-2-*flowered. Leaves radical, with the number of leaflets variable, but usually* 3, *with the leaflets sessile or subsessile, obcordate or subobcordate. Cells of ovary* 4-12-*seeded. Roots bulbous or tuberous.*

* *Leaflets above three.*

96 O. decaphy'lla (H. B. et Kunth, nov. gen. amer. 5. p. 238. t. 468.) stemless; leaflets 8-10, wedge-shaped, bifid at the apex, a little ciliated, smooth; scapes 5-14-flowered, longer than the leaves; sepals blunt, with two spots at the top of each; stamens equal among themselves, but one-half longer than the styles. 4. G. Native of Mexico, near the rock called El Peñon. Flowers violaceous, about the size of those of *O. stricta*.

Ten-leafletted Wood-sorrel. Pl. ½ foot.

97 O. Hernade'sii (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 695.) stemless; leaflets 9-11, oblong, villous; scape umbelliferous, 6-flowered, longer than the leaves. 4. G. Native of Mexico.—Hern. mex. 386. f. 3. Flowers erect, pale-violet.

Hernadez's Wood-sorrel. Pl. ¼ foot.

98 O. Burma'nni (Jacq. ox. no. 20.) stem very short, leafy at the top; leaflets 5-6, lanceolate, smooth; scape umbelliferous,

7-8-flowered, longer than the leaves. ♃. G. Native of the Cape of Good Hope.—Burm. afr. t. 29. Flowers yellow.

Burmann's Wood-sorrel. Fl. Oct. Nov. Clt. 1820. Pl. ¼ ft.

99 O. TETRAPHY'LLA (Cav. icon. 3. t. 237.) stemless; leaflets 4, rarely 3, obcordate, smooth, rather glaucous beneath; peduncles umbelliferous, 3-10-flowered; styles very long. ♃. G. Native of Mexico. Corolla of a purplish-violet colour.

Four-leaved Wood-sorrel. Fl. June, July. Clt. 1823. Pl. ¼ ft.

100 O. DE'PPEI (Lodd. bot. cab. 1500. Sweet, fl. gard. n. s. 96.) stemless; leaflets 4, large, obcordate, pilose, glaucous beneath, on short petioles; petioles densely pilose; umbels many-flowered; scape and petioles loosely pilose; styles intermediate, villous; stamens unequal, alternate ones each with an appendage. ♃. F. Native of Mexico. Bulb large, scaly, like those of a *Lílium*. Petals of a coppery-red colour.

Deppe's Wood-sorrel. Fl. June, Aug. Clt. 1827. Pl. ¼ ft.

* * *Leaflets 3, obcordate or emarginate.*

101 O. SERI'CEA (Lin. fil. suppl. 245.) stemless; leaflets 3, obcordate, clothed with silky down; scape umbelliferous, longer than the leaves; flowers nodding; styles intermediate. ♃. G. Native of the Cape of Good Hope.—Jacq. ox. no. 13. t. 77. f. 1. Corolla yellow.

Silky-leaved Wood-sorrel. Fl. April, May. Clt. 1794. Pl. ¼ ft.

102 O. FLORIBU'NDA (Lehm. cat. sem. hort. hamb.) leaflets 3, roundish-obovate, deeply emarginate, hairy, leprous beneath on the margins; scape many-flowered; sepals obtuse, canescent; styles longer than the stamens, crowned by capitate stigmas. ♃. S. Native of Brazil. Root tuberous. Leaves radical. Flowers reddish, and painted with darker veins. Filaments and styles bearded. Lehm. in act. bonn. 14. p. 813.

Bundle-flowered Wood-sorrel. Clt. 1827. Pl. ½ foot.

103 O. BIPUNCTA'TA (Graham mss. in Hook. bot. mag. 2781.) stemless; leaflets 3, sessile, broadly obcordate, pubescent beneath, smooth above; scape compressed, paniculately many-flowered, and are as well as the petioles pilose; sepals bluntish, bimaculate at the apex; styles intermediate; stigmas capitate; petals truncate, unequally crenate. ♃. S. Native of Brazil, about Rio Janeiro. Flowers lilac, with deeper veins.

Two-spotted-sepalled Wood-sorrel. Fl. April, May. Clt. 1826. Pl. ½ foot.

104 O. ARTICULA'TA (Sav. in Lam. dict. 4. p. 686.) stemless; leaflets 3, sessile, obcordate, somewhat truncate at the sides, and angularly-rounded at the apex, ciliated; petioles pilose; scape villous, umbelliferous, 5-6-flowered; involucre very short, few-leaved; calyxes bimaculate at the apex; cells of ovary 7-seeded; styles intermediate. ♃. S. Native of Monte Video, and of Brazil in the provinces of Rio Grande do Sul and St. Catharine. Root tuberous, granular. Petals crenulated, purple.

Jointed-rooted Wood-sorrel. Pl. ¼ foot.

105 O. MEGALORHÌZA (Jacq. ox. no. 12.) stemless; leaflets 3, obcordate, violaceous on the under surface; scape umbelliferous, shorter than the leaves; root thick, many edged. ♃. G. Native of Peru. O. bícolor, Sav. in Lam. dict. 4. p. 687.—Feuille, per. 2. p. 734. t. 25. Flowers yellow, with 3 red lines at the base of each petal. Root 8 inches long, divided below into branching legs full of forks.

Large-rooted Wood-sorrel. Pl. ¼ foot.

106 O. AUTUMNA'LIS (St. Hil. fl. bras. 1. p. 128.) stemless, dwarf; bulb scaly, very woolly; leaves small; leaflets 3, sessile, obovately-cuneated, smooth; scape 1-flowered, longer than the leaves, smooth; sepals linear, bluntish; stamens shorter than the styles, very smooth; cells of ovary 9-seeded. ♃. S. Native of Brazil in the province of Rio Grande do Sul, upon the confines of the province of St. Catharine. Petals entire, yellow. Stigmas capitate.

Autumnal Wood-sorrel. Fl. autumn. Pl. ½ foot.

107 O. NUDIFLÒRA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 695.) stemless; scapes and petioles pilose; leaflets 3, obcordate; flowers 5-6 umbellate, destitute of an involucre. ♃. G. Native of Mexico in fields. Flowers erect, violaceous, but when in bud nodding.

Naked-flowered Wood-sorrel. Pl. ¼ foot.

108 O. VIOLA'CEA (Lin. spec. 621.) stemless; leaflets 3, obcordate, smooth, red underneath; scape umbelliferous, 3-9-flowered; flowers erectish, with a short involucre; styles shorter than the outer stamens; sepals callose at the apex. ♃. H. Native of North America from New England to Carolina, in shady woods on the sides of hills in fertile soil. Jacq. hort. vind. t. 180. ox. no. 14. t. 80. f. 2. Flowers pink-coloured. Stamens hairy. Bulb fusiform, black.

Violet-coloured-flowered Wood-sorrel. Fl. May, Sept. Clt. 1772. Pl. ¼ foot.

109 O. BI'LOBA; stemless; leaflets 3, 2-lobed; lobes spreading; scape umbellate; flowers nodding. ♃. G. Native of Peru. Petals apparently purplish. Root bulbous.

Two-lobed-leafletted Wood-sorrel. Pl. ¼ foot.

110 O. E'LEGANS (H. B. et Kunth, nov. gen. amer. 5. p. 234. t. 466.) stemless; leaflets 3, broad, roundish-obovate, emarginate, violet-coloured on the under surface, and are, as well as the petioles, smooth; scapes very long, 2-6-flowered; sepals acuminated, with two spots at the top of each; styles very long. ♃. G. Native of Peru near Loxa. Flowers large, of a violet colour. Bulb solitary.

Elegant Wood-sorrel. Pl. ½ foot.

111 O. JACQUINIA'NA (H. B. et Kunth, nov. gen. amer. 5. p. 234.) stemless; leaflets 3, broad, roundish-obovate, somewhat emarginately 2-lobed, and are, as well as the petioles, quite smooth; scape 3-6-flowered; sepals with two spots at the top of each; styles very long. ♃. G. Native of Mexico, near Real-del-Monte. Flowers violet-coloured. Bulb solitary.

Jacquin's Wood-sorrel. Pl. ¼ foot.

112 O. DE'BILIS (H. B. et Kunth, nov. gen. amer. 5. p. 234.) stemless; leaflets 3, subrotund, deeply emarginate, puberulous beneath; scapes 6-flowered, bifid, and are as well as the petioles hairy; sepals bluntish, each marked at the top with a spot; styles very long. ♃. S. Native of New Spain between La Venta Grande and the city of Caraccas. Flowers violet-coloured, about the size of those of *O. acetosélla*. Bulbs tufted.

Weak Wood-sorrel. Pl. ¼ foot.

113 O. SCHRADERIA'NA (H. B. et Kunth, nov. gen. amer. 5. p. 234.) stemless; leaflets 3, broad, roundish-obovate, emarginate, smooth; petioles rather pilose; scapes smooth, 9-11-flowered; sepals blunt, each marked with a spot at the apex; styles equal in length to the shorter stamens. ♃. G. Native of South America on mount Quindiu. Flowers violet-coloured, about the size of those of *O. stricta*.

Schrader's Wood-sorrel. Pl. ¼ foot.

114 O. MI'NIMA (Ruiz et Pav. mss. in herb. Lamb,) root a bulb, scaly; plant hairy; leaflets 3, sessile, triangularly emarginate; peduncles 1-flowered, not so long as the leaves. ♃. G. Native of Peru. Flowers rather large, apparently purple.

Least Wood-sorrel. Pl. 1 to 2 inches.

115 O. CARNÒSA (Mol. chil. ex Lindl. bot. reg. 1063.) stem short, scaly; leaves trifoliate; leaflets nearly sessile, obcordate, fleshy, marked beneath with chrystalline dots; scape 2-3 or many-flowered; sepals triangular, flat. ♃. F. Native of Chili at Conception. Hook. bot. mag. 2866. Root fusiform. Petals obtuse, emarginate, sometimes denticulated, yellow. Mr. Collie says, that this is a very succulent plant, and is powerfully antiscorbutic.

Fleshy Wood-sorrel. Fl. Ap. Sep. Clt. 1825. Pl. 3-6 inches.

116 O. LATIFÒLIA (H. B. et Kunth, nov. gen. amer. 5. p. 234. t. 467.) stemless; leaflets 3, broad, somewhat deltoid, emarginately 2-lobed, ciliated, smooth; petioles puberulous; scapes 6-7-flowered; sepals bluntish, each marked at the apex by a spot; styles intermediate. 4. G. Native of Mexico near Campeachy. Flowers violet-coloured, a little smaller than those of the preceding. Bulb solitary.

Broad-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

117 O. GRANDIFÒLIA (D. C. prod. 1. p. 696.) stemless; leaflets 3, roundish-obovate, deeply emarginate, ciliated, puberulous above, pubescent beneath; petioles pilose; scapes many-flowered; sepals obtuse, each marked with a spot at the apex; styles very long. 4. S. Native of New Andalusia, in humid shady places on mount Cocollar. O. macrophýlla, H. B. et Kunth, nov. gen. amer. 5. p. 234. but not of Hornem. Bulbs tufted. Flowers white, about the size of those of *O. stricta*.

Great-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

118 O. LASIOPE'TALA (Zuccar. in act. monach. ex Spreng. syst. append. p. 184.) stemless; leaflets 3, obcordately 2-lobed, smooth above, pubescent beneath; scape usually 3-flowered; petals pilose on the outside, as well as the margins; styles longer than the stamens. 4. S. Native of Monte Video.

Woolly-petalled Wood-sorrel. Pl. $\frac{1}{2}$ foot.

119 O. RU'BRA (St. Hil. fl. bras. 1. p. 124.) stemless; leaflets 3, obcordate, smoothish, full of blackish dots; scape smoothish, umbelliferous, 6-12-flowered; umbel simple, with a very short involucre; styles longer than the stamens; cells of ovary 4-5-seeded. 4. S. Native of Brazil, in the southern parts of the province of St. Paul, on the banks of rivulets. Flowers fine red. Petals smooth, entire. Stigmas small, capitate. Root tuberous, obovate or cylindrical.

Red-flowered Wood-sorrel. Fl. March. Pl. $\frac{1}{4}$ foot.

120 O. RUPE'STRIS (St. Hil. fl. bras. 1. p. 126.) stemless; leaflets 3, obcordate, sessile, pilose, ciliated, with rounded sides; petioles hairy; scape hairy, umbelliferous; umbels simple, involucrated; sepals linear, acutish, spotted at the apex; petals pilose; styles shorter than the stamens; cells of ovary 6-seeded. 4. G. Native of Brazil, on rocks in the mountains called Serra de Villa Rica, in the province of Minas Geraes. Flowers rose-coloured. Stigmas capitate. Root a bulb, about the size of a hazel-nut.

Rock Wood-sorrel. Fl. Jan. Pl. $\frac{1}{4}$ foot.

121 O. U'RBICA (St. Hil. fl. bras. 1. p. 126.) stemless; leaflets 3, obcordate, pilose; petioles hairy; scape hairy; umbels compound, involucrated, many-flowered; sepals pilose, acutish, bimaculate at the apex; styles intermediate; cells of ovary 8-seeded. 4. S. Native of Brazil, very frequent on road sides and on moist walls about Rio Janeiro. O. violàcea, Savign. ency. 4. p. 686. but not of Lin. Jacq. nor Michx. O. Martiàna, Zucc. in act. monach. ex Spreng. syst. append. p. 185. Flowers purple, with entire petals. Bulb about the size of a hazel-nut, and bearing small bulbs in the axils of the lower leaves.

City Wood-sorrel. Pl. $\frac{1}{4}$ foot.

122 O. TRIANGULA'RIS (St. Hil. fl. bras. 1. p. 128.) stemless; leaflets 3, on short petioles, large, triangular, hardly retuse, silky-villous on both surfaces; petioles villous; scape villous, umbelliferous, many-flowered; sepals oblong-linear, pilose; styles very villous, shorter than the stamens; stigmas capitate, laciniately many-parted. 4. S. Native of Brazil, in the province of Rio Janeiro, among rocks on the banks of the river Uba. Flowers rose-coloured, with entire, smooth petals. Root a bulb.

Triangular-leaved Wood-sorrel. Fl. Oct. Pl. $\frac{1}{4}$ foot.

123 O. PALU'STRIS (St. Hil. fl. bras. 1. p. 127.) stemless; leaflets 3, truncately triangular, smoothish, with rounded sides; petioles villous at the apex; scape umbelliferous, smoothish, many-flowered; sepals smooth, linear, bluntish, spotted; styles length of the stamens, or shorter; cells of ovary 7-seeded. 4. S. Native of Brazil, in the western part of the province of Minas Geraes, in marshes. O. papilionàcea, Willd. herb. Lodd. bot. cab. icon. Flowers purple, with nearly entire, smooth petals. Stigmas subcapitate. Bulb ovate or oblong.

Marsh Wood-sorrel. Pl. $\frac{1}{4}$ foot.

124 O. BIPARTI'TA (St. Hil. fl. bras. 1. p. 125. t. 25.) stemless; leaflets 3, sessile, 2-parted, smoothish, with the divisions linear and diverging; scape dichotomously umbelliferous, many-flowered; involucre small, 2-cleft; sepals linear, obtuse, bimaculate at the base; styles intermediate; cells of ovary 12-seeded. 4. S. Native of Brazil, in the province of Rio Grande do Sul, frequent. Flowers red, with obtuse petals. Styles angular, hairy, joined at the base. Root an obovate bulb.

Two-parted-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

125 O. CAPRÌNA (Lin. spec. 622.) stemless; leaflets 3, obcordately 2-lobed, smooth, somewhat ciliated; scape umbelliferous, 2-3-flowered; flowers erect; styles very short. 4. G. Native of the Cape of Good Hope. Flowers of a bluish flesh-colour, with a yellow bottom. O. erécta, Savig. in Lam. dict. 4. p. 685. O. pes-càpræ, Lin. spec. 622. Bulb ovate, triangular.

Goat's-foot Wood-sorrel. Fl. March, June. Clt. 1757. Pl. $\frac{1}{4}$ foot.

126 O. CE'RNUA (Thunb. diss. ox. no. 12. t. 2. f. 2.) stemless or with a short stem; leaflets 3, obcordately 2-lobed, smooth, or a little ciliated; scape umbelliferous, many-flowered; flowers at first drooping; styles very short. 4. G. Native of the Cape of Good Hope.—Mill. icon. t. 195. f. 1. Jacq. ox. no. 16. t. 6. O. pes-càpræ, Savign. in Lam. dict. 4. p. 685. Corolla yellow. Stamens smooth. This species is to be found frequently in gardens under the name of *O. caprìna*. O. caprìna, Curt. bot. mag. t. 237. Bulbs issuing from the axils of the leaves.

Drooping-flowered Wood-sorrel. Fl. Feb. May. Clt. 1757. Pl. $\frac{1}{2}$ foot.

127 O. COMPRE'SSA (Jacq. ox. no. 19. t. 78. f. 3.) stemless; petioles flattish; leaflets 3, obcordate, puberulous; scape umbelliferous, 2-flowered; sepals entire; styles very long. 4. G. Native of the Cape of Good Hope. Flowers yellow.

Compressed-petioled Wood-sorrel. Fl. year. Clt. 1794. Pl. $\frac{1}{4}$ foot.

128 O. DENTA'TA (Jacq. ox. no. 17. t. 7.) nearly stemless; leaflets 3, obcordate, smooth, a little ciliated; scape umbelliferous, 2-4-flowered; sepals 3-toothed at the apex, beset with glands; styles very long. 4. G. Native of the Cape of Good Hope. Flowers pale flesh-coloured or pale purplish. Leaves purple beneath.

Toothed-sepalled Wood-sorrel. Fl. Nov. Dec. Clt. 1793. Pl. $\frac{1}{4}$ foot.

129 O. LI'VIDA (Jacq. ox. no. 18. t. 8.) stemless: leaflets 3, obcordately 2-parted, of a livid-violet colour beneath; scape umbelliferous, 2-flowered; styles intermediate. 4. G. Native of the Cape of Good Hope. Flowers flesh-coloured, with yellowish claws.

Livid-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1793. Pl. $\frac{1}{4}$ ft.

130 O. BÒWII (Ait. mss.) stemless, hoary-pubescent; leaflets 3, obtuse; peduncles about equal in length to the leaves, umbelliferous. 4. G. Native of the Cape of Good Hope. Root bulbous. Flowers large, red. An elegant plant.

Bowie's Wood-sorrel. Fl. April, Aug. Clt. 1824. Pl. $\frac{1}{4}$ ft.

131 O. PURPURA'TA (Jacq. hort. schœnb. t. 356.) almost stemless; leaflets 3, obcordate, ciliated, blood-coloured beneath; scape umbelliferous, 5-7-flowered; styles very long. 4. G. Native of the Cape of Good Hope. Flowers white, or rather pale flesh-coloured. Stamens hardly connate. Petioles round.

Purplish-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1822. Pl. $\frac{1}{2}$ foot.

132 O. MACROPHY'LLA (Horn. hort. hafn. 1. p. 428.) stemless; leaflets 3, obcordate, smooth; scape bifid, rather pilose, longer than the leaves; flowers drooping after expansion; styles intermediate. ♃. G. Native of the Cape of Good Hope.

Long-leaved Wood-sorrel. Fl. Jan. Sept. Clt. 1820. Pl. $\frac{1}{4}$ ft.

133 O. LI'BYCA (Viv. fl. lib. ex Spreng. syst. 2. p. 426.) stemless; leaflets 3, obcordate, hairy; scape umbelliferous, many-flowered, longer than the leaves; flowers drooping? styles intermediate. ♃. G. Native of Cyrenaica. Flowers yellow?

Libyan Wood-sorrel. Pl. $\frac{1}{4}$ foot.

134 O? GLOMERA'TA (Hook. bot. Beech. voy. p. 13.) stemless; leaves trifoliate; leaflets linear; scape twice the length of the elongated petioles; umbel many-flowered, capitate. ♃. F. Native of Chili, at Coquimbo. Flowers yellow. Sepals somewhat 3-toothed, about equal in length to the petals. Stamens 10. Stigmas 5.

Glomerate Wood-sorrel. Pl. $\frac{1}{4}$ foot.

135 O. CORYMBÒSA (D. C. prod. 1. p. 696.) stemless; leaflets 3, smoothish, very broad, obcordate, rounded at both sides; scapes bifid, branched, many-flowered. ♃. S. Native of the islands of Bourbon and the Mauritius. Flowers double, small, pale-red. Scape 7-10 inches long.

Corymbose-flowered Wood-sorrel. Pl. $\frac{1}{2}$ to 1 foot.

* * * *Leaflets 3, ovate.*

136 O. VIRGÒSA (Savig. in Lam. dict. 4. p. 685.) stemless; leaflets 3, ovate; scapes many-flowered; flowers in whorls. ♃. G. Native of Chili.—Mol. chil. p. 110. Flowers yellow? Scapes 5 feet high.

Twiggy Wood-sorrel. Pl. 5 feet.

§ 7. *Simplicifòlia* (from *simplex*, simple, and *folium*, a leaf; leaves simple). *D. C. prod.* 1. *p.* 696. *Plants stemless and caulescent. Leaves simple, pubescent; petioles naked. Scapes and peduncles one or many-flowered.*

137 O. MANDIOCCA'NA (Raddi, mem. bras. p. 21.) caulescent, erect, or prostrate; leaves rosulate, somewhat ovate, acuminated, with the margins and middle nerve pubescent; petioles with a winged margin, as well as the many-flowered peduncles, which are flattened; stamens shorter than the styles; cells of ovary 1-seeded. ♃. S. Native of Brazil, in woods on the mountain called Mandiocca, near Rio Janeiro. O. alièna, Spreng. neuw. entd. 3. p. 58. Flowers yellow. Stigmas capitate.

Var. α, Raddiàna (St. Hil. fl. bras. 1. p. 118.) leaves exactly ovate, very obtuse at the base; petioles with winged margins, ciliated.

Var. β, rhombifòlia (St. Hil. fl. bras. 1. p. 188.) leaves rhomb-ovate; petioles scarcely winged, pubescent.

Mandiocca Wood-sorrel. Pl. $\frac{1}{2}$ foot.

138 O. OVA'TA (Zucc. in act. monach. 9. ex Spreng. syst. append. 184.) stem suffruticose, almost simple; leaves ovate, acutish, smooth; peduncles many-flowered; stamens exceeding the styles. ♄. S. Native of Brazil. Flowers yellow.

Ovate-leaved Wood-sorrel. Shrub 1 foot.

139 O. ALA'TA (Mart. et Zucc. in act. monach. 9. ex Spreng. syst. append. p. 184.) stem suffruticose; leaves ovate, acute, pubescent; peduncles elongated, winged, many-flowered; styles exceeding the stamens in length. ♄. S. Native of Brazil.

Winged-peduncled Wood-sorrel. Shrub 1 foot.

140 O. CILIA'TA (Spreng. syst. 2. p. 423.) caulescent; leaves cordate, orbicular, obtuse, ciliated; petioles and many-flowered peduncles hairy; styles longer than the stamens. ♃. S. Native of Brazil.

Ciliated-leaved Wood-sorrel. Pl. $\frac{1}{2}$ foot.

141 O. VILLÒSA; villous; stem shrubby, erect; leaves simple, oblong-obovate, or cordate, mucronate; petioles terete; pedicels 1-flowered. ♄. G. Native of Mexico. Sepals acute.

Villous Wood-sorrel. Shrub $\frac{1}{2}$ foot.

142 O. PRIMULÆFÒLIA (Raddi, mem. bras. add. p. 21.) stemless; leaves oblong, obtuse, tapering to the base; scapes many-flowered, filiform, erectish. ♃. S. Native of Brazil, in woods on the mountain called Mandiocca, near Rio Janeiro. This is an intermediate plant between sections *Simplicifòlia* and *Caprìna*.

Primrose-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

143 O. MONOPHY'LLA (Lin. mant. 241.) stemless; leaves elliptical, obtuse; scape 1-flowered; filaments smooth; styles intermediate, bearing glandular hairs. ♃. G. Native of the Cape of Good Hope. Jacq. ox. no. 35. t. 79. f. 3. Thunb. ox. no. 1. t. 1. f. 1. Flowers about the size of those of *O. acetosélla*, pale-purple, with yellowish claws. Root bulbous, hairy.

One-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1774. Pl. $\frac{1}{8}$ ft.

144 O. LE'PIDA (Jacq. ox. no. 34. t. 21.) stemless; leaves obovate, somewhat retuse; scape 1-flowered; styles very long, and bear glandular hairs, as well as the stamens. ♃. G. Native of the Cape of Good Hope. Flowers pale-purple, with yellow claws. Root bulbous, hairy.

Pretty Wood-sorrel. Fl. Jan. Nov. Clt. 1823. Pl. $\frac{1}{4}$ foot.

145 O. ROSTRA'TA (Jacq. ox. no. 36. t. 22.) stemless; leaves obovate, retuse; scape 1-flowered; styles very short; filaments bearing glandular hairs, inner ones with a beak at the top on the back of each, and bearing an anther at the end of the beak. ♃. G. Native of the Cape of Good Hope. Flowers of a lilac colour.

Beaked-stamened Wood-sorrel. Fl. Oct. Nov. Clt. 1795. Pl. $\frac{1}{8}$ foot.

§ 8. *Pterópodæ* (from πτερον, *pteron*, a wing, and πους ποδος, *pous podos*, a foot; petioles winged). *D. C. prod.* 1. *p.* 697. *Stemless. Leaves smooth, with 2-3 leaflets. Petioles winged. Scapes 1-flowered.*

146 O. CRI'SPA (Jacq. ox. no. 37. t. 23.) stemless; leaflets 2, roundish-obovate, emarginate, with waved margins; styles very long, and are, as well as the filaments, beset with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers large, white, or pale-lilac, with yellow claws.

Curled-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1793. Pl. $\frac{1}{4}$ ft.

147 O. LEPORÌNA (Jacq. ox. no. 39. t. 25.) stemless; leaflets 2, elliptical, emarginate, with ciliately and cartilaginous toothletted edges; styles very long, and are, as well as the filaments, beset with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers white, with reddish edges, and yellow claws.

Hare's-foot Wood-sorrel. Fl. Jan. Nov. Clt. 1795. Pl. $\frac{1}{4}$ ft.

148 O. ASINÌNA (Jacq. ox. no. 38. t. 24.) stemless; leaflets 2, lanceolate, with cartilaginous toothletted edges; styles intermediate; filaments beset with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers yellow.

Ass's-ear-leaved Wood-sorrel. Fl. Nov. Dec. Clt. 1792. Pl. $\frac{1}{4}$ foot.

149 O. LANCEÆFÒLIA (Jacq. ox. no. 40. t. 26.) stemless; leaflets 2-3, with cartilaginous scabrous margins; styles very long; filaments smooth. ♃. G. Native of the Cape of Good Hope. Flowers yellow.

Lance-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1795. Pl. $\frac{1}{4}$ foot.

150 O. FABÆFÒLIA (Jacq. ox. no. 41. t. 27.) stemless; leaflets 3, obovate, emarginate, mucronated; styles intermediate, and are, as well as the filaments clothed with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers yellow.

Bean-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1794. Pl. $\frac{1}{4}$ ft.

§ 9. *Acetoséllæ* (a dim. of *acetosus*, sour; taste of leaves). *D. C. prod.* 1. *p.* 697. *Stemless and somewhat stipitate. Leaves stalked, trifoliate. Petioles without margins. Leaflets not glandular beneath. Scapes* 1*-flowered. Roots bulbous.*

* *Leaves oblong or lanceolate. Stemless, or almost so.*

151 O. LABURNIFÒLIA (Jacq. ox. no. 42. t. 28.) stemless, pubescent; lateral leaflets obliquely oblong, middle one somewhat lanceolate; scapes longer than the petioles, with 2 bracteas in the middle; styles very long. ♃. G. Native of the Cape of Good Hope. Petioles red. Leaves purple beneath. Flowers yellow. This species has the habit of those species belonging to section *Pteropòdæ*, but the petioles are half round and wingless.

Laburnum-leaved Wood-sorrel. Fl. Sept. Oct. Clt. 1793. Pl. $\frac{1}{4}$ foot.

152 O. SANGUÍNEA (Jacq. ox. no. 43. t. 29.) stemless, pubescent; leaflets oblong, obtuse, middle one cuneated at the base; scapes length of petioles, with 2 bracteas below the middle; styles intermediate. ♃. G. Native of the Cape of Good Hope. This is very like the preceding species, but the petioles and under surface of the leaves are of a blood-colour. Flowers yellow.

Bloody-leaved Wood-sorrel. Fl. Oct. Dec. Clt. 1795. Pl. $\frac{1}{4}$ foot.

153 O. RU'BRO-FLA'VA (Jacq. ox. no. 65. t. 50.) almost stemless, hairy; leaflets lanceolate-oblong, obtuse, middle one cuneated; scapes longer than the petioles, with 2 bracteas under the middle; styles very short. ♃. G. Native of the Cape of Good Hope. Corolla yellow, but red outside, as well as margins.

Red-and-yellow-flowered Wood-sorrel. Fl. Jan. Nov. Clt. 1823. Pl. $\frac{1}{4}$ foot.

154 O. TRI'COLOR (Jacq. ox. no. 63.) stemless, pubescent; leaflets oblong, obtuse, middle one somewhat cuneated; scapes longer than the petioles; styles intermediate; filaments clothed with glandular hairs. ♃. G. Native of the Cape of Good Hope.

Var. α, flàva (D. C. prod. 1. p. 698.) petals yellow, red outside, as well as margins. Jacq. ox. t. 47.

Var. β, álba (D. C. prod. 1. p. 698.) petals white, red on the outside, as well as margins.

Three-coloured-flowered Wood-sorrel. Fl. Oct. Dec. Clt. 1794. Pl. $\frac{1}{4}$ foot.

155 O. FERRUGINA'TA (Jacq. hort. schœnbr. 3. t. 274,) almost stemless, pubescent; leaflets obovate, retuse, middle one cuneated; peduncles a little shorter than the leaves, with 2 bracteas in the middle; styles intermediate. ♃. G. Native of the Cape of Good Hope. Flowers white. Leaves marked with rusty spots.

Rusty-spotted-leaved Wood-sorrel. Fl. June, July. Clt. 1790. Pl. $\frac{1}{4}$ foot.

156 O. EXALTA'TA (Jacq. ox. no. 64. t. 49.) almost stemless, puberulous; leaflets emarginate, lateral ones elliptical, middle one obovately-cuneated; peduncles twice as long as the leaves, with 2 bracteas in the middle; styles very short. ♃. G. Native of the Cape of Good Hope. Corolla whitish, red on the outside and margins.

Exalted Wood-sorrel. Pl. $\frac{1}{2}$ foot.

157 O. FUSCA'TA (Jacq. oxal. no. 61. t. 45.) almost stemless, puberulous; leaflets obtuse, lateral ones ovate, middle one wedge-shaped; peduncles twice as long as the leaves, with 2 bracteas in the middle; styles very long, clothed with subglandular spreading hairs, as well as the filaments. ♃. G. Native of the Cape of Good Hope. Leaves blood-coloured beneath, but spotted with brown above. Flowers white, with a yellow bottom, and reddish on the outside.

Brown-spotted-leaved Wood-sorrel. Fl. May, June. Clt. 1795. Pl. $\frac{1}{2}$ foot.

** *Leaflets oblong or lanceolate. Stipitate or substipitate.*

158 O. CILIA'RIS (Jacq. ox. no. 45. t. 30.) stipitate, pubescent; stem naked below; leaflets oblong, obtuse, somewhat emarginate; peduncles longer than the petioles, with 2 bracteas immediately under the calyx; styles very long. ♃. G. Native of the Cape of Good Hope. Flowers purplish-red, with a yellow bottom. Petioles and leaves ciliated.

Ciliary Wood-sorrel. Fl. Oct. Nov. Clt. 1793. Pl. $\frac{1}{2}$ ft.

159 O. ARCUA'TA (Jacq. ox. no. 46. t. 31.) stipitate, pubescent; stem naked at the base, decumbent; leaflets lanceolate, emarginate; peduncles length of petioles, with 2 bracteas immediately under the calyx; styles very short. ♃. G. Native of the Cape of Good Hope. Flowers violaceous, with dirty yellow claws. Leaflets recurved.

Arched-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1795. Pl. decumbent.

160 O. FLA'CCIDA (Jacq. ox. no. 66. t. 51.) substipitate; decumbent, pubescent; leaflets oblong, retuse, middle one cuneated; peduncles twice as long as the leaves, with 2 bracteas in the middle; styles very short; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Petals white, red on the outside as well as the margins, with yellow claws. Peduncles flaccid.

Flaccid-peduncled Wood-sorrel. Fl. Oct. Nov. Clt. 1812. Pl. $\frac{1}{4}$ foot.

161 O. AMBÍGUA (Jacq. ox. no. 59. t. 43.) substipitate, rather hairy; leaflets obovate-oblong, obtuse; peduncles equal in length to the leaves, or longer, with 2 bracteas in the middle; styles very long, covered with subglandular hairs. ♃. G. Native of the Cape of Good Hope. Corolla white, with a yellow bottom, red on the outside as well as the margins. Sepals each with 2 red glands under the top.

Ambiguous Wood-sorrel. Fl. Sep. Dec. Clt. 1790. Pl. $\frac{1}{4}$ ft.

162 O. UNDULA'TA (Jacq. ox. no. 60. t. 44.) stipitate, erect, rather hairy; leaflets obovate-oblong, obtuse; peduncles longer than the petioles, with 2 bracteas under the middle; styles very long, hairy. ♃. G. Native of the Cape of Good Hope. Petals white, with yellow claws, dotted with red on the outside. Sepals and ovaries bearing many glands. Leaflets wavy.

Wavy-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1795. Pl. $\frac{1}{2}$ ft.

163 O. GLANDULÒSA (Jacq. ox. no. 61. t. 46.) substipitate, puberulous; leaflets oblong, obtuse, with the middle one somewhat cuneated; peduncles length of petioles, with 2 glands in the middle; styles intermediate; filaments, peduncles, and calyxes beset with glandular hairs. ♃. G. Native of the Cape of Good Hope. Corolla white, with a yellow bottom. Leaves brownish on the under surface.

Glandular Wood-sorrel. Pl. $\frac{1}{4}$ foot.

*** *Leaves roundish or somewhat rhomboid.*

164 O. TRUNCA'TULA (Jacq. ox. no. 76. t. 62.) stemless, hairy; leaflets triangular, truncate; scapes 3-times longer than the petioles, with 2 bracteas in the middle; styles very long, and are as well as the filaments beset with glandular hairs. ♃. G. Native of the Cape of Good Hope. Corolla lilac, with yellow claws. Leaflets violet-coloured beneath, hairy, soft to the touch, like *Marsh-mallow*.

Truncate-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

165 O. SULPHU'REA (Jacq. ox. no. 77. t. 63.) stemless, puberulous; leaflets roundish; peduncles length of petioles, with 2 bracteas at the base; styles very short; sepals reflexed at the apex, fringed with club-shaped hairs. ♃. G. Native of the

Cape of Good Hope. Corolla pale-yellow. Leaves blood-coloured beneath and spotted with white, and the veins are white above.

Sulphur-coloured-flowered Wood-sorrel. Fl. 1795. Pl. $\frac{1}{4}$ ft.

166 O. BREVÍSCAPA (Jacq. ox. no. 72. t. 58.) stemless, puberulous; leaves roundish; petioles flattish; pedicels one-half shorter than the leaves, with 2 bracteas beneath the middle; styles intermediate; filaments glandular. ♃. G. Native of the Cape of Good Hope. Corolla white, with a yellow bottom. Leaves red beneath and dotted.

Short-scaped Wood-sorrel. Pl. $\frac{1}{4}$ foot.

167 O. SPECIÒSA (Willd. spec. 2. p. 779.) stemless; puberulous; leaflets roundish; scapes about equal in length to the petioles, with 2 bracteas under the middle; styles very long, bearing simple and glandular hairs mixed, as well as the filaments. ♃. G. Native of the Cape of Good Hope.

Var. α, purpùrea (Lin. spec. 621.) leaves blood-coloured beneath; corollas rose-purple. O. speciòsa, Jacq. ox. no. 74. t. 60.

Var. β, sugillàta (Jacq. ox. no. 75. t. 61.) adult leaves livid beneath as well as on the margins above; corollas white, but flesh-coloured outside.

Var. γ, rigídula (Jacq. ox. no. 73. t. 59.) leaves green on both surfaces; corollas white, with a yellow bottom.

Shewy Wood-sorrel. Fl. Sept. Nov. Clt. 1690. Pl. $\frac{1}{4}$ ft.

168 O. VARIA'BILIS (Jacq. ox. no. 67.) stemless, puberulous; leaflets roundish, middle one cuneated at the base; pedicels equal or longer than the leaves, with 2 bracteas under the middle; styles very short; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope.

Var. α, longíscapa (D. C. prod. 1. p. 699.) scape twice as long as leaves; corolla white, or somewhat flesh-coloured. Jacq. ox. t. 52.

Var. β, rùbra (Jacq. ox. t. 53.) scapes a little longer than the leaves; corolla rose-purple.

Var. γ, grandiflòra (Jacq. ox. no. 68. t. 54.) scapes length of petioles; corolla large, white; leaves blood-coloured beneath.

Var. δ, Símsii (D. C. prod. 1. p. 699.) scapes length of petioles; corolla large, white; leaves green on both surfaces. Sims, bot. mag. t. 1683. This, with var. γ, will probably constitute a distinct species.

Variable Wood-sorrel. Fl. Oct. Dec. Clt. 1795. Pl. $\frac{1}{4}$ ft.

169 O. PURPU'REA (Willd. spec. 2. p. 778.) stemless; puberulous; leaflets roundish, wedge-shaped; scapes longer than the leaves, with 2 bracteas under the middle; styles intermediate; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Jacq. ox. no. 70. t. 56. Flowers purple.

Var. β, láxula (Jacq. ox. no. 71. t. 57.) scapes length of petioles; corolla white.

Purple-flowered Wood-sorrel. Fl. Oct. Nov. Clt. 1812. Pl. $\frac{1}{4}$ foot.

170 O. CONVE'XULA (Jacq. ox. no. 69. t. 55.) smooth; stipe declinate, naked below; leaflets roundish, dotted; stipulas dilated, acuminated; peduncles longer than the leaves; bracteoles alternate; styles intermediate; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers rose-coloured, with a yellow bottom.

Small-convex Wood-sorrel. Fl. Jan. Nov. Clt. 1789. Pl. $\frac{1}{2}$ ft.

171 O. HU'MILIS (Thunb. prod. app. 190.) stemless; leaflets roundish, ciliated; scapes 1-flowered. ♃. G. Native of the Cape of Good Hope. Bulb ovate. Petioles pubescent, prostrate. Scape a little longer than the leaves, with 2 bracteas in the middle. Corolla with an ample yellowish tube, and a purple limb. Thunb. fl. cap. ed. Schult. 2. p. 535. is said to be the same as *O. purpùrea* of Lin.

Humble Wood-sorrel. Pl. $\frac{1}{4}$ foot.

172 O. LÆVIGA'TA (Willd. enum. suppl. 26.) almost stemless, quite smooth; leaflets roundish, intermediate one wedge-shaped; scape about the length of the petioles; styles very short. ⊙. H. Native of? Corolla purple. Link. enum. 439.

Smooth Wood-sorrel. Fl. June, July. Clt. 1818. Pl. $\frac{1}{4}$ ft.

* * * * *Leaflets obcordate. Stemless, or almost so.*

173 O. PUNCTA'TA (Lin. fil. suppl. 243.) stemless; leaflets roundish, obcordate, dotted beneath, smooth; petioles and scapes puberulous; scapes longer than the leaves, with 2 bracteas above the middle; styles very short; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers pale flesh-coloured, red on the outside as well as the margins. Jacq. ox. no. 82. t. 66. Thunb. diss. no. 3. t. 1. Leaves bright-purple beneath, with shining golden dots.

Dotted-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

174 O. STRUMÒSA (Jacq. ox. no. 79. t. 64.) stemless, puberulous; leaflets obcordate; pedicels length of petioles, with 2 bracteas beneath the middle; styles very short, with a swelling under the top of each; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Petals white, but red on the outside as well as the margins, with yellow claws. Leaves brownish beneath, and with brown spots above.

Swelled-styled Wood-sorrel. Pl. $\frac{1}{4}$ foot.

175 O. MARGINA'TA (Jacq. ox. no. 85. t. 68.) stemless, puberulous; leaflets obcordate, roundish; scapes one-half shorter than the petioles, with 2 bracteas in the middle; calyxes ciliated, with club-shaped hairs, reflexed at the top; styles intermediate. ♃. G. Native of the Cape of Good Hope. Flowers large, white. Leaves blood-coloured on the under surface and edged with cinereous villi.

Marginate-leaved Wood-sorrel. Fl. Sept. Dec. Clt. 1812. Pl. $\frac{1}{4}$ foot.

176 O. PULCHE'LLA (Jacq. ox. no. 86. t. 69.) stemless, puberulous; leaflets obcordate, roundish; scapes 3-times shorter than the petioles, with 2 bracteas in the middle; calyxes ciliated with club-shaped hairs, reflexed at the apex; styles very long, and are as well as the filaments beset with glandular hairs. ♃. G. Native of the Cape of Good Hope. Leaves blood-coloured beneath; veins white above. Flowers white, with a blush of carnation within above the base.

Neat Wood-sorrel. Fl. Oct. Nov. Clt. 1795. Pl. $\frac{1}{4}$ foot.

177 O. OBTU'SA (Jacq. ox. no. 83. t. 79. f. 1.) stemless, densely puberulous; leaflets obcordate; scape longer than the leaves, with 2 bracteas above the middle; sepals obtuse; styles intermediate. ♃. G. Native of the Cape of Good Hope. O. lanàta *α*, Thunb. Flowers red. Filaments smooth.

Blunt-sepalled Wood-sorrel. Fl. Oct. Nov. Clt. 1812. Pl. $\frac{1}{4}$ ft.

178 O. LANA'TA (Lin. fil. suppl. 244. exclusive of the synonyms) stemless, villously-woolly; leaflets obcordate; scape longer than the leaves, with 2 bracteas in the middle; sepals acute; styles very short. ♃. G. Native of the Cape of Good Hope. Jacq. ox. no. 81. t. 77. f. 2. O. lanàta *β*, Thunb. Flowers white. Filaments hairy.

Woolly Wood-sorrel. Fl. Oct. Nov. Clt. 1791. Pl. $\frac{1}{4}$ foot.

179 O. LUTE'OLA (Jacq. ox. no. 80. t. 65.) stemless, hairy; leaflets obcordate, somewhat retuse; scapes length of leaves, with 2 bracteas a little above the middle; styles very short; inner filaments with glandular hairs; sepals obtuse. ♃. G. Native of the Cape of Good Hope. Flowers yellow.

Yellow-flowered Wood-sorrel. Fl. Jan. Sept. Clt. 1823. Pl. $\frac{1}{4}$ foot.

180 O. FA'LLAX (Jacq. ox. no. 84. t. 67.) stemless, pilose; leaflets obcordate, somewhat retuse; scapes longer than the leaves, with 2 bracteas a little above the middle; styles intermediate, beset with glandular hairs; inner stamens with glan-

dular hairs, about the length of the styles. ♃. G. Native of the Cape of Good Hope. Flowers yellow. This species is very like the preceding.

Fallacious Wood-sorrel. Pl. $\frac{1}{4}$ foot.

181 O. MACROGÒNIA (Jacq. ox. no. 87. t. 70.) almost stemless, rather pilose; leaflets obcordate, roundish; scape shorter than the leaves, with 2 bracteas a little above the middle; styles very long, and are as well as the filaments covered with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers yellow. Sepals each with 2 red glands at the top.

Long-angled Wood-sorrel. Pl. $\frac{1}{4}$ foot.

182 O. PIÓTTÆ (Coll. hort. rip. p. 98. t. 1.) stemless, tufted, smooth; leaflets small, obcordate, sessile; scape twice the length of the leaves, with 2 bracteas above the middle; styles longer than the stamens, glandular; filaments smooth; sepals acute, reflexed at the apex. ♃. G. Native of the Cape of Good Hope. Flowers large, rose-coloured.

Piotta's Wood-sorrel. Fl. Jan. Sept. Clt. 1816. Pl. $\frac{1}{4}$ ft.

183 O. MEGAPOTA'MICA (Spreng. syst. app. p. 184.) stemless, pilose; leaflets obcordate; scape longer than the leaves, with 2 bracteas above the middle; sepals bluntish; inner stamens longer than the styles. ♃. S. Native of Brazil, on the banks of the Rio Grande. Flowers yellow?

Rio Grande Wood-sorrel. Pl. $\frac{1}{4}$ foot.

184 O. HISPÍDULA (Zucc. in act. monach. 9. ex Spreng. syst. append. p. 184.) stemless, hispid; leaflets obcordate, ciliated; glaucous beneath; scape longer than the leaves, with 2 bracteas; sepals acute, with 2 glands at the top of each; styles longer than the longest stamens. ♃. S. Native of Brazil.

Hispid Wood-sorrel. Pl. $\frac{1}{4}$ foot.

185 O. ERIORHÌZA (Zucc. in act. monach. 9. ex Spreng. syst. append. p. 184.) stemless: leaflets obcordately 2-lobed, smooth; petioles hairy; scape longer than the leaves, with 2 bracteas; styles shorter than the stamens. ♃. S. Native of Brazil. Bulb woolly.

Woolly-rooted Wood-sorrel. Pl. $\frac{1}{4}$ foot.

186 O. LOBA'TA (Sims, bot. mag. t. 2386.) stemless, smooth; scapes longer than the leaves, with 2 bracteas; leaflets obcordate, rather glaucous beneath; sepals acute; root tuberous. ♃. G. Native of Chili. Flowers yellow, but spotted with red.

Lobed-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1823. Pl. $\frac{1}{4}$ ft.

187 O. NA'NA (St. Hil. ex Spreng. syst. append. 184.) stemless, smooth; leaflets obovate; scape longer than the leaves, with 2 bracteas; styles longer than the stamens. ♃. S. Native of Brazil, at Rio Grande.

Dwarf Wood-sorrel. Pl. $\frac{1}{4}$ foot.

188 O. TE'NERA (Spreng. syst. 2. p. 424.) stemless, smooth; leaflets sessile, obcordate; scape villous, flaccid, 1-2-flowered, longer than the leaves, with 2 bracteas in the middle; sepals awl-shaped; styles longer than the stamens. ♃. G. Native of Monte Video. Bulb fusiform. Flowers yellow. Lindl. bot. reg. 1046.

Tender Wood-sorrel. Fl. May. Clt. 1826. Pl. $\frac{1}{8}$ foot.

189 O. MAGELLA'NICA (Forst. comm. goet. 9. p. 33.) stemless; leaflets obcordate, roundish, fleshy, smooth; scape shorter than the leaves, with 2 bracteas at the top. ♃. G. Native of Terra del Fuego in wet places. Flowers white, about the size of those of *O. acetosélla*.

Magellan Wood-sorrel. Pl. $\frac{1}{4}$ foot.

190 O. ACETOSE'LLA (Lin. spec. 620.) stemless; root of many scaly joints, creeping; leaflets obcordate, puberulous; scapes longer than the leaves, with 2 bracteas above the middle; petals oval, obtuse; styles equal or longer than the inner stamens. ♃. H. Native throughout Europe, in shady places; plentiful in Britain. Smith, engl. bot. t. 762. Œd. fl. dan. t. 980. Jacq. ox. no. 91. t. 80. f. 1. Woodv. med .bot. p. 56. t. 20. Curt. fl. lond. fasc. 2. t. 31. Mill. fig. 195. f. 2. O'xys acetoséla, Hall. helv. no. 928. Flowers white, beautifully veined with purple. Mr. Curtis remarks that the leaves are frequently purplish beneath, that the capsules dart forth their seeds at the slightest touch when ripe. This plant, says Gerarde, is called *Wood-sour Trefoil*, *Stubwort*, and *Sorrel de Bois*; by herbalists *Alleluja* and *Cuckoo's meat*, because it springs forth and flowers with the singing of the cuckoo, at which time Alleluja also was wont to be sung in churches. The names *Alleluja* and *Lujula* are, however, corrupted from the Calabrian name *Juliola*. It is probably called Stubwort from its covering the ground among the stubs in coppices, when they are cut down. In French it is called *La petite oseille* or *Surelle* and *Pain à coucou*.

Wood-sorrel has a grateful acid taste, more grateful than common sorrel, and therefore proper to be used in salads; its acid approaches near to that of the juice of lemons, or the acid of tartar, with which it also corresponds in its medical effects, being esteemed refrigerant, antiscorbutic, and diuretic. An infusion of the leaves, or a whey made by boiling the plant in milk, was formerly used in ardent fevers to allay inordinate heat, and to quench thirst. The London College directs a conserve of the leaves and petals to be made by beating them, with thrice their weight of fine sugar and orange-peel, which has the taste of green tea. It is called *Conserva Lujulæ*. The expressed juice depurated, properly evaporated, and set in a cool place, affords a crystalline acid salt in considerable quantity, which may be used wherever vegetable acids are wanted. It is employed to take iron-moulds and ink-stains out of linen, and is sold under the name of Essential Salt of Lemons. This salt, when genuine, which it seldom is, consists of the vegetable alkali, and a peculiar acid, which, according to Bergman, seems more allied to the acid of sugar than that of tartar. What is sold for it in this country, appears sometimes to consist of cream of tartar with the addition of a small quantity of vitriolic acid. For taking out spots in linen, the stained part is dipped in water, sprinkled with a little of the salt powdered, then rubbed on a pewter plate, after which the spot is washed out with warm water. Dr. Beddoes informs us, that the leaves and stalks, wrapped up in a cabbage-leaf, and macerated in warm ashes until reduced to a pulp, have been successfully applied to scrofulous ulcers. This poultice should remain on the sore for twenty-four hours, and be repeated four times. Afterwards the ulcer is to be dressed with a poultice made of the roots of *Meadow-sweet* (*Spiræ'a ulmària*), bruised and mixed up with the scum of sour butter-milk: doubtless many of the foreign species may be used in the same way. There is no doubt but a salt may be prepared from all the species. Thunberg says that a good salt was prepared from *O'xalis cérnua* at the Cape, which grows in great abundance there; but he does not inform us in what quantity. Twenty pounds of fresh leaves of our *Wood-sorrel* yielded, according to Newman, six pounds of juice, from which two ounces, two drachms, and one scruple of salt, besides two ounces and six drachms of an impure saline mass were procured. Oxalic acid is a vegetable acid naturally formed in *O'xalis acetoséla*, from which it takes its name. It has been discovered by Scheele that this acid can be formed by the action of nitric acid upon sugar and several other vegetable substances. The merit of this discovery was formerly given to Bergman, who first published the method of preparing it in this way.

Var. β, *cærùlea* (D. C. prod. 700.) flowers bluish.—Tourn. inst. 88.

Var. γ, *subpurpuráscens* (D. C. prod. 1. p. 700.) flowers pale-rose or purplish. ♃. H. This is a less plant than the species, and flowers later. It is to be found in England in a lane between Owram and Halifax.

Common *Wood-sorrel*. Fl. April, May. Brit. Pl. $\frac{1}{4}$ foot.

191 O. PARVIFLÒRA (Lejeune, fl. spa. 2. p. 307.) stemless; root toothed, jointed, creeping; leaflets obcordate, puberulous; scapes longer than the leaves, with 2 bracteas above the middle; stamens 5, not 10, equal or shorter than the styles. ♃. H. Native of France, in hedges about Malmedy. O. acetoséllа, var. δ, parviflòra, D. C. prod. 1. p. 700. Flowers white, veined with purple. 4-times smaller than those of *O. acetoséllа*.

Small-flowered Wood-sorrel. Fl. April, May. Pl. ¼ foot.

192 O. AMERICA'NA (Bigl. in litt. D. C. prod. 1. p. 700.) stemless; root toothed, jointed, creeping; leaflets obcordate, puberulous; scape longer than the leaves, with 2 bracteas above the middle; petals oblong, unequally emarginate; styles hardly longer than the inner stamens. ♃. H. Native of North America, in shady woods, round the roots of old trees. Canada (Michx.). On the high mountains of Pennsylvania and New York. O. acetoséllа, Michx. Pursh, and Nutt. Flowers large, white, veined with red, and with a yellow bottom. This plant differs from the European *O. acetoséllа* in the petals being cuneate, emarginate, and narrower, not oval and blunt. It possesses the same qualities.

American Wood-sorrel. Fl. April, May. Clt.? Pl. ¼ ft.

* * * * *Leaflets obcordate. Substipitate, or with a stem.*

193 O. TENE'LLA (Jacq. ox. no. 32. t. 19.) plant substipitate, smoothish; leaflets obcordate; scape longer than the leaves, with 2 bracteas above the middle; styles very short; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Corolla pale lilac. Sepals with 2 red glands at the top of each, on the outside.

Delicate Wood-sorrel. Fl. Nov. Dec. Clt. 1793. Pl. ¼ ft.

194 O. NA'TANS (Lin. fil. suppl. 243.) stem declinate, naked at the base; leaflets obcordate, smooth; peduncles length of leaves, with 2 bracteas under the middle; styles very short. ♃. G. Native of the Cape of Good Hope, floating in water. Thunb. ox. no. 4. t. 1. f. 4. Jacq. ox. no. 78. t. 76. f. 2. Flowers white. Leaves and flowers floating on the water.

Floating Wood-sorrel. Fl. Sept. Dec. Clt. 1795. Pl. fl.

195 O. CRUENTA'TA (Jacq. fil. ecl. 1. p. 66. t. 45.) plant substipitate, rather hairy; leaflets obcordate; peduncles a little longer than the leaves, with 2 bracteas above the middle; styles intermediate. ♃. G. Native of the Cape of Good Hope. Flowers purple. Filaments smooth, outer ones toothed.

Bloody Wood-sorrel. Pl. ¼ foot.

196 O. FILICAU'LIS (Jacq. hort. schoenbr. 2. t. 205.) stem naked at the base, decumbent, a little branched; leaflets obcordately 2-lobed, smooth; peduncles longer than the leaves, with 2 bracteas in the middle; styles intermediate. ♃. G. Native of the Cape of Good Hope. Flowers violaceous. Filaments smooth, outer ones toothed.

Thread-stemmed Wood-sorrel. Fl. Sept. Oct. Clt. 1815. Pl. decumbent.

197 O. BÍFIDA (Thunb. ox. no. 16. t. 1. f. 2.) stem erect, branched a little; leaflets obcordately 2-lobed, smooth; peduncles longer than the leaves, with 2 bracteas a little above the middle. ♃. G. Native of the Cape of Good Hope. Jacq. ox. no. 89. t. 79. f. 4. Flowers violaceous, with a yellow bottom. Styles very long, hairy as well as the stamens.

Bifid-leaved Wood-sorrel. Fl. Sept. Oct. Clt. 1791. Pl. ½ ft.

* * * * * *Leaflets linear, somewhat cuneated, emarginate, or retuse at the apex. Stems usually declinate.*

198 O. CUNEA'TA (Jacq. ox. no. 55. t. 40.) stem declinate, naked at the base; leaflets cuneated, emarginate, pilose; pedicels length of petioles, with 2 bracteas at the apex; styles very long; filaments with glandular hairs at the apex. ♃. G. Native of the Cape of Good Hope. Flowers white, with a yellow bottom.

Cuneated-leaved Wood-sorrel. Fl. Jan. Sept. Clt. 1822. Pl. decumbent.

199 O. CUNEIFÒLIA (Jacq. ox. no. 56. t. 41.) stem declinate, naked at the base; leaflets cuneated, emarginate, pilose; pedicels length of petioles, with 2 bracteas at the top; styles very short; filaments with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers white, with the bottom hardly yellow. This species is very like the preceding.

Wedge-leaved Wood-sorrel. Fl. April, May. Clt. 1793. Pl. decumbent.

200 O. PUSI'LLA (Jacq. ox. no. 57. t. 42.) stem short, naked at the base, somewhat declinate; leaflets linear-cuneated, emarginate, smooth; pedicels length of petioles, with 2 bracteas at the top; styles intermediate; filaments smooth. ♃. G. Native of the Cape of Good Hope. Plant hardly a finger in length. Flowers of a pale flesh-colour.

Small Wood-sorrel. Fl. Jan. Sept. Clt. 1823. Pl. declinate.

201 O. LINEA'RIS (Jacq. ox. no. 47. t. 32.) stem declinate, naked at the base, and is as well as the leaves puberulous; leaflets linear, emarginate; pedicels shorter than the petioles, with 2 bracteas at the top; styles very long. ♃. G. Native of the Cape of Good Hope. Corolla violet. Filaments smooth, toothless.

Linear-leaved Wood-sorrel. Fl. Sept. Nov. Clt. 1795. Pl. declinate.

202 O. RECLINA'TA (Jacq. ox. no. 49. t. 34.) stem reclinate, naked at the base, branched a little; leaflets linear, somewhat cuneated, emarginate; pedicels longer than the petioles, with 2 bracteas above the middle, and are as well as the petioles puberulous; styles intermediate. ♃. G. Native of the Cape of Good Hope. Flowers of a pale vermilion-colour. Filaments a little hairy.

Reclinate-stemmed Wood-sorrel. Pl. decumbent.

203 O. GRA'CILIS (Jacq. ox. no. 48. t. 33.) stem declinate, naked at the base, and is as well as the leaves smooth; leaflets linear, rather callose at the top; pedicels longer than the petioles, with 2 bracteas above the middle; styles very long, and are as well as the filaments covered with glandular hairs. ♃. G. Native of the Cape of Good Hope. Flowers of a pale vermilion-colour. O. versícolor, var. γ, Willd. spec. 2. p. 792.

Slender Wood-sorrel. Pl. decumbent.

204 O. MINIA'TA (Jacq. ox. no. 50. t. 35.) stem declinate, naked at the base, and is as well as the leaves smooth; leaflets linear, a little emarginate at the apex; pedicels a little longer than the leaves, with 2 bracteas above the middle. ♃. G. Native of the Cape of Good Hope. Flowers of a vermilion-colour. Styles very short. Filaments toothless, smooth. O. elongàta, Willd. spec. 2. p. 793.

Vermilion-flowered Wood-sorrel. Fl. Jan. Sept. Clt. 1819. Pl. prostrate.

205 O. MACROMÍSCHOS (Spreng. syst. app. p. 185.) stem declinate, naked at the base, and is as well as the leaves hoary-villous; leaflets linear, somewhat emarginate; peduncles very long, at length refracted; styles very short. ♃. G. Native of the Cape of Good Hope.

Long-pedicelled Wood-sorrel. Pl. prostrate.

§ 10. *Adenophýllæ* (from αδην, *aden*, a gland, and φυλλον, *phyllon*, a leaf; leaves furnished with glands at the tip). *D. C. prod.* 1. *p.* 701. *Stems sometimes sparingly leafy, sometimes very leafy at the top, sometimes almost wanting. Leaves stalked, with 3-5 linear leaflets, bearing at the top beneath red callose glands. Peduncles* 1*-flowered.*

206 O. MINU'TA (Thunb. diss. no. 2. t. 2. f. 3.) stemless;

leaflets 3, linear-lanceolate, acute; scape longer than the leaves; styles very long. ⊙. H. Native of the Cape of Good Hope. Jacq. ox. no. 44. t. 79. f. 2. The leaves are probably glandular. Flowers white.

Minute Wood-sorrel. Pl. $\frac{1}{8}$ foot.

207 O. GLA'BRA (Thunb. ox. no. 17. t. 2. f. 1.) stem very short, naked at the base, erect; leaflets 3, linear-wedge-shaped, emarginate, ciliated, with many glands beneath; peduncles longer than the leaves; styles very long. 4. G. Native of the Cape of Good Hope. Jacq. ox. no. 58. t. 76. f. 3. Flowers purple.

Smooth Wood-sorrel. Fl. May, June. Clt. 1795. Pl. $\frac{1}{8}$ ft.

208 O. VERSÍCOLOR (Lin. spec. 622.) stem declinate, naked at the base; leaflets 3, linear, emarginate, with 2 red glands beneath; peduncles longer than the leaves; styles very long, and are as well as the filaments beset with glandular hairs. 4. G. Native of the Cape of Good Hope. Jacq. ox. no. 51. t. 36. Curt. bot. mag. t. 155. Smith, icon. rar. 7. t. 7. Corolla white inside and reddish outside. Filaments toothed.

Various-coloured-flowered Wood-sorrel. Fl. Jan. Mar. Clt. 1774. Pl. $\frac{1}{4}$ foot.

209 O. SYLVE'STRIS (Jacq. ox. t. 77. f. 4.) stem declinate, naked at the base; leaflets 3, linear, emarginate, with 2 red glands beneath; peduncles length of leaves; styles very long, hairy; filaments toothless, smooth. 4. G. Native of the Cape of Good Hope. Corolla white inside and red outside.

Wild Wood-sorrel. Fl. Jan. Mar. Clt.? Pl. declinate.

210 O. ELONGA'TA (Jacq. ox. no. 52. t. 37.) stem declinate, naked at the base; leaflets 3, linear, emarginate, with 2 red glands at the top of each; peduncles longer than the leaves; styles very short. 4. G. Native of the Cape of Good Hope. Petals white, hardly edged with red, a little emarginated at the top. Sepals with two red glands at the tip beneath.

Var. β, *amœ'na* (Jacq. hort. schoenbr. t. 206.) sepals blunt; petals obtuse, of a rose-purple colour.

Elongated Wood-sorrel. Fl. Sept. Oct. Clt. 1791. Pl. prostrate.

211 O. TENUIFÒLIA (Jacq. ox. no. 53. t. 38.) stem erect, sparingly leafy; leaflets 3, linear, emarginate, with many red glands beneath; peduncles longer than the leaves; styles very short; inner filaments with glandular hairs. 4. G. Native of the Cape of Good Hope. Lodd. bot. cab. t. 712. Corolla white, with reddish edges on the outside.

Fine-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1790. Pl. $\frac{1}{2}$ ft.

212 O. POLYPHY'LLA (Jacq. ox. no. 59. t. 39.) stem erect, a little branched, leafy at top; leaflets 3, linear, emarginate, with 2 red glands beneath; peduncles longer than the leaves; styles intermediate, and are as well as filaments beset with glandular hairs. 4. G. Native of the Cape of Good Hope. Corolla pale-red. O. versícolor, Jacq. icon. rar. t. 473.—Burm. afr. t. 27. f. 1.

Many-leaved Wood-sorrel. Fl. Jan. Sept. Clt. 1791. Pl. $\frac{1}{2}$ ft.

213 O. FILIFÒLIA (Jacq. hort. schoenbr. 3. t. 273.) stem declinate, naked at the base; leaflets 3, linear, entire at the apex, with callose glands; peduncles longer than the leaves; styles very long, and are as well as the inner filaments beset with glandular hairs. 4. G. Native of the Cape of Good Hope. Corolla rose-coloured.

Thread-leaved Wood-sorrel. Fl. Jan. Sept. Clt. 1822. Pl. prostrate.

214 O. PENTAPHY'LLA (Sims, bot. mag. t. 1549.) stem erectish, naked below; leaflets 5, linear, rather entire at the apex, with 1 or 2 callose glands beneath; peduncles longer than the leaves; styles intermediate. 4. G. Native of the Cape of Good Hope. O. digitàta, Poir. suppl. 4. p. 254. exclusive of the synonyms and var. β. Flowers rose-flesh-coloured. Petioles reddish and stem-clasping at the base.

Five-leaved Wood-sorrel. Fl. Feb. Nov. Clt. 1800. Pl. $\frac{1}{2}$ ft.

§ 11. *Palmatifòlia* (from *palmatus*, palmate, and *folium*, a leaf; leaves palmate). *D. C. prod.* 1. *p.* 702. *Stemless and with a short stipe, naked at the base. Leaves stalked, palmately or peltately divided into* 5-15 *leaflets, destitute of glands. Scapes* 1-*flowered.*

215 O. MALLOBO'LBA (Cav. icon. 4. p. 64. t. 393. f. 2.) stemless; bulb woolly; leaflets 5, ovate; scape bearing 2 awl-shaped bracteas in the middle. 4. G. Native of Buenos Ayres. Plant very small. Bulb clothed with beautiful rufous wool. Flowers yellow. Styles intermediate, villous.

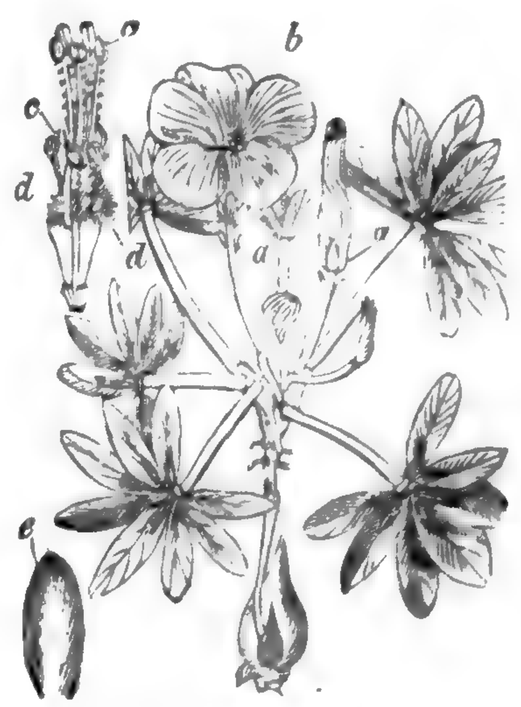
Soft-bulbed Wood-sorrel. Pl. $\frac{1}{8}$ foot.

216 O. COMMERSÒNII (Pers. ench. 1. p. 519.) stem very short, leafy; leaflets 6, ovate, clothed with close-pressed villi; scapes longer than the leaves, with 2 bracteas in the middle. 4. G. Native of Monte Video. O. sexenàta, Savign. in Lam. dict. 4. p. 687. Flowers yellow.

Commerson's Wood-sorrel. Pl. $\frac{1}{4}$ foot.

217 O. LUPINIFÒLIA (Jacq. ox. no. 92. t. 72.) almost stemless; leaflets 7-8, lanceolate, acutish, smooth, spotted at the base; petioles compressed; scape length of petiole; styles very short; filaments with glandular hairs. 4. G. Native of the Cape of Good Hope. Flowers yellow.

FIG. 122.



Lupine-leaved Wood-sorrel. Fl. Oct. Nov. Clt. 1775. Pl. $\frac{1}{4}$ ft.

218 O. FLA'VA (Lin. spec. 621.) stem erect, short, naked at the base; leaflets 6-7, smooth, linear, channelled, acute; peduncles rather longer than the petioles; styles very short; filaments with glandular hairs. 4. G. Native of the Cape of Good Hope. Jacq. ox. no. 93. t. 73. Burm. afr. t. 27. f. 4. Ker. bot. reg. t. 117. Flowers yellow.

Yellow-flowered Wood-sorrel. Fl. March, April. Clt. 1775. Pl. $\frac{1}{4}$ foot.

219 O. PECTINA'TA (Jacq. ox. no. 94. t. 74.) almost stemless; leaflets 7, smooth, linear-lanceolate, obtuse; peduncles length of leaves; sepals close-pressed; styles very long, and are, as well as the filaments, beset with glandular hairs. 4. G. Native of the Cape of Good Hope.—Burm. afr. t. 30. f. 1. Flowers yellow.

Pectinated-leaved Wood-sorrel. Fl. Sept. Nov. Clt. 1790. Pl. $\frac{1}{4}$ foot.

220 O. FLABELLIFÒLIA (Jacq. ox. no. 94. t. 74.) almost stemless; leaflets 6-7-9, smooth, linear, emarginate; peduncles hardly longer than the petioles; sepals reflexed at the apex; styles intermediate, and are, as well as the inner filaments, beset with glandular hairs. 4. G. Native of the Cape of Good Hope. Flowers yellow.

Fan-leaved Wood-sorrel. Fl. Sep. Nov. Clt. 1789. Pl. $\frac{1}{4}$ ft.

221 O. TOMENTÒSA (Lin. fil. suppl. 244.) almost stemless; leaflets 9-19, clothed with pubescent down on both surfaces, lanceolate-cuneated, emarginate; scapes length of petioles; styles very long. 4. G. Native of the Cape of Good Hope.—Jacq. ox. no. 96. t. 81.—Plum. t. 350. f. 3. Corolla whitish.

Tomentose Wood-sorrel. Fl. April, May. Clt. 1791. Pl. $\frac{1}{4}$ ft.

222 O. ENNEAPHY'LLA (Cav. icon. 5. p. 7. t. 411.) stipe creeping at the base, covered with interrupted scales; leaflets 9, smooth, obcordate, wedge-shaped, almost bifid; peduncles length of the leaves; styles very long. 4. G. Native of the Falk-

land Islands. Corolla rose-coloured, with yellow lines. Styles capitate and pencil-formed, like the following.

Nine-leaved Wood-sorrel. Pl. $\frac{1}{4}$ foot.

223 O. LACINIA'TA (Cav. icon. 5. p. 7. t. 412.) stipe creeping at the base, covered with scales; leaflets 11-13, linear, acute, smooth; scapes shorter than the petioles; styles very long. ♃. S. Native of South America. Corolla violaceous. This and the preceding species have creeping scaly stipes.

Jagged Wood-sorrel. Pl. $\frac{1}{4}$ foot.

Cult. *O'xalis* is a curious and beautiful genus. The hardy kinds require no care. If the roots are planted in a shady border, they will thrive and multiply. If the seeds of annual species are sown in the open border in spring, the plants will rise freely, and if they are permitted to scatter their seeds, there will be a plentiful supply of plants. The greenhouse kinds are mostly bulbs from the Cape of Good Hope; a mixture of sand, loam, and peat is best suited for these; they require no water after they have done flowering, until they begin to grow afresh, these are increased by offsets from the bulbs, and by seeds. The most of them may be grown in a frame, but care should be taken that they are protected from the frost during winter. The stove species should be grown in the same kind of soil recommended for the greenhouse kinds; the shrubby kinds of these may be increased by cuttings or seeds; the herbaceous fibrous-rooted ones by dividing the plants at the roots or by seeds; the bulbous-rooted ones by offsets from the roots. But some of the frame and greenhouse species are fibrous-rooted, therefore they should also be increased by dividing the plants at the root.

IV. LEDOCA'RPUM (from ληδον, *ledon*, cistus, and καρπος, *karpos*, a fruit; resemblance in fruit to that of a *Cistus*). Desf. mem. mus. 4. p. 250. D. C. prod. 1. p. 702.

Lin. syst. *Decándria*, *Pentagýnia*. Calyx permanent, 5-sepalled, girded by 10 linear bracteas. Petals 5. Stamens 10, 5 alternate ones shortest; filaments free, permanent. Ovary roundish. Stigmas 5, thickened. Capsules 5-valved, 5-celled, many-seeded.—Small branching shrubs, with opposite, ternate, grey, sessile leaves, linear, awl-shaped leaflets, and solitary, terminal, large, yellow flowers.

1 L. Chiloe'nse (Desf. mem. mus. 4. p. 250. t. 13.) canescent; leaves 3-parted, with linear segments; pedicels short. ♄. F. Native of Chiloe. Balbìsia verticillàta, Cav. icon. ined. in bibl. Balb. and annal. no. 19. p. 61.

Chiloe Ledocarpum. Shrub 2 feet.

2 L. pedunculà're (Lindl. bot. reg. 1392.) canescent; leaves 3-parted; leaflets linear; pedicels long. ♄. F. Native of Chili. Stamens nearly equal in length.

Long-*peduncled* Ledocarpum. Fl. July, Aug. Clt. 1825. Shrub 1 foot.

Cult. These pretty little shrubs will thrive in a mixture of loam and peat; and ripened cuttings will root in sand under a hand-glass, in a moderate heat.

Order LVIII. ZYGOPHY'LLEÆ (plants agreeing with *Zygophýllum* in important characters). R. Br. gen. rem. p. 13. D. C. prod. 1. p. 703.

Calyx of 5 distinct sepals, or hardly connected at the base. Petals 5, alternating with the sepals, and inserted into the receptacle. Stamens 10, distinct, hypogynous, 5 opposite the petals and 5 opposite the sepals. Ovary 1, 5-celled. Styles 5, joined into one, but sometimes they are distinct at the top. Carpels 5, constantly more or less adnate to each other, and to the central axis; cells opening at the upper angle, usually many-seeded, but sometimes 1-seeded, never cocculiferous nor arilliferous. Seeds albuminous, or exalbuminous. Embryo straight, with a superior radicle and leafy cotyledons.—Herbs, shrubs, and trees variable in habit. Leaves furnished with stipulas at the base, usually compound, in the *Zygophýlleæ veræ* opposite, but alternate in *Zygophýlleæ spuriæ*.—This order is intermediate between *Oxalídeæ* and *Rutàceæ*. It is distinguished from the former in the styles being joined into one, never free, and in the seeds being without aril, as well as in the leaves being opposite, and furnished with stipulas; and from the latter it differs in the structure of the carpels, but especially in the absence of elastic cocculum, which is truly notable in *Rutàceæ veræ*. At first sight it is distinguished from both in the twin stipulas at the base of the petioles. Many of the species of this order bear beautiful flowers, and enliven many an arid waste within the tropics, particularly the *Tríbulus cistoìdes*. The *Zygophýllum Fabàgo* is employed as an anthelmintic, but it is in *Guaíacum* that the great medical virtues of the order are to be found; it has been found to contain a particular substance, which is called Guaiacine, differing both from resin and gum.

Synopsis of the genera.

§ 1. *Zygophýlleæ veræ. Leaves opposite.*

1 Trí'bulus. Carpels 5, adnate to the triangular axis, indehiscent, 1-celled, 1-seeded, beset with prickles on the outside. Style none. Sepals and petals 5. Stamens 10.

2 Ehrenbe'rgia. This genus differs from *Tríbulus* in the capsule being of 10 1-seeded, indehiscent, crested carpels.

3 Fagònia. Capsule roundish, 5-angled, 5-celled; cells 2-valved, 1-seeded. Stigma 1. Sepals and petals 5. Stamens 10.

4 La'rrea. Capsule of 5 1-celled, 1-seeded carpels, closely connected. Style pentagonal. Filaments with an appendage at the base inside. Sepals and petals 5. Stamens 10.

5 Roepe'ra. Sepals and petals 4. Stamens 8. Capsule 4-angled, with the angles expanded into wings, 4-celled, 3 of which are usually abortive. Seed solitary. Style 4-furrowed.

6 Zygophy'llum. Capsule oblong, pentagonal, 5-celled, 5-valved; cells many-seeded. Style 1. Filaments with an appendage at the base inside. Sepals and petals 5. Stamens 10.

7 Guaíacum. Capsule substipitate, 5-angled, 5-celled, or only 2-3-celled from abortion. Seeds solitary in the cells. Style 1. Sepals and petals 5. Stamens 10.

8 Porlie'ria. Sepals and petals 4. Stamens 8. Style 1, crowned by a peltate stigma. Carpels 4, connate, drupaceous.

§ 2. *Zygophýlleæ spuriæ. Leaves alternate.*

9 Chitònia. Calyx 4-parted. Petals 4. Stamens 8. Style 1, crowned by a peltate stigma. Capsule 4-valved, 4-celled; valves keeled. Seeds 2 in each cell.

10 Bieberste'inia. Petals and sepals 5. Stamens 10. Styles 5, joined. Carpels 5, connate at the base, 1-seeded, arillate inside.

11 Trichanthe'ra. Sepals and petals 5. Stamens 5. Styles numerous. Capsule pentagonal, 5-celled, 5-valved, many-seeded,

12 Anatròpa. Sepals and petals 4. Stamens 4. Style short, clavate. Capsule quadrangular, depressed, 4-valved, 4-celled; cells 4-5-seeded.

13 Melia'nthus. Calyx 5-cleft, unequal; lower segment drawn out into a hollow gibbosity. Petals 5. Stamens 4, 2 of which are connate. Style 1, crowned by a 4-cleft stigma. Capsule 4-lobed, 4-celled; cells 1-seeded from abortion.

14 Balanìtes. Calyx 5-parted. Petals 5. Stamens 10. Ovary 5-celled, 5-seeded. Drupe 1-celled and 1-seeded from abortion.

§ 1. *Zygophýlleæ vèræ. D. C. prod.* 1. *p.* 703. *Leaves opposite.*

I. TRI'BULUS (from τρεις, *treis*, three, and βολος, *bolos*, a point; each carpel is armed with 3, sometimes 4, prickly points). Tourn. inst. t. 141. Lin. gen. no. 532. D.C. prod. 1. p. 703. Lin. syst. *Decándria, Monogýnia.* Calyx deeply 5-parted, usually permanent. Petals 5, spreading. Stamens 10. Style very short, with a broad stigma. Carpels 4-5, adhering to the axis, triangular, indehiscent, hard, covered on the outside with tubercles or spines, transversely many-celled inside, rarely 1-celled, with a solitary, horizontal, exalbuminous seed in each cell. Cotyledons thickish (Gært. fruct. 1. t. 69.)—Diffuse trailing herbs, with abruptly-pinnate leaves and membranous stipulas. Pedicels axillary, 1-flowered, solitary. Flowers usually yellow, rarely white.

1 T. cistoìdes (Lin. spec. 554.) leaves with 8 pairs of rather equal leaflets, which are silky beneath; pedicels length of petioles. ♃. S. Native of South America and the West Indies, in dry, sandy, barren places, also of the island of O Wahu. Jacq. hort. schoenb. t. 103. Ker. bot. reg.t. 791.—Herm. par. t. 136.—Pluk. phyt. t. 67. f. 4. The capsule, according to Kunth, is of 5 carpels, each divided into 2 or 3 transverse cells, armed outside with sharp spines. This is a beautiful species, with large yellow flowers, resembling those of some species of *Heliánthemum*. It is very common about Kingston in Jamaica, and is planted in many gardens there for the sake of its flowers, which are very shewy, and have an agreeable smell. Fowls are observed to feed much upon them, and it is thought to heighten their flavour, as well as to contribute to fatten them. Hence the plant is called *Turkey-blossom*.

Rock-rose-like-flowered Caltrops. Fl. July, Nov. Clt. 1752. Pl. trailing.

2 T. a'lbus (Poir. dict. 8. p. 44.) leaves with usually 8 pairs of rather equal leaflets, which are villous on both surfaces; pedicels shorter than the petioles. ♃. S. Native of Guinea, very common at Cape Coast, Acra, and Whidah, in sandy, barren places. Petals whitish, hardly longer than the calyx.

White-flowered Caltrops. Fl. Ju. Aug. Clt. 1826. Pl. trailing.

3 T. terre'stris (Lin. spec. 554.) leaves with usually 6 pairs of rather equal leaflets; pedicels shorter than the petioles; carpels 4-horned. ⊙. H. Native of the south of Europe, Barbary, Senegal, and the Mauritius, in barren, sandy places. Leaves villous and almost smooth. Lam. ill. t. 346. f. 1. Schkuhr. handb. 1. t. 115.—Lob. icon. 2. t. 84.—Mor. hist. sect. 2. t. 8. f. 9.—Barrel. icon. t. 558. Capsule of 5 carpels, each having 2 or 3 transverse cells. Flowers yellow. This is a very common species in the south of Europe, in arable land, and is troublesome to cattle by the prickly fruit running into their feet. The French name of this plant is *La Croix de Chevalier*. Our English appellation of Caltrops, is taken from the form of the fruit, which resembles the machines which are cast in the way to obstruct an enemy's cavalry.

Earth or Common Caltrops. Fl. Ju. Jul. Clt. 1596. Pl. tr.

4 T. subine'rmis (Fisch. cat. hort. gor. 1808. p. 94.) leaves usually with 6 pairs of rather equal leaflets, which are hairy on both surfaces; pedicels shorter than the petioles; capsules armless, but tubercled. ⊙. H. Native of Thibet. Flowers yellow.

Unarmed-capsuled Caltrops. Fl. June, July. Clt. 1820. Pl. trailing.

5 T. ala'tus (Del. ill. p. 44.) leaves with 5 or 6 pairs of rather equal leaflets, which are clothed on both surfaces with close-pressed villi; pedicels very short; capsules without horns but with winged margins. ⊙. H. Native of Egypt, in sandy, barren places. T. pentándrus, Forsk. descr. 38. which is said to have only 5 or 6 stamens. Capsule of 5 carpels, each having 2 transverse cells. Flowers yellow.

Winged-fruited Caltrops. Pl. trailing.

6 T. lanuginòsus (Lin. spec. 553.) leaves with 5 or 6 pairs of rather equal leaflets, which are covered with close-pressed pubescence; pedicels shorter than the leaves; carpels 2-horned. ⊙. S. Native of Ceylon.—Burm. zeyl. 265. t. 106. f. 1. Flowers yellow. Fruit angular, hairy.

Woolly Caltrops. Fl. June, July. Clt. 1822. Pl. trailing.

7 T. ma'ximus (Lin. spec. 553.) leaves of 3 or 4 pairs of leaflets, outer ones largest; pedicels shorter than the leaves; carpels unarmed, connected together into a 10-ribbed, 10-seeded fruit. ⊙. S. Native of Jamaica and St. Thomas, in sandy, arid places. Jacq. icon. rar. t. 462. Lam. ill. t. 346. f. 2. Capsule of 10 1-celled carpels. The flowers are pale yellow, and have an agreeable odour.

Greatest Caltrops. Fl. June, July. Clt. 1739. Pl. trailing.

8 T. trijuga'tus (Nutt. gen. amer. 1. p. 277.) leaves with 3 pairs of leaflets, outer ones largest; pedicels? carpels crested and muricated, 1-seeded. ⊙. H. Native of North America in Georgia about Savannah. Flowers yellow.

Three-paired-leaved Caltrops. Fl. June, July. Clt. 1819. Pl. trailing.

9 T. pube'scens; pubescent; leaves with 3 pairs of leaflets. ⊙. S. Native of Acra in Guinea. Flowers small, cream-coloured. Capsules prickly.

Pubescent Caltrops. Fl. June, July. Clt. 1822. Pl. trailing.

Cult. The annual species of this genus require to be sown in a moderate hot-bed in spring, and about the middle of May the plants may be planted out in a warm sheltered situation in the open border, where they will ripen their seeds. The perennial species will grow very well in a mixture of loam and peat, and they may be either increased by cuttings or seeds.

II. EHRENBE'RGIA (in honour of C. G. Ehrenberg, a traveller in Egypt, Lybia, and Arabia, author of Sylva Mycologicæ Berolinensis, and other works). Mart. fl. bras. 1. p. 72. t. 163.

Lin. syst. *Decándria, Monogýnia.* Calyx of 5-6 sepals. Petals 5-6, spreading. Stamens 10-12, alternate ones inserted in the claws of the petals; the others in the receptacle. Carpels usually 10, 1-seeded, disposed in a whorl around the central axis, crested on the back.

1 E. tribuloìdes (Mart. fl. bras. l. c.). ⊙. S. Native of Brazil. Tríbulus Brasiliénsis, Spreng. syst. app. p. 343. A branching, diffuse, pubescent herb, with abruptly-pinnate leaves, having 5-6 pairs of opposite or alternate leaflets, axillary, 1-flowered pedicels, bearing coppery, vermilion-coloured flowers.

Tribulus-like Ehrenbergia. Pl. trailing.

Cult. The seeds of this plant may be raised on a hot-bed, and when the plants have grown 2 or 3 inches, they may be planted out in the open border in a sheltered situation, in the month of May.

III. FAGO'NIA (in honour of M. Fagon, archiater to Louis XIV. who was a great patron of botany). Tourn. inst. t. 141. Lin. gen. no. 531. D. C. prod. 1. p. 704. Andr. Juss. ann. mus. 12. p. 453. t. 14. no. 2.

Lin. syst. *Decándria, Monogýnia.* Calyx deeply 5-parted, deciduous. Petals 5, unguiculate. Stamens 10; filaments naked at the base. Stigma 1, acute, 5-furrowed. Ovary acutely 5-angled, 5-celled, acuminated; cells 2-valved, 1-seeded. Embryo straight in the axis of a fleshy albumen (Gært. fruct. 2. p. 153. t. 113.).—Herbs or subshrubs, with simple or ternate leaves, usually with spiny twin stipulas at their base, and axillary, solitary, 1-flowered pedicels. Flowers purple or violet, seldom yellowish.

§ 1. *Leaves trifoliate.*

1 F. Cre'tica (Lin. spec. 553.) leaflets linear-lanceolate, smooth; stipulas spiny; ovaries smooth. ♄. G. Native of Candia, Mauritania, and Spain, on mountains, in places exposed to the sun. Lam. ill. t. 346. Curt. bot. mag. t. 241. F. erécta, Mill. dict. no. 1. Stem procumbent, rarely erect. Flowers purple, with yellow stamens.

Cretan Fagonia. Fl. June, Aug. Clt. 1739. Shrub 1 foot or trailing.

2 F. Hispa'nica (Lin. spec. 553.) leaflets linear-lanceolate; stipulas not spiny. ♂. F. Native of Spain. Mill. dict. no. 2. This is a doubtful species; it is probably only a variety of the preceding. Flowers purple, with yellow stamens.

Spanish Fagonia. Fl. June, Aug. Clt.? Pl. trailing.

3 F. Ara'bica (Lin. spec. 553.) leaflets linear, mucronate, convex beneath; stipulas spiny, elongated; ovaries villous. ♄. G. Native of Barbary, Egypt, and Arabia. Stem much branched. Spines very long. Flowers purple or violet.

Arabian Fagonia. Fl. June, Aug. Clt. 1759. Sh. 1½ foot.

4 F. glutino'sa (Delil. fl. ægyp. 86. t. 28. f. 2.) leaflets obovate, mucronate; stipulas spiny, shorter than the petioles; stems prostrate, dichotomous, and are, as well as the fruit, clammy. ♄. G. Native of the North of Africa in the desert of Cairo. F. scàbra, Forsk. descr. 88.? Flowers purple or violet.

Clammy Fagonia. Fl. May, Aug. Clt. 1820. Sh. prostrate.

5 F. mo'llis (Delil. fl. egyp. 76. t. 27. f. 2.) leaflets oval, mucronate, villous; stipulas spiny, length of petioles; stem shrubby, diffuse, villous at the apex; fruit hispid. ♄. G. Native along with the preceding. Flowers purplish.

Soft Fagonia. Shrub diffuse.

6 F. latifo'lia (Delil. fl. egyp. 86. t. 28. f. 3.) lateral leaflets lanceolate, acute, middle one larger and obovately orbicular; stipulas small, spiny. ⊙. G. Native of Egypt, near Cairo. Flowers purplish or violet.

Broad-leaved Fagonia. Pl. trailing.

§ 2. *Leaves simple.*

7 F. Mysore'nsis (Roth. nov. spec. 215.) leaves simple, linear, ending in a cartilaginous point; stipulas spiny, subulate, rough, longer than the leaves; pedicels twice as short as the leaves. ⊙? S. Native of Mysore in the East Indies. Flowers yellow?

Mysore Fagonia. Pl. ½ foot.

8 F. Pe'rsica (D. C. prod. 1. p. 704.) leaves simple, oval; stipulas spiny, awl-shaped, shorter than the leaves; pedicels rather longer than the leaves. ⊙. H. Native of Persia. F. I'ndica, Burm. fl. ind. p. 102. t. 34. f. 1. Flowers yellow.

Persian Fagonia. Pl. ½ foot.

9 F. Olive'rii (D. C. prod. 1. p. 704.) leaves simple, oblong-linear; stipulas spiny, hardly the length of the leaves; pedicels very short; fruit pubescent. ♄. G. Native between Bagdad and Aleppo. This species has the habit of *F. Pérsica*, but the spines are longer and the pedicels very short. Flowers yellow.

Olivier's Fagonia. Shrub 1 foot.

10 F. Bruguie'ri (D. C. prod. 1. p. 704.) leaves simple, oblong, pointed; stipulas spiny, longer than the leaves; branches tetragonal; pedicels very short; fruit pubescent. ♃. G. Native between Bagdad and Aleppo. Root woody. Stem branched from the base, hardly a finger high. Flowers probably yellow.

Bruguier's Fagonia. Pl. ¼ foot.

Cult. Fagònia is a genus of pretty little shrubby looking plants. They are only to be increased by seeds, which should be sown in pots in autumn, in a light rich soil; these should be placed under a frame in winter; in spring several of the plants may be potted off in separate pots and placed among the greenhouse plants, others may be planted out in the open border, in a warm sheltered situation, 10 inches apart; thus they will flower early and ripe seeds may be obtained. The shrubby species hardly last more than three years, therefore care should be taken to preserve their seeds.

IV. LA'RREA (in honour of John Anthony de Larrea, a Spanish promoter of the sciences). Cav. icon. 6. p. 36. D. C. prod. 1. p. 705. Andr. Juss. ann. du mus. 12. p. 456. t. 15. no. 5.

Lin. syst. *Decándria, Monogýnia.* Calyx deeply 5-parted, unequal. Petals 5, unguiculate. Stamens 10; filaments scaly at the base; anthers cordate. Ovary on a short stipe, 5-furrowed, 5-celled. Style 1, pentagonal, acute at apex, at length 5-cleft. Capsule of 5 1-celled carpels, constantly joined together, with a solitary seed in each cell from abortion. Albumen dense. Embryo straight.—Small shrubs with alternating distich branches, and pinnate, 2-lobed or 2-parted leaves, with 2 short, acute stipulas at their base. Pedicels solitary, axillary, 1-flowered. Flowers yellow.

1 L. ni'tida (Cav. icon. 6. t. 559.) leaves impari-pinnate, smooth, clammy, with 5 or 7 pairs of approximate linear leaflets. ♄. G. Native of Buenos Ayres near Mendoza. Ovary villous.

Shining-leaved Larrea. Fl. June, July. Clt. 1823. Sh. 8 ft.

2 L. divarica'ta (Cav. icon. 6. t. 560. f. 1.) leaves sessile, 2-lobed, villous; lobes deep, lanceolate, divaricate. ♄. G. Native along with the preceding. Ovary and fruit beset with long hairs.

Divaricate-lobed Larrea. Shrub 6 feet.

3 L. cuneifo'lia (Cav. icon. 6. t. 560. f. 2). leaves almost sessile, villous, cuneated, 2-lobed at the apex, with a prominent bristle between the lobes. ♄. G. Native along with the two preceding.

Wedge-leaved Larrea. Shrub 6 feet.

Cult. These pretty shrubs will thrive well in a mixture of loam, peat, and sand; and young cuttings, planted under a bell-glass, will strike root freely.

V. ROEPE'RA (J. Roeper, author of a monograph of German and Hungarian Euphorbias). Andr. Juss. in mem. mus. 12. p. 454. t. 15. no. 3.

Lin. syst. *Octándria Monogýnia.* Calyx permanent, deeply 4-parted. Petals 4, unguiculate. Stamens 8; filaments naked at the base. Ovary with 4 scales at the base, 4-ribbed, 4-celled. Style and stigma 4-furrowed. Capsule 4-angled, with the angles expanded into reticulately-veined wings, 4-celled, 3 of which are usually abortive. Seed solitary from abortion, ovate, acute, compressed, scabrous. Embryo slender.—Shrubs with twin leaflets and stipulas. Peduncles solitary or twin, axillary, 1-flowered. Flowers pale-yellow. This genus has the habit of *Zygophýllum.*

1 R. Billardie'rii (Andr. Juss. mem. mus. 12. p. 454.) leaves bifoliate, stalked; leaflets oblong, fleshy, flat; stem de-

cumbent. ♄. G. Native of New Holland. Zygophýllum Billardièrii, D. C. prod. 1. p. 705. Sepals reflexed. Flowers small, yellow.

La Billardier's Roepera. Shrub decumbent.

2 R. FRUTICULÒSA (Andr. Juss. l. c.) leaves bifoliate, stalked; leaflets oblong, fleshy, flat: pedicels very short; stem shrubby, erect. ♄. G. Native of New Holland, on the eastern coast. Zygophýllum fruticulòsum, D. C. prod. 1. p. 707. Flowers small, yellow.

Shrubby Roepera. Fl. July, Aug. Clt. 1820. Shrub 3 ft.

Cult. These pretty little shrubs will grow freely in a mixture of loam, peat, and sand; and young cuttings will strike root freely if planted in a pot of sand, under a hand-glass.

VI. ZYGOPHY'LLUM (from ζυγος, *zygos*, a yoke, and φυλλον, *phyllon*, a leaf; the leaves are conjugate). Lin. gen. no. 530. D. C. prod. 1. p. 705. Andr. Juss. mem. mus. 12. p. 455. t. 15. no. 4.—Fabàgo, Tourn. inst. t. 230.

LIN. SYST. *Decándria, Monogýnia.* Calyx unequal, deeply 5-parted. Petals 5, unguiculate. Stamens 10; filaments furnished with a scaly appendage at the base on their inside. Ovary seated on a short gynophore, which is sometimes convex or almost wanting, but usually concave or disk-like, glandular, hypogynous. Style 1, tapering into a minute stigma. Capsule oblong, 5-sided, 5-celled, 5-valved; valves at length separating. Seeds somewhat reniform, many in each cell, disposed in 2 rows, fixed to the inner angle, without albumen (Gært. fr. 2. t. 112.). Embryo slender.—Herbs and shrubs, with fleshy, simple, or binate, rarely pinnate leaves. Stipulas twin, membranous. Pedicels axillary, solitary, 1-flowered. Flowers red, white, but for the most part yellow, with a dark base.

* *Leaves simple.*

1 Z. SI'MPLEX (Lin. mant. 68.) leaves simple, sessile, cylindrical. ☉. F. Native of Egypt and Arabia in deserts, frequent. Z. portulacoìdes, Forsk. descr. 88. with a figure, t. 12. B. Flowers yellow. Capsules few-seeded. Scales of stamens 2-parted. This plant is called *Carmal* in Arabia, and is esteemed by the Arabs very good for removing specks in the eyes, for which purpose the bruised leaves are applied mixed with water.

Simple-leaved Bean-caper. Fl. July, Aug. Clt. 1825. Pl. trailing.

2 Z. CORDIFÒLIUM (Lin. fil. suppl. 232.) leaves simple, sessile, roundish, somewhat cordate. ♄. G. Native of the Cape of Good Hope. Ait. hort. kew. 2. p. 60. Flowers orange-yellow.

Heart-leaved Bean-caper. Fl. Oct. Clt. 1774. Shrub 2 ft.

3 Z. SPATULA'TUM; stem prostrate; leaves simple, spatulate, sessile; flowers sessile. ♃. S. Native of the Cape Verd Islands, particularly in St. Jago, in the date plantation below the Fort. Flowers small, yellow.

Spatulate-leaved Bean-caper. Fl. June, July. Clt. 1824. Pl. trailing.

** *Leaves bifoliate; leaflets flat, smooth.*

4 Z. FABA'GO (Lin. spec. 551.) leaves stalked; leaflets obovate; pedicels erect; calyxes smooth; petals undivided. ♃. H. Native of Syria, Tauria, and Mauritania. Lam. ill. t. 345. f. 1. Petals yellow, but of copper brick-colour at the base. Root thick, fleshy, striking deep into the ground.—Besl. eys. æst. 10. t. 1. f. 1.—Park. theatr. 1024. 5. icon. 1023. 5.

Common *Bean*-caper. Fl. July, Sept. Pl. 1 to 4 feet.

5 Z. FŒ'TIDUM (Schrad. et Wendl. sert. han. p. 17. t. 19.) leaves stalked; leaflets obovate; flowers nodding; calyx downy; petals reflexed, cut. ♄. G. Native of the Cape of Good Hope. Petals orange-yellow, each with a purple spot at the base.

Var. β, *insuàve* (Curt. bot. mag. t. 372.) petals oblong, with a heart-shaped, brown spot at the base of each; fruit bearing pedicels deflexed; petioles with a bristle at the apex. ♄. G. Native of the Cape of Good Hope.

Fetid Bean-caper. Fl. June, Aug. Clt. 1790. Shrub 4 ft.

6 Z. DECU'MBENS (Delil. fl. egyp. 77. t. 27. f. 3.) leaves stalked; leaflets oblong-obovate, fleshy, flat; pedicels erect; capsules turbinately-spherical, umbilicate at the apex. ♃. G. Native of Egypt. Stem decumbent. Flowers yellow. Floriferous branches dichotomous.

Decumbent Bean-caper. Pl. prostrate.

7 Z. MACULA'TUM (Ait. hort. kew. 2. p. 60.) leaves stalked; leaflets linear-lanceolate. ♄. G. Native of the Cape of Good Hope. Petals yellow, marked with a red cordate spot at the base of each, above which in the 3 upper ones is a transverse red line.

Spotted-petalled Bean-caper. Fl. Oct. Nov. Clt. 1782. Shrub 3 feet.

8 Z. MICROPHY'LLUM (Thunb. prod. 80.) leaves almost sessile; leaflets ovate, smooth, minute, obcordate; capsules of 5 compressed lobes, retusely emarginate. ♄. G. Native of the Cape of Good Hope. Peduncles capillary. Flowers small, yellow. Petals entire.

Small-leaved Bean-caper. Fl. July, Aug. Clt. 1816. Shrub 1 to 2 feet.

9 Z. MORGSA'NA (Lin. spec. 551.) leaves on short stalks; leaflets obovate; petiole ending in a spiny bristle; capsules somewhat inflated, 4-5-winged. ♄. G. Native of the Cape of Good Hope. Burm. afr. 7. t. 3. f. 2.—Dill. elth. t. 116. f. 141. Flowers nodding, yellow, each petal having a purple spot at the base. The plant is called *Morgsani* in Syria.

Morgsana Bean-caper. Fl. May, Sept. Clt. 1732. Shrub 2 to 6 feet.

10 Z. DE'BILE (Nees in Schlecht. Linnæa. 5. p. 46.) leaves slender, stalked; leaflets elliptic, acuminated. ♄. G. Native of Canga and Groenberg, at the Cape of Good Hope. Stems numerous from the root, weak, tetragonal. Stipulas triangular. Flowers yellow, with dark claws.

Weak Bean-caper. Shrub decumbent.

11 Z. HO'RRIDUM (Nees in Schlecht. Linnæa. 5. p. 46.) smooth, erect; stem strong, round, sometimes with the branches spinescent; petioles dilated; leaflets coriaceous, fleshy. ♄. G. Native of the Cape of Good Hope. Peduncles filiform. Stipulas triangular, acute, and white at the apex. Flowers yellow, with dark claws.

Horrid Bean-caper. Shrub 2 to 6 feet.

12 Z. PARVIFÒLIUM; stems woody, round; leaves stalked, fleshy; leaflets narrow, elliptical; stipulas membranous, shining, white; peduncles shorter than the leaves. ♄. G. Native of the Cape of Good Hope, on the banks of the Orange river. Z. microphýllum, Nees in Schlecht. Linnæa. 5. p. 46. Flowers yellow.

Small-leaved Bean-caper. Shrub 2 to 6 feet.

13 Z. LICHTENSTEINIA'NUM (Nees in Schlecht. Linnæa. 5. p. 47.) leaves coriaceous, stalked; leaflets oblique, arched on the outside, and cut on the inside, rounded at the top. ♄. G. Native of the Cape of Good Hope. Flowers solitary, yellow.

Lichtenstein's Bean-caper. Shrub 2 to 4 feet.

14 Z. DICHO'TOMUM (Nees in Schlecht. Linnæa. 5. p. 48.) branches many times dichotomous; leaves few, minute, on short stalks, coriaceous; leaflets obliquely-obcordate. ♄. G. Native of the Cape of Good Hope, at the Orange river. A tall tree.

Dichotomous-branched Bean-caper. Tree.

15 Z. FU'LVUM (Lin. spec. ed. 1st. p. 386.) leaves sessile; leaflets obovate, flat, smooth; capsule acutely 5-angled. ♄. G. Native of the Cape of Good Hope. Flowers yellow, with a large dark spot at the base of each petal.

Fulvous-flowered Bean-caper. Shrub 3 feet.

16 Z. RETROFRA'CTUM (Thunb. prod. 80.) leaves stalked; leaflets obovate, smooth; pedicels shorter than the leaves; ovary deeply 5-lobed. ♄. G. Native of the Cape of Good Hope. Branches spreading, recurved. Flowers very small. This species comes nearest to *Z. microphýllum*.

Retrograde-branched Bean-caper. Shrub 1 to 3 feet.

17 Z. SESSILIFÒLIUM (Lin. spec. 552.) leaves almost sessile; leaflets lanceolate-oval; petioles ending in a spiny bristle; capsules globose, depressed, wingless. ♄. G. Native of the Cape of Good Hope. Sims, bot. mag. t. 2184.—Dill. hort. elth. t. 116. f. 142.—Burm. afr. 4. t. 2. f. 1. Petals sulphur or orange-coloured, with a brown spot at the base of each, crenate at the tip. In some specimens the branches are much angled, in others round, therefore there are probably two species confused.

Sessile-leaved Bean-caper. Fl. July, Aug. Clt. 1713. Shrub 3 feet.

18 Z. SPINÒSUM (Lin. mant. 380.) leaves almost sessile; leaflets linear, fleshy, flattish; petioles ending in a spiny bristle. ♄. G. Native of the Cape of Good Hope.—Burm. afr. 5. t. 2. f. 2. exhibits spines along the branches, but in the specimens we have seen the only spines are those terminating the petioles. Flowers nodding, yellow.

Spiny-stipuled Bean-caper. Fl. July, Aug. Clt. 1820. Shrub 2 feet.

19 Z. CAPE'NSE (Lam. dict. 2. p. 443.) leaves sessile; leaflets obovate-roundish, fleshy. ♄. G. Native of the Cape of Good Hope. Flowers red.

Cape Bean-caper. Shrub 2 feet.

20 Z. Æ'STUANS (Lin. spec. 552.) leaves almost sessile; leaflets obovate, retuse; petioles ending in a little bristle; stipulas 5 at each joint, sometimes twin, sometimes solitary. ♃. S. Native of Surinam. Flowers and fruit unknown.

Stinging Bean-caper. Pl. 1 foot.

* * * *Leaves bifoliate; leaflets terete.*

21 Z. COCCI'NEUM (Lin. spec. 551.) leaves stalked; leaflets cylindrical, fleshy, smooth; pedicels erect; petals acuminated; capsules cylindrical. ♄. G. Native of Mauritania, in dry deserts; also of Egypt.—Shaw. afr. f. 231. Z. desertòrum, Forsk. descr. 87. icon. t. 11. Flowers scarlet. All kinds of cattle, and even camels, refuse to eat this plant.

Scarlet-flowered Bean-caper. Clt. 1823. Shrub 1 foot.

22 Z. A'LBUM (Lin. fil. dec. 1. t. 8.) leaves stalked; leaflets cylindrical, club-shaped, fleshy, cobwebbed; pedicels erect; petals blunt; capsules cylindrically-pentagonal. ♄. G. Native of Egypt, Barbary, and the Canary Islands. D. C. pl. grass. t. 154. Z. prolíferum, Forsk. descr. 87. icon. t. 12. A. Stem procumbent. Petals white, crenate.

White-flowered Bean-caper. Fl. Oct. Nov. Clt. 1779. Shrub trailing.

* * * * *Leaves bifoliate; leaflets scabrous.*

23 Z. PROSTRA'TUM (Thunb. prod. app. 189.) leaflets scabrous; stem decumbent; joints hairy. ♃. G. Native of the Cape of Good Hope. Flowers yellow?

Prostrate Bean-caper. Fl. July, Aug. Clt. 1810. Pl. prostrate.

24 Z. TRIDENTA'TUM (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 706.) leaves almost sessile; leaflets obovate, villous; petals and scales of stamens 3-toothed at the apex. ♄. G. Native of Mexico. Petals yellow. Filaments purple. Fruit very hairy, and perhaps 5-seeded.

Three-toothed-petalled Bean-caper. Shrub.

* * * * * *Leaves pinnate.*

25 Z. PINNA'TUM (Nees in Schlecht. Linnæa. 5. p. 48.) smooth; leaves pinnate, with 4-5 pairs of leaflets on a narrow-winged rachis, obliquely-lanceolate; stipulas small, triangular, with white jagged margins; flowers large, solitary or twin, on short pedicels. ♄. S. Native of Asia?

Pinnate-leaved Bean-caper. Shrub.

26 Z. MINIA'TUM (Nees in Schlecht. Linnæa. 5. p. 49.) like the preceding, but differs in the leaflets being 1-2 pairs, and in the leaflets being obovate and obtuse, as well as in the stipulas being larger and obtuse. ♄. G. Native of Asia, towards Bokhara on low hills, near Agetma.

Vermilion Bean-caper. Shrub.

27 Z. PORTULACOÌDES (Nees in Schlecht. Linnæa. 5. p. 50.) leaves pinnate, with 1-2 pairs of leaflets; flowers solitary at the wings of the bud; leaflets oblique, obovate, obtuse, and rather emarginate; stipulas large, semicircular; flowers apetalous; filaments with fringed scales, adnate to their base; peduncles longer than the petioles. ♄. G. Native of the Cape of Good Hope.

Portulaca-like Bean-caper. Shrub.

† *An anomalous 3-leaved species, which probably should be removed from the genus.*

28 Z.? LANA'TUM (Willd. spec. 2. p. 564.) leaves trifoliate; leaflets papillose beneath; stem flexuous, with woolly joints. ♃. S. Native of Sierra Leone. Filaments a little dilated at the base. Styles 5. Capsules opening at the base, 5-celled, 5-seeded. Therefore this plant is perhaps a proper genus.

Woolly Bean-caper. Pl.?

Cult. Zygophýllum is a genus of herbaceous plants and shrubs, bearing very pretty flowers. The greenhouse, stove, and frame species will thrive in a mixture of loam, peat, and sand; and cuttings of the perennial and shrubby kinds will root freely in a pot of sand under a hand-glass, but as a few of them ripen their seeds this will be unnecessary. The annual species should be sown in pots in the same kind of soil, and placed in a hot-bed, where they may remain until they have seeded, or they may be removed to the greenhouse. *Z. Fabàgo* is the only hardy herbaceous kind; it will grow well in any light soil, in a dry situation, otherwise it is apt to rot; it is only to be increased by seeds, which sometimes ripen in this country; these require to be sown in a pot, and placed in a frame, and when the plants are about 4 inches high, they may be planted out in the open border in a warm, dry, sheltered situation.

VII. GUAI'ACUM (*Guaiac* is the South American name of the tree). Plum. gen. t. 17. Lin. gen. no. 518. D. C. prod. 1. p. 706. Andr. Juss. in mem. mus. 12. p. 456. t. 15. no. 5.

LIN. SYST. *Decándria, Monogýnia.* Calyx deeply 5-parted into unequal segments. Petals 5, unguiculate. Stamens 10; filaments naked. Ovary tapering into a stipe at the base, 2-5-angled, 2-5-celled. Style 1, short, with an acute stigma. Capsule on a very short stipe, rather fleshy, 2-5-angled, 2-5-celled, containing only one seed in each cell from abortion, ovoid, smooth, fixed to the axis, pendulous. Albumen cartilaginous, chinky. Embryo almost straight, with thickish cotyledons.—Trees with very hard wood. Leaves abruptly-pinnate, with twin stipulas at their base. Peduncles axillary, 1-flowered. Flowers usually blue.

1 G. DU'BIUM (Forst. prod. no. 186.) leaves with one pair of oblong-lanceolate blunt leaflets. ♄. S. Native of the island of Tongatabu, in the South Seas.

Doubtful Lignum-vitæ. Tree.

2 G. officina'le (Lin. spec. 546.) leaves with 2 pairs of obovate or oval, blunt leaflets; peduncles twin; fruit 2-celled. ♄. S. Native of Jamaica and St. Domingo, in low lands. Woodv. med. bot. 43. t. 16.—Pluk. alm. 180. t. 35. f. 3.—Sloan. jam. 2. p. 133. t. 222. f. 3-6.—Seb. thes. 1. p. 86. t. 53. f. 2.—Blackw. t. 350. f. 1-2. Lam. ill. t. 342. Flowers blue. Capsules often 2-angled. A tree about 30 feet high, and near a foot in the diameter of its trunk, with a very smooth bark, variegated with green and white; the wood hard and ponderous, dark olive-brown within, whitish towards the bark, having a peculiar acid aromatic scent, and well known in England by the name of *Brazil-wood* or *Lignum-vitæ*. The wood and bark were celebrated remedies for syphilitic complaints before mercury came into use. The wood was first used in Spain in 1508 for the cure of syphilis, under the title of *Santo-Legno*. In 1517 in Italy, and 1518 in Germany. It is found in the shops only in a state of raspings or shavings, which are of a yellowish colour, but acquire a bluish-green colour on exposure to the fumes of nitrous acid, which is a characteristic of their being genuine. Its taste is bitterish, and when kindled it gives out a bitterish smell. As guaiac is used only in decoction, its virtues must depend upon principles soluble in water. The resin exudes spontaneously in drops, but is principally obtained by sawing the wood into short billets, and bored longitudinally with an auger, one end is then set on a fire, so that a calabash may receive the melted resin as it runs through the holes so bored. It may also be obtained by boiling the chips or raspings in water. The resin swims, and may be skimmed off. This resin is soluble in a moderate heat, but is not softened by the heat of the fingers; it is brownish externally, and the fracture bluish-green, when swallowed causing an insufferable burning and pricking in the throat. It is sometimes adulterated with common resin, but the fraud is easily detected by the smell of turpentine emitted when thrown on live coals. Guaiac taken internally commonly excites a sense of warmth in the stomach, a dryness of the mouth, with thirst; it increases the heat of the body, and quickens the circulation. If the patient be kept warm, it produces diaphoresis; if exposed freely to the air, an increased flow of urine. In large doses it is purgative.

Officinal or Common Lignum-vitæ, or Guaiacum. Fl. July, Sept. Clt. 1694. Tree 30 feet.

3 G. Bre'ynii (Spreng. syst. 2. p. 322.) leaves with 2 or 3 pairs of unequal leaflets, extreme ones oblong-elliptical, unequal-sided, middle pair obovate, lower ones roundish; peduncles umbellate. ♄. S. Native of South America, at the river Magdalena. Flowers blue.

Breynius's Lignum-vitæ. Tree 20 feet.

4 G. vertica'le (Ort. dec. 8. p. 93.) leaves with 3 or 6 pairs, but usually 5 pairs of oblong, coriaceous, mucronate leaflets, outer ones obovate, and are, as well as the branches, very smooth. ♄. S. Native of New Spain and St. Domingo. Pedicels usually twin. Flowers blue, with vertical petals.

Vertical-petalled Lignum-vitæ. Clt. 1820. Shrub 8 feet.

5 G. sa'nctum (Lin. spec. 546.) leaves with 5 or 7 pairs of oval, blunt, mucronulated leaflets: petioles and branchlets somewhat pubescent; pedicels twin; petals fringed; capsule 5-celled. ♄. S. Native of South America, particularly in the island of St. Domingo, New Spain, and Brazil.—Comm. hort. amst. 1. p. 171. t. 88.—Hern. mex. 63.—Pluk. phyt. t. 94. f. 4. A middle-sized knotty tree, whose wood, according to Hernandez, is internally blue. Flowers beautiful blue. It is called in some of the West India Islands *Bastard Lignum-vitæ*. The wood of this species was first introduced as a cure for the venereal disease by the Spaniards, and being carried to the East Indies fetched there an extravagant price, till it became more plentiful.

Holy Lignum-vitæ. Tree 20 feet.

6 G. arbòreum (D. C. prod. 1. p. 707.) leaves with 7-14 pairs of oval-oblong, blunt leaflets, which are unequal at the base, and are usually alternate; petioles and branchlets somewhat pubescent. ♄. S. Native of Carthagena, Guadaloupe, and near Barcelona of Cumana, in woods. H. B. et Kunth, nov. gen. amer. 6. p. 11. Zygophýllum arbòreum, Jacq. amer. 130. t. 83. pict. 35. t. 124. Racemes loose. Petals unguiculate, orange-coloured. Stamens with short appendages at their base. Capsules stipitate, 5-winged. This is a large tree, terminating in a beautiful head, with very hard wood, and is called by the natives of Cumana *Guaiacum*, but they give this name to all hard woods. They have a notion that if it be buried in the ground it will be converted into stone.

Tree Lignum-vitæ. Fl. July. Clt. 1816. Tree 40 feet.

Cult. These trees will grow well in a mixture of loam and peat, and ripened cuttings taken off at a joint will strike root, if planted thinly in a pot of sand, under a hand-glass in heat, but care should be taken when these have rooted not to break the fibres in potting them off, as they are truly brittle.

VIII. PORLIE'RIA (in honour of Anthony de Porlier de Baxamar, a Spanish promoter of botany). Ruiz et Pav. prod. fl. per. p. 55. t. 9. D. C. prod. 1. p. 707. Andr. Juss. in mem. mus. 12. p. 457. t. 16. no. 6.

Lin. syst. *Octándria*, *Monogýnia*. Calyx deeply 4-parted. Petals 4, somewhat unguiculate, connivent. Stamens 8; filaments scaly at the base. Ovary seated on a short gynophore, 4-furrowed, 4-celled. Fruit fleshy, globose, 4-lobed, 4-celled, nevertheless they are of 4 distinct carpels, with a solitary seed in each cell, which is egg-shaped, smooth, and pendulous. Embryo rather arched.—A shrub with spreading stiff branches and abruptly pinnate leaves, with twin spiny stipulas at their base. Peduncles axillary, 1-flowered in fascicles. An intermediate genus between *Guaiacum* and *Lárrea*.

1 P. hygrome'trica (Ruiz et Pav. syst. fl. per. p. 94.). ♄. G. Native of Peru. Leaves with 7 or 8 pairs of linear leaflets, these remain spread open in serene weather, but contract before rain. This shrub possesses the same virtues as those attributed to *Guaiacum*, which see.

Hygrometric Porlieria. Clt. 1823. Shrub 6 feet.

Cult. This shrub will thrive well in a mixture of loam and peat; and ripened cuttings will strike root if planted thinly in a pot of sand and placed under a hand-glass, in a moderate heat.

§ 2. *Zygophýlleæ spuriæ. D. C. prod.* 1. *p.* 707. *Andr. Juss. mem. mus.* 12. *p.* 458. *Leaves alternate.*

IX. CHITO'NIA (from χιτων, *chiton*, an outer covering; the seeds are covered with aril). Moc. et Sesse, fl. mex. ined. icon. D. C. prod. 1. p. 707. Andr. Juss. in mem. mus. 12. p. 518.

Lin. syst. *Octándria*, *Monogýnia*. Calyx 4-parted, deciduous. Petals 4, connivent, orbicular. Stamens 8. Ovary quadrangular. Style 1. Stigma peltate, hemispherical. Capsule 4-celled, 4-valved; valves keeled, winged, therefore the capsule is 4-winged. Seeds 2 in each cell, truncate at the apex, enclosed in fleshy aril.—Leaves alternate, and probably stipulaceous, impari-pinnate, with 6 pairs of ovate, stalked leaflets. Pedicels twin, 1-flowered.

1 C. Mexica'na (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 1. p. 707.). ♄. S. Native of Mexico. Flowers large, of a rose-purple colour. Seeds black, covered with red aril.

Mexican Chitonia. Tree or shrub.

Cult. This plant will probably grow well in a mixture of

loam and peat; and ripened cuttings, planted under a hand-glass, will perhaps root. The above method may be tried if ever the plant be introduced.

X. BIEBERSTE'INIA (in honour of Frederic Marschall Bieberstein, counsellor of state of Russia, author of Flora Taurico-Caucasica, and other works). Steph. mem. nat. mosc. 1. p. 89. D. C. prod. 1. p. 707. Andr. Juss. in mem. mus. 12. p. 458.

Lin. syst. *Decándria, Pentagýnia.* Calyx deeply 5-parted, irregular. Petals 5, twisted in the bud, unguiculate. Stamens 10, hypogynous; filaments awl-shaped, rather villous, the 5 shortest opposite the petals, the alternate ones with a scale at the base of each on the outside; anther oscillatory. Ovaries 5, distinct at the apex, but connate at the base. Styles 5, simple, rising from the middle of the ovaries. Carpels 1-seeded, arillate inside.—Perennial herbs beset with glandular hairs. Leaves impari-pinnate, with cut leaflets. Stipulas adhering to the petioles. Racemes terminal, simple.

1 B. odòra (Steph. l. c.) leaflets roundish, deeply toothed; petals entire. ♃. F. Native of the Altaian mountains at the falls of Tschuia. Flowers probably yellow.

Sweet-scented Biebersteinia. Pl. ?

2 B. multífida (D. C. prod. 1. p. 708.) leaflets multifid into linear lobes; petals toothed. ♃. F. Native of Persia.

Multifid-leaved Biebersteinia. Pl. ?

Cult. These plants should be kept in pots in a mixture of loam, peat, and sand, and they may be increased by seeds.

XI. TRICHA'NTHE'RA (from τριξ τριχος, *trix trichos*, a hair, and ανθηρα, *anthera*, an anther; in allusion to the anthers being bristly). Ehrenberg, in Schlecht. Linnæa. 4. p. 401.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-cleft. Petals 5, linear, hypogynous. Stamens 5, free; filaments flat; anthers setaceous. Disk glandless. Styles numerous, crowned by simple capitate stigmas. Capsule ovate, stipitate, bluntly pentagonal, 5-celled, 5-valved, many-seeded. Seeds naked, albuminous.

1 T. mode'sta (Ehrenb. l. c. p. 402.). ♃. or ☉. F. Native of Arabia near Djedda towards Mecca. A slender herb, 2 or 3 inches high. Leaves alternate, stipulate, setaceously linear, toothed at the apex. Flowers on long jointed peduncles, nodding. Petals twisted in the bud.

Modest Trichanthera. Pl. 2 to 3 inches.

Cult. A mixture of peat and sand will perhaps answer this little plant; and it may be increased by seeds or cuttings planted in mould under a hand-glass.

XII. ANATRO'PA (*ava, ana*, upwards, and τροπη, *trope*, turning; spike turned like that of *Heliotropium*). Ehrenberg, in Schlecht. Linnæa. 4. p. 403.

Lin. syst. *Tetrándria, Monogýnia.* Calyx 4-cleft, valvate in the bud. Petals 4, hypogynous, imbricate in the bud. Stamens 4, free. Style short, clavate, crowned by a simple stigma. Capsule fleshy, bluntly quadrangular, depressed, 4-valved, 4-celled; cells 4-5-seeded.

1 A. tene'lla (Ehrenb. in Schlecht. Linnæa. 4. p. 404.). ♃. F. Native of Arabia. A slender, fleshy, smooth plant; lower leaves entire, upper ones alternate and pinnatifid, auricled with stipulas. Flowers disposed in a spike, turned like that of *Heliotròpium*.

Tender Anatropa. Pl. 4 inches, ascending.

Cult. See *Trichanthèra* for cultivation and propagation.

XIII. MELIA'NTHUS (from μελι, *meli*, honey, and ανθος, *anthos*, a flower; flowers full of honey). Tourn. inst. t. 245. Lin. gen. no. 795. D. C. prod. 1. p. 708. Andr. Juss. in mem. mus. 12. p. 459. t. 28. no. 48.

Lin. syst. *Tetrándria, Monogýnia.* Calyx coloured, large, 5-cleft, permanent, unequal, lower segment smaller than the rest, bulged at the base on the outside, with a corresponding hollow inside, full of honey fluid. Petals 5, strap-formed, 4 lower ones declined, connected in the middle, the fifth very small. Stamens 4, hypogynous, with the two upper filaments distinct, but the two lower ones are joined together at the base. Ovary with 4 stripes. Style 1, terminated by a somewhat 4-cleft stigma. Capsule membranaceous, 4-lobed, 4-celled, winged, opening by the inner angle, each cell containing 2 ovulæ, but only one of them comes to maturity. Seed ovate, shining. Albumen fleshy. Embryo with small linear cotyledons longer than the radicle.—Shrubs with glandless, impari-pinnate leaves, with toothed leaflets, and distinct or joined stipulas. Racemes many-flowered, spike-formed. Leaves having a strong unpleasant scent when bruised.

1 M. ma'jor (Lin. spec. 892.) leaves smooth on both surfaces, glaucous; stipulas large, joined to the petiole. ♄. H. Native of the Cape of Good Hope. Lam. ill. t. 552. Ker. bot. reg. t. 45. Leaflets large. Flowers of a brown chocolate colour.—Herm. lugd. bat. t. 415.

Great Honey-flower. Fl. May, July. Clt. 1688. Sh. 6 ft.

2 M. mìnor (Lin. spec. 892. exclusive of the synonym of Comm.) leaves smooth above and hoary beneath; stipulas distinct. ♄. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 301. Racemes axillary, elongated, drooping. Bracteas linear, attenuated. Flowers of a dark-brown colour in whorls; lower part of petals green, upper part saffron-coloured, and blush or fine red on the bulged part of the lower sepal. Leaves deep green on the upper surface, but hoary below.

Smaller Honey-flower. Fl. Aug. Clt. 1696. Shrub 5 feet.

3 M. comòsus (Vahl. symb. 3. p. 85.) leaves villous above, downy beneath; stipulas distinct. ♄. G. Native of the Cape of Good Hope. Comm. rar. t. 4. Racemes leafy beneath. Bracteas cordate. Flowers alternate, in pendent clusters, of a yellowish colour. Capsules hoary.

Tufted Honey-flower. Clt. 1820. Shrub 4 feet.

Cult. These shrubs will thrive well in any light rich soil, and cuttings will strike root freely under a hand-glass, or they may be increased by suckers, which are thrown out in plenty from the root. The *M. màjor* will grow and flower freely if planted against a wall in a warm situation, but it requires to be sheltered in winter by a mat.

XIV. BALANI'TES (meaning unknown). Delil. fl. egyp. 77. D. C. prod. 1. p. 708.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted. Petals 5. Stamens 10; filaments awl-shaped. Disk glandular, girding the ovary. Ovary 5-celled, 5-seeded. Drupe egg-shaped, acute, 1-celled, 1-seeded from abortion; nut woody, pentagonal. Seed pendulous, with a fibrous covering, and a thickened endopleura about the radicle. Radicle superior. Cotyledons semi-ovate. Plumule 2-leaved.—Trees with alternate bifoliate leaves and axillary spines. Pedicels 1-flowered, aggregate. Flowers small, whitish.

1 B. Ægypti'aca (Delil. l. c. t. 28. f. 1.). ♄. S. Native of tropical Africa, and is now cultivated in Egypt.—Agihalib, P. Alp. æg. 20. t. 11. Ximènia Ægyptìaca, Lin. spec. 1194. The seed of this tree is usually mixed with gum Senegal.

Egyptian Balanites. Clt. ? Tree 20 feet.

2 B. fe'rox (D. C. prod. 1. p. 708.) putamen more acute, narrower, and more furrowed; leaflets roundish; spines longer. ♄. S. Ximènia fèrox, Poir. dict. 8. p. 805. Native of St.

Domingo, where it has been most probably introduced by the negroes from Africa.

Fierce Balanites. Tree 20 feet.

Cult. These trees will grow in a mixture of loam, sand, and peat; and ripened cuttings will strike root freely, if planted in a pot of sand, and placed under a hand-glass, in a moderate heat.

Order LIX. RUTA'CEÆ (plants agreeing with *Rùta* in important characters). Juss. gen. 296. exclusive of the first section. Brown, gen. rem. p. 13. D. C. prod. 1. p. 709.—Fraxinéllæ, Diósmeæ, and Zanthoxýleæ, Nees et Mart. nov. act. bonn. xi. p. 149. 180. and 184.

Flowers of all hermaphrodite, except in Tribe *Zanthoxýleæ*. Calyx with 4-5, rarely 3 divisions, toothed (f. 123. *a.*), cleft or parted. Petals equal in number to the divisions of the calyx (f. 123. *b.*), and alternating with them, usually distinct (f. 123. *b.*), and longer than the calyx, rarely connected into a monopetalous corolla, as in many of the genera belonging to Tribe *Cusparièæ*, and in the genus *Corræ'a*, very rarely absent altogether. Stamens sometimes equal in number with the petals, and alternating with them; sometimes double that number (f. 123. *d.*), with the alternate ones shortest; sometimes these last are abortive, and of a different figure to the others. Filaments inserted in the gynophore, rarely beneath the hypogynous disk, and more rarely perigynous, or adhering to the bottom of the calyx, in consequence of the disk being joined with it; they are either naked or furnished with a scale at the base, free, very rarely connected at the base, or glued to the corolla, as in those with monopetalous flowers. Anthers 2-celled (f. 123. *c.*), bursting lengthwise. Ovary free, with the cells equal in number to the petals (f. 123. *g.*), and opposite them, rarely fewer, verticillate; sometimes fixed around the common axis; sometimes distinct to the base (f. 123. *f.*), sometimes joined together. Ovulæ fixed to the central placenta, usually 2 in each cell or carpel, rarely 1 or 4-20. Styles equal in number to the cells or carpels, usually connected together in one (f. 123. *e.*), or only connected at the base or top, rarely wholly distinct. Stigma of as many lobes or furrows as there are styles in those that are joined (f. 123. *d.*). Fruit sometimes simple, having as many valves (f. 123. *g.*) as there are styles, with a dissepiment in the middle of each valve, dehiscent, but more usually with an equal number of 2-valved, separable carpels (f. 123. *f.*), rarely indehiscent, composed of many drupes or carpels. Sarcocarp thin, or more or less fleshy. Endocarp thin or woody, closely adhering to the sarcocarp, or separable from it into a 2-valved elastic cocculum. Seeds fewer than the ovulæ from abortion, with a membranous or usually with a testaceous covering. Albumen fleshy or cartilaginously horny, rarely wanting. Embryo white or greenish, with a straight radicle pointing towards the top of the cells, rarely turned obliquely towards the hylum. Cotyledons of various forms.

This is an interesting and extensive order, but rather heterogeneous group of plants, natives of all countries and all situations. The species are either fetid northern herbaceous plants, as the *Garden Rue;* or neat heath-like southern shrubs, as the *Cape Diósmas;* broad or long-leaved Australian shrubs, covered with stellate pubescence, as *Phebàlium*, *Crònea*, and *Corræ'a;* or tropical trees, with panicles of palid flowers, as *Zanthóxylums*, and *Cuspàrias*. The medical properties of many genera are considerable. *Rùta* and *Péganum* are ammenagogue, anthelmintic, and sudorific. *Cape Diósmas* abounds in a volatile oil, with an agreeable smell, but acrid flavour; several of the species are reputed antispasmodics. The *Zanthóxylums* are said to possess acrid, stimulating, spasmodic, and tonic qualities. *Z. clàva Hérculis* and *Z. fraxíneum* are said in America to be powerful sudorifics and diaphoretics. According to Barton, they possess a remarkable power of exciting salivation, not only when applied to the mouth, but even when taken internally; they have both been found powerful remedies in paralysis of the mouth. *Z. caribæ'um* is regarded in Guiana as a detersive, vulnerary, and febrifuge. *Brùcea* is used as an astringent in dysenteries. The famous frebrifugal Angustura bark is the produce of *Galipea Cuspària*. The leaves of the plants contained in this order are of various kinds; they are opposite or alternate, simple, trifoliate, or abruptly and impari-pinnate, always without stipulas, which distinguishes it from the last and the foregoing order, *Zygophýlleæ* and *Simarùbeæ;* they have usually various glands, which contain oil of a very strong-scented odour.

Synopsis of the Genera.

Tribe I.

Ru'teæ. *Flowers regular. Stamens hypogynous. Ovary 3-5 lobed, 3-5 valved, 3-5 celled. Calyx of 4-5 divisions, with an equal number of petals. Albumen fleshy. Shrubs or herbs, with alternate leaves.*

1 Pe'ganum. Calyx 5-parted. Stamens 15, smooth. Style crowned by a trigonal stigma. Capsule substipitate, nearly round, 3-celled, 3-valved, many-seeded.

2 Ru'ta. Calyx 4-parted. Stamens 8. Styles 4, connected. Ovary substipitate. Capsule 4-lobed, 4-celled.

3 Aplophy'llum. Calyx 5-parted. Stamens 10. Styles 5, connected. Capsule 5-lobed, 5-celled.

4 Cyminòsma. Calyx 4-parted, unequal. Stamens 8. Style crowned by a 4-furrowed stigma. Berry 4-celled; cells 1-seeded.

Tribe II.

Dio'smeæ-Europæa'næ. *Flowers irregular. Stamens hypogynous. Disk wanting. Ovaries 5, distinct. Albumen fleshy. Petals equal in number with the divisions of the calyx.*

5 Dicta'mnus. Calyx 5-parted, unequal. Petals unequal. Stamens 10, declinate. Style 1. Capsule substipitate, composed of 5 2-seeded carpels.

Tribe III.

Dio'smeæ-Cape'nses. *Flowers regular. Calyx 5-parted. Petals 5. Disk adhering to the calyx. Stamens perigynous. Anthers 5. Ovaries 1-5, connected. Albumen very thin or wanting.*

6 Calode'ndron. Stamens 10, 5 of which are sterile and petaloid, terminating in a gland. Anthers terminated by a gland.

Style deflexed. Capsule 5-valved, 5-celled; cells 2-seeded. Leaves opposite.

7 Adena'ndra. Stamens 10, the 5 opposite the petals sterile, each ending in a globose or concave gland. Anthers terminated by a shell-like, rarely globose, pedicellate gland. Carpels 5, 1-2-seeded. Leaves alternate, rarely opposite.

8 Coleone'ma. Stamens 10, the 5 opposite the petals sterile, and adnate to their base, fitted into a channel, and terminating in a gland. Anthers terminated by a minute sessile gland. Capsule of 5 horned carpels. Leaves scattered.

9 Diósma. Stamens 5, alternating with the petals. Anthers round, terminated by a sessile gland. Style usually a little arched. Capsule of 5 horned carpels. Leaves scattered or opposite.

10 Euchæ'tis. Stamens 5, opposite the calycine segments. Anthers terminated by a minute globose gland. Capsule of 5 horned carpels. Petals bearded inside. Leaves scattered.

11 Acmade'nia. Stamens 10, the 5 opposite the petals sterile or almost wanting. Anthers furnished with a conical gland at the apex. Style crowned by a 5-furrowed stigma. Capsule of 5 compressed, horned carpels. Leaves opposite.

12 Baro'sma. Stamens 10, the 5 opposite the petals sterile, fringed, petaloid, obscurely glandular at the apex. Anthers egg-shaped, usually furnished with a minute gland at the apex. Capsule of 5 auricled carpels. Leaves opposite or scattered.

13 Agathósma. Stamens 10, the 5 opposite the petals sterile, spatulate, beset with glandular dots. Anthers terminated by a globular gland. Capsule of 5 joined, horned carpels. Leaves scattered.

14 Macróstylis. Stamens 5, alternating with the petals. Anthers globose, each furnished with a minute gland at the apex. Capsule of 3 horned carpels. Leaves scattered, rarely opposite.

15 Empleu'rum. Flowers monoecious or polygamous from abortion. Calyx 4-cleft. Disk and petals wanting. Stamens 4, with the anthers longer than the filaments, each terminated by an immersed gland. Carpels 1-2, legume-formed, 2-valved, 1-seeded, horned. Leaves alternate, serrulated.

Tribe IV.

Diósmeæ-Australa'sicæ. *Flowers regular* (f. 123. *b.*). *Petals* 4-5. *Stamens hypogynous, double the number of the petals* (f. 123. *d. c.*), *all fertile. Disk wanting. Ovaries distinct or connected. Styles joined, crowned by an equal number* (f. 123. *b.*) *of stigmas. Albumen dense. Shrubs, natives of New Holland.*

16 Corræ'a. Calyx 4-toothed. Petals 4, joined into a tube. Stamens 8. Ovary 8-lobed. Style 4-furrowed. Carpels 4, capsular; cells 2-3-seeded. Leaves opposite, entire.

17 Diplolæ'na. Involucre double, outer one 5-lobed, inner one 10-15-parted, containing many flowers. Calyx 5-parted. Petals none. Stamens 10, unequal, fringed at the base. Style 5-furrowed. Fruit of 5 carpels, 1-celled, 1-seeded. Leaves alternate.

18 Pheba'lium. Calyx 5-cleft (f. 123. *a.*). Petals 5 (f. 123. *b.*). Stamens 10 (f. 123. *d. c.*), unequal, smooth. Style (f. 123. *e.*) and stigma 5-furrowed (f. 123. *d.*). Fruit of 5 capsular, 2-valved, 1-seeded carpels (f. 123. *f.*), girded by the calyx. Leaves alternate, simple, entire.

19 Philothe'ca. Calyx 5-parted. Petals 5, unguiculate. Stamens 10, unequal, connate at the base, with the tube smooth, and the free part of the filaments hairy. Fruit of 5 1-seeded carpels. Leaves alternate, linear.

20 Cròwea. Calyx 5-parted. Petals 5, sessile. Stamens 10, unequal, fringed, lying close together. Anthers ending in a bearded appendage. Fruit of 5 1-seeded carpels. Leaves alternate, entire.

21 Erioste'mon. Calyx 5-parted. Petals 5, marcescent. Stamens 10, unequal, free, fringed, tapering into a thread which bears the anthers. Fruit of 5, rarely 1-2 carpels. Leaves entire, alternate.

22 Borònia. Calyx 4-parted. Petals 4, marcescent. Stamens 8, unequal, free. Anthers seated on the short threads which terminate the filaments. Fruit of 4 2-valved carpels. Leaves simple or impari-pinnate.

23 Zie'ria. Calyx 4-parted. Petals 4. Stamens 4, rarely 8, smooth, with a gland on the inside of each. Capsule 4-lobed, 4-celled, 4-seeded. Leaves trifoliate, seldom simple.

Tribe V.

Diósmeæ-America'næ. *Flowers regular. Petals free. Stamens twice the number of the ovaries. Disk surrounding the ovaries, or wanting. Styles connected, crowned by as many lobes as there are cells or carpels. Albumen fleshy, rarely wanting. Trees or shrubs, with opposite, alternate, simple, bifoliate, and trifoliate leaves. Flowers axillary or terminal, panicled, racemose or corymbose.*

24 Meli'cope. Calyx 4-parted. Petals 4, unguiculate, approximate. Stamens 8. Ovaries 4, surrounded by 4 large, didymous glands. Leaves opposite, ternate.

25 Evòdia. Calyx 4-parted. Petals 4. Stamens 4. Ovaries 4, surrounded by a cup-shaped, 4-lobed disk. Fruit of 4, rarely fewer, 2-valved, 1-seeded carpels. Leaves opposite, simple, and trifoliate.

26 Esenbe'ckia. Calyx 5-parted. Petals 5. Stamens 5. Ovary sessile, tubercled, 5-lobed, 5-celled, surrounded by a 5-lobed disk? Leaves alternate, simple, and trifoliate.

27 Metrodòrea. Calyx 5-cleft. Petals 5. Stamens 5. Ovary buried in the disk, and confused with its substance, tubercled, 5-lobed, 5-celled. Cells 1-2-seeded. Leaves opposite, simple, rarely bi-foliate.

28 Piloca'rpus. Calyx small, 5-toothed. Petals 5. Stamens 5. Fruit of 5 or fewer small, 1-seeded carpels, immersed in the base of the gynophore. Leaves alternate and opposite, simple, bifoliate, and trifoliate.

29 Hórtia. Calyx bluntly 5-toothed. Petals 5, bearded inside. Stamens 5. Ovary smooth, pentagonal, 5-celled, seated on the disk. Capsule 2-4-5-celled; cells 1-2-seeded. Leaves alternate, simple.

30 Choi'sya. Calyx of 5 sepals. Petals 5. Stamens 10,

unequal. Ovaries 5, connected, inserted in the disk, each containing 2 ovulæ. Leaves opposite, ternate.

TRIBE VI.

CUSPARIE'Æ. *Flowers regular or anomalous. Petals 5, free, but usually joined into a bilabiate, campanulate, or funnel-shaped corolla. In the polypetalous flowers the stamens are free. In the monopetalous ones they adhere to the tube of the corolla. Filaments sometimes all fertile, sometimes 2 or 3 of them are sterile. Disk urceolate, girding the ovaries. Ovaries equal in number with the petals, distinct, rarely connected, each containing 2 ovulæ. Styles connected at the top or bottom, but usually in one. Albumen wanting. Trees and shrubs, rarely herbs, with alternate, rarely nearly opposite leaves; these are sometimes simple, but are usually trifoliate. Flowers disposed in terminal or axillary racemes.*

31 SPIRANTHE'RA. Calyx 5-cleft. Petals 5, free. Stamens 5. Anthers at length spirally revolute. Ovaries 5, villous, connected. Styles 5, joined. Leaves ternate.

32 GALÌPEA. Calyx 5-toothed. Petals 5, connected at the base. Filaments 5, rarely 6-8, 2-4 of which are sterile. Ovaries 5, connected. Styles 5, distinct, partly connected at the base, or joined in one. Fruit only of 1-2 carpels from abortion. Leaves simple and ternate.

33 ALMEÌDEA. Calyx 5-toothed. Petals 5, distinct. Stamens 5. Ovaries 5, connected at the base. Fruit only of 1-2 1-2-seeded carpels. Leaves simple.

34 DIGLÓTTIS. Calyx 5-cleft. Petals 5, connected at the base. Filaments 5, 3 of which are sterile. Anthers terminated by a bearded ligula. Fruit of 5 1-seeded carpels. Leaves simple.

35 ERYTHROCHÌTON. Calyx tubular, 5-cleft, connected into 2 nearly equal lips. Petals 5, connected. Filaments 5, all fertile. Fruit of 5 1-seeded carpels. Leaves simple.

36 TICÒREA. Calyx 5-cleft. Petals 5, connected at the base. Filaments 5-7, rarely 8, 3 or 6 of which are sterile. Fruit of 5 connected, 1-seeded carpels. Leaves ternate, rarely simple.

37 MONNIE'RA. Calyx 5-parted. Petals 5, connected into a bilabiate limb, lower lip 4-lobed, upper one 1-lobed. Filaments 5, 3 of which are sterile. Fruit of 5 or fewer 1-seeded carpels. A villous herb, with opposite or alternate trifoliate leaves.

TRIBE VII.

ZANTHOXY'LEÆ. *This tribe differs from the two last in the flowers being of separate sexes.*

38 DICTYOLÒMA. Calyx 5-parted. Petals 5. Stamens 5, rising each from a woolly scale. Carpels 5, distinct, 2-valved, 3-4-seeded. Seeds kidney-shaped. Leaves pinnate. Male and female flowers intermixed.

39 GALVE'ZIA. Calyx 4-parted. Petals 4. Stamens 8, unequal. Styles 4, distinct at the base, but connected at the apex. Drupes 4, 1-seeded. Seeds egg-shaped. Leaves simple. Male and female flowers on distinct branches or trees.

40 BRU'CEA. Calyx 4-parted. Petals 4. Stamens 4. Styles 4, distinct. Drupes 4, 1-seeded. Leaves impari-pinnate.

41 BRUNE'LLIA. Calyx 4-5-parted. Petals wanting. Stamens 8-10. Styles 4-5, distinct. Carpels 4-5, distinct, 1-2-seeded. Leaves opposite or ternately verticillate, simple, trifoliate, and impari-pinnate.

42 ZANTHÓXYLUM. Calyx 3-4-5-parted, with an equal number of petals and stamens. Styles equal in number to the carpels, distinct, or connected at the apex. Carpels 1-5, sessile or stipitate, 2-valved, 1-2-seeded. Leaves simple, ternate, abruptly and impari-pinnate.

43 BÓYMIA. Male flowers unknown. Calyx 5-cleft. Petals 5. Styles 5, joined in one. Carpels 5, connected at the base, diverging at the top, 1-seeded.

44 TODDA'LIA. Calyx 5-toothed. Petals 5. Stamens 5. Stigma almost sessile, peltate. Fruit fleshy, 5-furrowed, 5-celled; cells 1-seeded. Leaves trifoliate. Male and female flowers on different branches.

45 VE'PRIS. Calyx 4-parted. Petals 4. Stamens 8, unequal. Stigma sessile, convex, peltate. Fruit fleshy, 4-lobed, 4-celled; cells 1-seeded. Leaves trifoliate. Male and female flowers on different branches.

46 PTE'LEA. Calyx 4-5-parted. Petals 4-5. Stamens 4-5. Fruit compressed, 2-3-celled; cells 1-seeded, turgid in the centre, each cell expanded into an orbicular reticulated wing. Leaves of 3, rarely of 5 leaflets.

47 BLACKBU'RNIA. Calyx 4-toothed. Petals 4. Stamens 4. Style filiform, crowned by a simple stigma. Ovary conical, 1-seeded. Male and female flowers on distinct trees.

48 AILA'NTUS. Flowers polygamous. Calyx 5-cleft. Petals 5. Stamens 10, unequal. Styles 3-5, rising from the notches of the ovaries. Carpels 3-5, tongue-shaped, compressed, membranous, tumid in the middle, 1-celled, 1-seeded. Seeds compressed. Albumen wanting. Leaves abruptly or impari-pinnate.

† *Genera allied to Rutáceæ, but are not sufficiently known.*

49 POLE'MBRYUM. Fruit nearly sessile, echinated, of 5 carpels, which are connected together at the sides, at length separable, 2-valved, 1-seeded. Seeds ovate, furnished with a broad, entire, black spot at the base. Cotyledons fleshy, unequal.

50 PSEUDIÓSMA. Calyx 5-parted. Petals 5. Anthers 5, sessile, conniving. Ovary 5-lobed, girded by a crown-formed thick nectary. Carpels 5, each seated on a proper pedicel, rather kidney-shaped. Seeds solitary, not calyptrate. Leaves simple.

51 THYSA'NUS. Calyx of 5 sepals. Petals 5. Stamens 10, short. Styles 4, inserted in the sides of the ovaries, crowned by bifid stigmas. Drupes 4, oblong, recurved at the apex, woolly. Seeds solitary, ovate, involved at the base by a fringed fleshy tunic. Leaves pinnate.

52 TETRA'DIUM. Calyx 4-parted. Petals 4. Stamens 4, pilose. Ovary 4-lobed. Stigmas 4, awl-shaped. Capsules 4, roundish. Seeds solitary, arillate. Leaves impari-pinnate.

53 PHILAGÒNIA. Flowers dioecious. Calyx small, 4-toothed. Petals 4, valvate in the bud. Stamens 4. Style short, crowned by a large peltate stigma. Fruit capsular, 4-furrowed, 4-celled, 8-seeded. Seeds angular. Leaves impari-pinnate.

54 ASAPHE s. Calyx very short, 4-5-toothed. Petals 4-5, linear. Stamens 4-5. Styles and stigmas 3. Capsule pea-shaped, 4-furrowed, 4-celled, 4-valved, 4-seeded. Leaves ternate.

55 BARRALDE'IA. Calyx 5-cleft. Petals 5, bifid and unguiculate, Stamens 10. Ovary adhering to the tube of the calyx. Style 1. Leaves simple.

Tribe I.

RU'TEÆ (plants agreeing with *Rùta* in important characters). Andr. Juss. in mem. mus. 12. p. 461. Flowers regular. Calyx of 4 or 5 divisions. Petals equal in number with the divisions of the calyx. Endocarp not separable from the sarcocarp. Embryo within a fleshy albumen.—Shrubs or perennial herbs, with alternate simple or impari-pinnate leaves without stipulas.

I. PE'GANUM (from *πηγανον*, *peganon*, rue in Greek; resemblance). Lin. gen. 601. D. C. prod. 1. p. 712. Andr. Juss. in mem. mus. 12. p. 461. t. 16. no. 8.

LIN. SYST. *Dodecándria*, *Monogýnia*. Calyx 5-parted, permanent. Petals 5, almost equal. Stamens 15, shorter than the petals, some of them abortive; filaments smooth, dilated at the base. Anthers linear. Style simple, terminated by a trigonal stigma. Capsules substipitate, nearly spherical, 3-celled, 3-furrowed, 3-valved, many-seeded. Embryo straight.—Herbs with multifid leaves. Peduncles 1-flowered. Flowers white, with green veins. Every part of the plants has a strong unpleasant scent when bruised.

1 P. HA'RMALA (Lin. spec. 638.) ♃. H. Native of Spain, about Madrid, in sandy places, and of the Levant. Lam. ill. t. 401. Bull. herb. t. 343.—Blackw. t. 310. Root woody. Stem herbaceous. Leaves multifid into linear lobes. Flowers stalked. Calyxes entire.

Var. β, crithmifòlia (Retz. obs. 2. p. 34.) stem permanent; calyxes toothless. ♄. H. Native of Siberia, at the Caspian sea. Bieb. fl. taur. 1. p. 364. P. crithmifòlia, Georg. in herb. Willd.

Harmala or Syrian-Rue. Fl. July, Aug. Clt. 1570. Pl. 1 ft.

Cult. These plants will thrive well in any light sandy soil, and cuttings planted under a hand-glass will root freely. They will not flower unless they are planted in a warm situation, and they will require to be sheltered in severe weather in winter.

II. RU'TA (Du Theis observes that this word is not capable of explanation, being nearly the same in all the most ancient languages; viz. *ruz* in Runic; *rude*, *rata*, *ruta*, or *rutu* in Anglo-Saxon; *rutiza* in Sclavonian; *ruta* in Italian and Latin; *ruda* in Spanish; *ρυτη* in Greek; said to be from *ρυω*, to flow, in allusion to some reputed expelling qualities of the plants; hence *rue* in English and French.) Tourn. inst. t. 133. Lin. gen. no. 523. D. C. prod. 1. p. 709. Andr. Juss. in mem. mus. 12. p. 462. t. 17. no. 9.

LIN. SYST. *Octándria*, *Monogýnia*. Calyx short, 4-parted, falling off late. Petals 4, unguiculate, arched, for the most part jagged. Stamens 8, the 4 shortest opposite the petals; filaments awl-shaped, smooth; anthers ovate, blunt at the apex. Ovaries 4-lobed, seated on a short thick stipe, and surrounded by 8 nectariferous pores. Styles 4, constantly joined in one, terminated by a 4-furrowed stigma. Capsule subglobose, 4-celled, opening inwardly at the apex. Seeds angular-reniform, fixed to the inner angle of the cells. Albumen fleshy. Embryo arched, with a long radicle.—Perennial herbs or subshrubs, with pinnate or decompound, glaucous leaves. Flowers corymbose, greenish-yellow. Every part of the plants have a strong disagreeable smell.

§ 1. *Pinnàtæ. D. C. prod.* 1. *p.* 710. *Leaves truly pinnate; leaflets, especially the lateral ones, are jointed above the petiole. Fruit rather fleshy, indehiscent.—Rutèria, Medik. phil. bot.*

1 R. PINNA'TA (Lin. fil. suppl. 232.) stem arborescent; leaves impari-pinnate, floral ones reduced to the terminal leaflet; petals entire. ♄. G. Native of the Canary Islands, on rocks. Ker. bot. reg. t. 307. Leaflets entire or toothed.

Pinnate-leaved Rue. Fl. March, Aug. Clt. 1780. Shrub 6 feet.

§ 2. *Decompósitæ. D. C. prod.* 1. *p.* 710. *Leaves decompound and variously cut. Capsules dehiscent.*

* *Petals ciliated.*

2 R. BRACTEÒSA (D. C. prod. 1. p. 710.) leaves supra-decompound, hardly thrice as long as broad; leaflets oblong-cuneated, somewhat equal; bracteas large, somewhat cordate. ♄. F. Native of Sicily, about Palermo, and of the Island of Melos. R. Chalepénsis tenuifòlia, D'Urv. enum. p. 44.

Large-*bracted* Rue. Fl. June, July. Clt. 1819. Shrub 2 ft.

3 R. ANGUSTIFÒLIA (Pers. ench. 1. p. 462.) leaves supra-decompound, 4 times longer than broad; leaflets oblong-cuneated, almost equal; bracteas small, ovate. ♄. H. Native of the south of France, common among rocks in sunny situations. R. Chalepénsis, Vill. dauph. 4. p. 383. R. gravèolens *α*, Lin. spec. 548. R. Chalepénsis, var. *β*, Lin. mant. 69. Sims, bot. mag. t. 2311.—Mor. oxon. sect. 5. t. 35. f. 8. Leaflets narrow, very glaucous.

Narrow-leaved Rue. Fl. June, Sept. Clt. 1722. Shrub 2 ft.

4 R. MACROPHY'LLA (Sol. in bot. mag. t. 2018.) leaves pinnate; leaflets oblong, on short stalks, terminal one largest, lower ones cut into 3-5 leaflets. ♄. F. Native of the north of Africa, and about Aleppo. R. Chalepénsis, var. *α*, Lin. mant. 69.

Long-leaved Rue. Fl. June, Sept. Clt. 1772. Shrub 3 feet.

* * *Petals entire or somewhat toothed.*

5 R. MONTA'NA (Clus. hist. 2. p. 136.) leaves supra-decompound; leaflets all linear; petals entire. ♄. or ♃. H. Native of the south of Europe and north of Africa, among stones on dry hills. R. legítima, Jacq. icon. rar. 1. t. 76. R. sylvéstris, Mill. dict. no. 3. R. tenuifòlia, Desf. atl. 1. p. 336. This plant is corrosive, and has a very strong smell.

Mountain Rue. Fl. June, Sept. Clt. 1596. Pl. 2 or 3 ft.

6 R. GRAVE'OLENS (Lin. spec. 548. exclusive of var. *α* and *β*) leaves supra-decompound; leaflets oblong, terminal one obovate; petals entire or a little toothed. ♄. H. Native of the south of Europe, in sterile places. Very common in gardens. R. horténsis, Mill. dict. no. 1.—Duh. arb. 2. t. 61. Woodv. med. bot. 108. t. 37. Blackw. t. 7.—Plenck. icon. t. 332. The bruised leaves excoriate the lips and nostrils, if incautiously applied, as they often are, to counteract bad smells; *rue* being supposed powerfully to counteract contagion. Its internal use is unsafe, yet it has been known to be eaten with bread and butter in no small quantity, not altogether with impunity. *Rue* has a strong ungrateful odour, and a bitter, hot, penetrating taste; the leaves are so acrid as to irritate and inflame the skin, if they be much handled; it is said to possess these qualities more powerfully in an uncultivated state. Its virtues are extracted both by water and rectified spirit, but more powerfully by the latter. On instipating the spiritous tincture, very little of its flavour rises with the menstruum; most of the active parts of the rue being concentrated in the extract. In distillation with water, an essential oil separates, which is of a yellowish or brownish colour, a moderately acrid taste, and penetrating smell; the decoction instipated, yields a moderately warm, pungent, and bitterish extract. The seeds and capsules contain more oil than the leaves. From the experiments of Beaume, it appears that the recent herb contains but a very small portion of essential oil; thus from 21 lbs. of the leaves he scarcely obtained a drachm, while 10 lbs. of the seeds yielded 2 ounces. *Rue*

was much used by the ancients, who ascribed to it many excellent qualities. Hippocrates commends it as a resolvent and diuretic, and attributes to it the power of resisting contagion, and the action of other kinds of poisons; so that it was employed with this intention by Mithridates (see Pl. nat. hist. l. 28. c. 8.): this quality, though allowed by Boerhaave, is now generally discredited (Cullen. mat. med. 2. p. 365.). According to Bergius it is "alexiteria, pellens, emmenagoga, sudorifera, rubefaciens." It is, however, acknowledged to be a powerful astringent, and like other medicines of a fœtid kind, to possess attenuating, deobstruent, and anti-spasmodic powers, and to be peculiarly adapted to phlegmatic habits, or weak and hysterical constitutions, suffering from retarded or obstructed secretions. It is employed by some as a tea, and also externally in discutient and antiseptic fomentations. Among the common people the leaves are sometimes taken with treacle, on an empty stomach, as anthelmintic. A conserve, made by beating the fresh leaves with thrice their weight of fine sugar, is the most commodious form for using the herb in substance. The dose of the powdered leaves may be 15 to 20 grs. given twice or thrice a day. The officinal preparations "*oleum rutæ* and *extractum rutæ graveolens*," or oil of rue, is procured in the quantity of 59 grains of oil from 21 pounds of rue, which oil has the strong ungrateful odour and taste of the plant. When recently drawn, the colour is yellow, but by age it deepens to a brown, and deposits a brownish resinous sediment. It congeals at 40° Fahrenheit. This oil is stimulant, and antispasmodic; it is sometimes given in hysteria, and the convulsive affections of infants attendant on dentition, and is sometimes used as a rubefacient in palsy. The extract of *rue* is prepared like other simple extracts: it is inodorous, but has a bitter acrid taste. The medicinal properties are different from those of the plant, the stimulant and narcotic powers of which depend on the volatile oil it contains, which is dissipated during the instipation of the extract. The dose is from 10 to 15 grs. in pills. *Lewis*, *Woodville*, and *Thomson*.

"*Rue* was anciently also named *herb grace* or *herb of grace*, and it is to this day called *ave-grace* in Sussex, in allusion doubtless to *Ave-Maria, gratiâ plena;* and it is remarkable that Mary, in Hebrew, signifies bitter. Warburton says that *rue* had its name *herb of grace* from its having been used in exorcisms. When Ophelia, in Shakspeare's Hamlet, says to the Queen "There's rue for you and here's some for me; we may call it herb of grace o' Sundays:" the fair moralist has no reference to this plant being used in exorcisms, performed in churches on Sundays; but means only, that the Queen may with peculiar propriety on Sundays, when she solicits pardon for that crime which she has so much occasion to rue and repent of, call her rue *herb of grace*. It was, indeed, the common name for rue in Shakspeare's time; and Greene, in his Quip for an upstart Courtier, has this passage: "some of them smiled and said rue was called *herbegrace*, which though they scorned in their youth, they might wear in their age, and that it was never too late to say *miserere*." The gardener in Richard II. says of the Queen:

> "Here did she drop a tear; here in this place,
> I'll set a bank of rue, sour *herb* of *grace:*
> Rue even for ruth, here shortly shall be seen
> In the remembrance of a weeping queen."

Here the gardener plays upon the name, and might mislead an etymologist who knew no better. He might, with more truth, have called rue bitter than sour, and he whimsically enough makes it take the place of rosemary, which was the emblem of *remembrance*, as rue was of *grace*. Thus Perdita, in the Winter's Tale:

> "Reverend sirs,
> For you there's rosemary and rue, these keep
> Seeming and favour all the winter long:
> Grace and remembrance be to you both."

They are both evergreens, retaining their appearance and taste during the whole year, and therefore are proper emblems of remembrance and grace.

Rue seems to have been used formerly in nosegays; for the Clown in All's Well that End's Well, having said of the Countess, "she was the sweet-marjoram of the salad, or rather the herb of grace." Lafeu replies, "they are not salad-herbs, you knave, they are nose-herbs;" upon which the Clown, in character, remarks, "I am no great Nebuchadnezzar, sir, I have not much skill in grass:" thus punning upon the name of grace, as the gardener did upon the other name of rue. (Martyn).

Linnæus having observed that the *rue* moved one of its stamens every day to the pistil, Sir James Smith examined the *Rùta angustifòlia*, and found many of the stamens in the position which he describes, holding their anthers over the stigma; while those which had not come to the stigma were lying back upon the petals, as well as those which had already performed their office, had returned to their original situation. Trying with a quill to stimulate the stamens, he found them all quite devoid of irritability; they are strong, stout, conical bodies, and cannot, without breaking, be forced out of the position in which they happen to be. The same phenomenon has been observed in several other flowers, but it is no where more striking, or more easily examined than in the species of *rue*. Hence Sir James Smith concludes, that these plants are endued with a kind of spontaneous motion. This is not a very philosophical conclusion. To a similar cause we are taught to assign the same cause; and because we cannot excite the irritability, it does not therefore follow that the subject is not irritable.

Strong-scented or Common Rue. Fl. June, Sept. Clt. 1562. Shrub 3 feet.

7 R. divaricà'ta (Tenor. cat. hort. neap. 1819. p. 42. but not of Saltzm.) leaves supra-decompound; leaflets obovately cuneated, equal; petals entire or a little toothed. ♄. H. Native of the south of Italy, also of Greece and Tauria, among rocks exposed to the sun. Tenor. fl. nap. 1. t. 36. An intermediate plant between *R. gravèolens* and *R. angustifòlia*.—Lam. ill. t. 345. f. 1.

Divaricate Rue. Fl. May, Sept. Clt. 1820. Shrub 3 feet.

8 R. crithmifòlia (Moric. ined. D. C. prod. 1. p. 710.) leaves supra-decompound; leaflets oblong-linear, rather cuneated, about equal; petals entire or a little toothed. ♄. H. Native of Germany between Duino and Trieste, as well as of the Levant, on rocks.

Samphire-leaved Rue. Shrub 2 feet.

9 R. Córsica (D. C. prod. 1. p. 710.) leaves supra-decompound; leaflets obovate, almost equal; racemes almost simple; pedicels elongated, 1-flowered, stiffly divaricating; petals entire. ♄. F. Native of Corsica, on the mountains. R. montàna, spinòsa álba, Bocc. mus. p. 70. t. 59. R. divaricàta, Saltzm. in flora. 1821. p. 109. Corymbs bifid from the base; branches racemose. The old branches, if Bocconi's figure is to be depended upon, are spiny. Flowers yellow, but according to Bocc. they are white. Perhaps two distinct plants are here confused.

Corsican Rue. Fl. June, Sept. Clt. 1818. Shrub 2 feet.

10 R. albiflòra (Hook. exot. fl. 79.) leaves supra-decompound; leaflets obovate, glaucous, pubescent, somewhat auricled, terminal one large, obcordate; branches of panicle bracteate; petals entire, shorter than the stamens; ovary on a pedicel. ♄. G. Native of Nipaul. R. Dampàtis, Hamilt. mss. Flowers white. An elegant plant, clothed with glandular pubescence.

White-flowered Rue. Fl. July, Sept. Clt. 1823. Sh. 2 ft.

Cult. All the species of *rue* are of easy cultivation. They

will grow freely in any light rich soil; and cuttings, planted under a hand-glass, will soon strike root. They may be also obtained from seeds, which in many species ripen in abundance.

III. APLOPHY'LLUM (from *απλοος, aploos*, simple, and *φυλλον, phyllon*, a leaf; leaves simple, not compound, as in *Rue*). Andr. Juss. in mem. mus. 12. p. 464. t. 17. no 10.—Ruta, sects. 3 and 4. D. C. prod. 1. p. 711.

LIN. SYST. *Decándria, Monogýnia.* Calyx short, 5-parted, falling off late. Petals 5, unguiculate, flat, entire. Stamens 10, the 5 shortest opposite the petals; filaments dilated at the base and villous on the inside; anthers each furnished with a minute gland at the point. Ovary 5-lobed, surrounded by a nectariferous ring. Styles 5, constantly joined in one, dilated from the base to the apex, and terminated by a capitate papillose, 5-furrowed stigma. Capsules 5-celled, 5-furrowed, opening inwardly at the apex. Seeds reniform, scrobiculate, or tuberculate, fixed to the inner angle of the cells. Albumen fleshy. Embryo arched, with a long radicle.—Perennial herbs, rarely shrubs. Leaves simple, seldom ternate, glaucous. Flowers corymbose, yellow, rarely white. This genus has the strong disagreeable smell of *rue*, as well as possessing the same medical qualities, but in a lesser degree.

§ 1. *Trifòlia, D. C. prod.* 1. *p.* 711. *Leaves 3, together, approximate, quite entire, lower and uppermost ones solitary, undivided.*

1 A. PATAVÌNUM; middle leaves 3 together, linear, tapering to the base, quite entire; corymbs crowded; calyxes villous; petals entire. ♃. H. Native of the mountain Saxo-Nigro, at Arqua, near Padua. Rùta Patavìna, Lin. gen. 549.—Michel. gen. t. 19. Leaves furnished with a tooth or lobe at the base. Flowers yellow, with a green central rib.

Padua Aplophyllum. Fl. June, July. Clt. 1819. Pl. 1 ft.

2 A. DICHÓTOMUM; middle leaves 3 together, linear, tapering to the base, quite entire; corymbs loosely panicled, dichotomous; calyxes a little fringed. ♃. F. Native of Persia. Rùta dichótoma, D. C. prod. 1. p. 711. Flowers yellow. Stamens much dilated at the base.

Dichotomous Aplophyllum. Pl. 1 foot.

3 A. PUBE'SCENS; leaves nearly all 3 together, lanceolate, pubescent, entire, lateral ones very short; corymbs many-flowered; calyxes and ovaries villous. ♃. H. Native of Spain, near Aranjuez. R. pubéscens, Willd. enum. 446. R. Patavìna, Poir. dict. 6. p. 335. Lam. ill. t. 345. f. 2. Flowers yellow. Filaments a little fringed at the base, hardly dilated.

Pubescent Aplophyllum. Fl. June, Aug. Clt. 1816. Pl. 1 ft.

§ 2. *Integrifòlia. Leaves undivided, entire, solitary.*

4 A. CORDA'TUM; leaves entire, cordate, stem-clasping; corymbs many-flowered; petals oval-oblong, quite entire; filaments smooth. ♃. F. Native of Nipaul in Gosainsthan. Rùta cordàta, D. Don, prod. fl. nep. 206. Root thick, tuberous. Stem simple. Flowers small, yellow.

Cordate-leaved Aplophyllum. Pl. 1 foot.

5 A. FRUTICULÒSUM; leaves entire, ovate-lanceolate, bluntish, and are as well as the calyxes villous; corymbs few-flowered; petals oblong; filaments and calyxes ciliated at the base; ovaries smooth. ♄. ♃. F. Native about Damascus. R. fruticulòsa, Labil. syr. 1. p. 13. t. 4.—Buxb. cent. 2. p. 30. t. 28. f. 1. Flowers yellowish.

Shrubby Aplophyllum. Pl. 1 foot.

6 A. TUBERCULA'TUM (Andr. Juss. in mem. mus. 12. p. 528. t. 17. no. 10.) leaves entire, pilose, under surface as well as stems and capsules tuberculated; capsules rather pilose; cells 2-seeded. ♃. F. Native of Egypt and Nubia. Rùta tuberculàta, Forsk. descr. 86. Flowers small, yellow. Corymbs dichotomous. Petals oblong.

Var. α, Forskàhlii (D. C. prod. 1. p. 711.) leaves linear-lanceolate.

Var. β, Montbrètii (D. C. prod. 1. p. 711.) leaves obovately cuneated.

Tubercled Aplophyllum. Pl. 1 foot.

7 A. GLA'BRUM; leaves entire, oblong-linear, glandular beneath as well as the stems, smooth on both surfaces as well as the stems, calyxes, and capsules; petals oblong-linear. ♃. F. Native between Mosul and Bagdad. Rùta glàbra, D. C. prod. 1. p. 711. Corymbs dichotomous. Flowers yellowish. Filaments fringed.

Smooth Aplophyllum. Pl. 1 foot.

8 A. VILLÒSUM; leaves entire, lower ones oblong, the rest linear, and are as well as the stems pubescent; calyxes and ovaries hairy; petals oblong. ♃. H. Native of Caucasus and Iberia, in fields exposed to the sun. Rùta villòsa, Bieb. fl. taur. 1. p. 310. R. parviflòra, Desf. cor. Tourn. t. 54.—Buxb. cent. 2. t. 28. f. 2. Flowers small, yellowish, racemose.

Villous Aplophyllum. Fl. June, Aug. Clt. 1818. Pl. 1 ft.

9 A. LINIFÒLIUM; leaves entire, oblong-lanceolate, tapering to the base, and are as well as the stems, smoothish; calyxes very short, a little ciliated; ovaries villous; petals ovate. ♃. H. Native of Spain near Valentia, Cyprus, and various parts of Greece. Rùta linifòlia, Lin. spec. 549. Andr. bot. rep. t. 565. Smith, fl. græc. 370.—Bocc. mus. t. 73. f. 3. Flowers yellow, corymbose.

Flax-leaved Aplophyllum. Fl. Ju. Sept. Clt. 1752. Pl. 1 ft.

10 A. SUAVE'OLENS; leaves entire, spatulately-lanceolate, glaucous, smoothish; calyxes a little fringed; ovaries quite smooth; petals ovate. ♄. H. Native of Tauria and Bessarabia, in exposed places. Rùta suavèolens, D. C. prod. 1. p. 711. Rùta linifòlia, Bieb. fl. taur. 1. p. 309. Rùta linifòlia, var. grandiflòra, Sims, bot. mag. t. 2254. Flowers yellow, corymbose, having the smell of those of *Primula officinàlis*.

Var. β, congésta (D. C. prod. 1. p. 711.) flowers few, but crowded. ♃. H. Native on Mount Olympus. Flowers having the scent of those of the lemon.

Sweet-scented Aplophyllum. Fl. June, Sept. Clt. 1800. Shrub 2 feet.

11 A. BUXBAU'MII; leaves entire, lanceolate, tapering into the petiole, somewhat puberulous; branches of panicle dichotomously corymbose, divaricating, compressed at the forks; filaments fringed at the base. ♃. F. Native of Thrace, near Rodosto in fields, as well as of Troy and of Syria. Rùta Buxbaúmii, D. C. prod. 1. p. 711.—Buxb. cent. 2. t. 28. f. 2. Flowers yellowish. Petals oblong. Ovary smoothish.

Buxbaum's Aplophyllum. Pl. 1 foot.

12 A. ACUTIFÒLIUM; leaves entire, oblong, on very short stalks, acute at both ends, and are, as well as the stems, smooth; lower ones opposite; panicle corymbose, dichotomous; calyxes very acute, a little fringed; capsules smooth. ♃. F. Native of Persia, between Kermancha and Amadan. Rùta acutifòlia, D. C. prod. 1. p. 711. Flowers yellowish.

Acute-leaved Aplophyllum. Pl. 1 foot.

13 A. LINEA'RE; leaves entire, linear, smooth, dotted beneath; corymbs few-flowered, dichotomous; petals linear-oblong; capsules smooth, 3-lobed. ♃. H. Native of the south of Siberia. Rùta lineàris, D. C. prod. 1. p. 712. Flowers yellowish.

Linear-leaved Aplophyllum. Pl. 1 foot.

14 A. THESIOÌDES; leaves entire, linear-lanceolate, smooth; stems puberulous towards the top; corymbs crowded; sepals roundish; filaments dilated at the base and hairy inside. ♃. H. Native of the eastern shore of the Caspian sea. Rùta thesioìdes,

Fisch. in litt. D. C. prod. 1. p. 712. Flowers yellowish. Very like *A. Dahùricum*.

Thesium-like Aplophyllum. Pl. $\frac{1}{2}$ foot.

15 A. Dahu'ricum; leaves entire, linear-lanceolate, and are as well as the calyxes smooth; corymbs few-flowered; sepals and stamens a little fringed at the base; ovaries smooth; petals oblong. ♃. H. Native of Dahuria, in exposed fields. Rùta Dahùrica, D. C. prod. 1. p. 712. Péganum Dahùricum *β*, Lin. spec. 638.—Rùta, Gmel. sib. 4. t. 68. f. 2.—Amm. ruth. no. 92. Petals pale-yellow, sometimes 6 in number. Stamens double the number of the petals, not triple that number, as in *Péganum*. Root fusiform, with many simple stems rising from the neck. There is a variety of this plant with white flowers, mentioned in Amm. ruth. no. 91.

Dahurian Aplophyllum. Fl. July, Aug. Clt. 1816. Pl. 1 ft.

16 A. rosmarinifòlium (Pers. ench. 1. p. 465.) leaves linear, dotted beneath; stem very much branched; root fusiform. ♃. F. Native of Spain, according to the herbarium of Jussieu. Flowers yellowish.

Rosemary-leaved Aplophyllum. Pl. 1 foot.

Cult. These plants will grow in any light rich soil, but in a poor dry light soil they will endure our winter better. Cuttings planted under a hand-glass will root readily, and many of them may be increased by dividing the plants at the root, but by seeds is the best and surest method; these are sure to ripen in abundance if the summer proves favourable.

Genus allied to Rùteæ.

IV. CYMINO'SMA (from *κυμινον, kyminon*, cumin-seed, and *οσμη, osme*, smell; fruit smelling like cumin-seed). Gært. fruct. 1. p. 280. D. C. prod. 1. p. 722. Andr. Juss. in mem. mus. 12. p. 465. t. 17. no. 11.—Jambolífera, Lin. gen. no. 479. but not of Houtt. nor Gært. and excluding the synonym of Rumphius.

Lin. syst. *Octándria, Monogýnia.* Calyx of 4 orbicular sepals or deeply divided into 4 orbicular segments, 2 of which are rather smaller than the rest. Petals 4, narrow, lanceolate, revolute at the apex. Stamens 8, the 4 shortest are opposite the petals; filaments flat, awl-shaped, pilose at the base; anthers ovate, versatile. Ovary seated on a fleshy, octangular disk. Style 1, erect, smooth, terminated by a 4-furrowed stigma. Berry 4-celled; loculaments papery inside, 1-seeded. Embryo with a short radicle and elliptical cotyledons.—Trees with large, opposite, entire leaves, having the smell of the fruit. Flowers corymbose, white. Fruit smelling like cumin-seed. The species are insufficiently known.

1 C. pedunculà'ta (D. C. prod. 1. p. 722.) leaves elliptical-lanceolate, obtuse; petals linear-lanceolate, thrice as long as the calyx. ♄. S. Native of Ceylon. Jambolífera, Lin. fl. zeyl. 58. exclusive of the synonymes. Jambolífera pedunculàta, Vahl. symb. 3. p. 52. t. 61. Dryan. l. c. Perin-panel, Rheed. mal. 5. t. 15.? Gært. fruct. 1. p. 281. in a note. Corymbs trichotomous. Flowers white. The berries are called jambol; they are black and juicy, of a sweetish acid taste, esculent.

Stalked-fruited Cyminosma. Clt. 1800. Tree 20 feet.

2 C. Chine'nsis (Spreng. syst. 2. p. 216.) leaves ovate, emarginate; petals lanceolate, thrice as long as the calyx. ♄. G. Native of the south of China. Jambolífera pedunculàta, Lour. coch. p. 230. Corymbs racemose. Flowers white. Fruit ovate-oblong, almost cylindric, 1-seeded, blunt, black, juicy, sweetish-acid, esculent.

China Cyminosma. Tree 20 feet.

3 C. Ake'nda (Gært. fruct. 1. t. 58.) leaves? petals oblong, pubescent outside, a little longer than the calyx. ♄. S. Native of Ceylon. Ankœnda, Herm. mus. 73. Burm. fl. zeyl. 27. Oil of cumin is extracted from this tree.

Akenda Cyminosma. Tree 20 feet.

4 C. odora'ta (D. C. prod. 1. p. 722.) leaves ovate, obliquely truncate at the base, dotted beneath; corymbs terminal, racemose; berries 1-seeded from abortion. ♄. G. Native of Cochin-china, in gardens. Jambolífera odoràta, Lour. coch. 231. Calyptránthes odoràta, Martyn. Flowers white. Berries ovate, small, white. The leaves have the smell of cumin; the young leaves are put into salads, and are not unpleasant.

Sweet-scented Cyminosma. Clt. 1818. Shrub 6 feet.

5 C. resinòsa (D. C. prod. 1. p. 722.) leaves oblong; peduncles axillary, many-flowered; berries roundish, 4-celled. ♄. S. Native of Cochin-china. Jambolífera resinòsa, Lour. coch. 1. p. 284. Calyptránthes resinòsa, Martyn. A middle-sized tree, with tough, resinous bark. Flowers white. Berries roundish, small, black. The fishermen of Cochin-china dye their nets in a strong decoction of the roots, to prevent their rotting.

Resinous-barked Cyminosma. Tree 20 feet.

Cult. These trees will thrive well in a mixture of loam, peat, and sand; and ripened cuttings will strike root if planted in a pot of sand, placed under a hand-glass, in a moderate heat.

Tribe II.

DIO'SMEÆ-EUROPÆA'NÆ. Andr. Juss. in mem. mus. 12. p. 467. Flowers irregular. Disk wanting. Ovaries 5, distinct. Seeds covered with a thin, dark, shining testa. Embryo with a short radicle, and close, ovate, thick cotyledons. Albumen fleshy, white. European herbs with pinnate leaves.

V. DICTA'MNUS (an ancient name of what is supposed to be *Origànum Dictámnus, Fraxinélla* because the leaves resemble those of *Fráxinus*, the ash). Lin. gen. no. 522. D. C. prod. 1. p. 712. Andr. Juss. in mem. mus. 12. p. 467. t. 18. no. 12.

Lin. syst. *Decándria, Monogýnia.* Calyx deciduous, 5-parted, unequal. Petals 5, unguiculate, unequal. Stamens 10, declinate; filaments awl-shaped, filiform, unequal, with glandular tubercles at the apex; anthers roundish. Style 1, declinate, striated lengthwise, terminated by a papillose, blunt stigma. Capsule stipitate, composed of 5 carpels, which are connected on the inside, compressed, 2-seeded.—Strong smelling herbs, with impari-pinnate, exstipulate leaves, with 4-6 pairs of serrulate leaflets, full of pellucid dots. Racemes terminal. Stems glandular at the apex, as well as the pedicels, calyxes, and petals.

1 D. Fraxine'lla (Pers. ench. 1. p. 464.) leaflets 4-5 pairs, cordate at the base, acute at the apex, finely serrulated; racemes long; calyx unequal. ♃. H. Native of the south of Europe, particularly in Germany, France, Spain, Austria, and Italy. D. álbus, Lin. spec. 548. Jacq. austr. 5. t. 428. Woodv. med. bot. 316. t. 116. Lam. ill. t. 344. f. 1. Fraxinélla, Clus. pann. 54. It is called by Gerarde *Bastard or False Dittany*, and by Parkinson, *False White Dittany*. Seeds pear-shaped, black, shining. The whole plant, especially when gently rubbed, emits an odour like that of lemon-peel, but when bruised it has something of a balsamic scent. This fine scent is strongest in the pedicels of the flowers, which are covered with glands of a rusty-red colour, exuding a viscid juice or resin, which exhales in vapour, and in a dark place may be seen to take fire. The root was formerly used in medicine, and it is said with much success, as a drastic opiate. This plant, for its beauty and fine scent, deserves a place in every collection. The varieties are as follows:

Var. α, purpùrea (D. C. prod. 1. p. 712.) petioles obscurely edged; petals pale-purple, striped with deeper veins. D. rùbra, D. Fraxinélla, Link. enum. 1. p. 398.

Var. β, álba (D. C. prod. 1. p. 712.) petioles with rather broader edges; petals white. D. álbus, Link. enum. 1. p. 398.

Fraxinella. Fl. May, June. Clt. 1596. Pl. 1 to $1\frac{1}{2}$ foot.

2 D. angustifòlia (Sweet, fl. gard. n. s. t. 93.) leaflets 4-5 pairs, alternate, ovate-lanceolate, acuminated, finely serrulated; racemes long; calyx nearly equal. 4. H. Native of the Altaian mountains. Flowers purple.

Narrow-leaved Fraxinella. Fl. May, June. Clt. 1828. Pl. 2 feet.

Cult. The species of *Fraxinélla* will grow in any common garden-soil, and are easily increased by seeds, which ripen in abundance. They are well adapted for flower-borders, being very shewy.

Tribe III.

DIO'SMEÆ-CAPE'NSES. Andr. Juss. in mem. mus. 12. p. 469. Flowers regular. Petals 5, very rarely wanting. Disk adhering to the calyx. Stamens 5, perigynous. Ovaries 1-5, joined in one. Seeds covered with a thin shining testa, usually crested at the apex. Albumen very thin or wanting. Embryo with a short radicle and ovate cotyledons, not rarely multiple. Neat heath-like shrubs, with entire or crenated leaves. Natives of the Cape of Good Hope.

VI. CALODE'NDRON (from *καλος*, *kalos*, beautiful, and *δενδρον*, *dendron*, a tree; the leaves are permanent, and the flowers are flesh-coloured). Thunb. prod. 44. D. C. prod. 1. p. 712. Andr. Juss. in mem. mus. 12. p. 460. t. 19. no. 15.

Lin. syst. *Pentándria; Monogýnia.* Calyx short, 5-parted, deciduous. Disk short, tubular. Petals 5, lanceolate, inserted in the base of the disk, hispid from starry hairs. Stamens 10, 5 of which are sterile and petal-like, tubercled, ending in an ovate gland, these are opposite the petals; the 5 fertile ones bearing ovate anthers, which are glandular at the apex. Style oblong, deflexed, ending in a 5-furrowed stigma, which is hardly broader. Capsule tubercled, 5-angled, 5-celled, 5-valved; cells 2-seeded.—A tree with opposite, simple, crenated large leaves, and terminal panicles of flowers.

1 C. Cape'nsis (Thunb. prod. 44.). ħ. G. Native of the Cape of Good Hope. Lam. journ. hist. nat. 56. t. 3. Dictámnus calodéndron, Lam. ill. t. 344. f. 2. Poir. suppl. 2. p. 476. Dictámnus Capénsis, Lin. fil. suppl. 232. Pallàsia Capénsis, Houtt. Branches opposite, or 3 in a whorl. Panicle trichotomously divided. Pedicels compressed, dilated under the flower. Flowers flesh-coloured.

Cape Calodendron. Clt. 1789. Tree 20 feet?

Cult. This tree is supposed to be one of the finest at the Cape of Good Hope; its fruit resembles that of a chesnut. The plant will grow freely in a mixture of loam and peat; and ripened cuttings will strike root readily, if planted in a pot of sand, and placed under a hand-glass, but care must be taken to plant them soon enough to be rooted before they drop their leaves (the tree being deciduous) or they will not root (Sweet).

VII. ADENA'NDRA (from *αδην*, *aden*, a gland, and *ανηρ ανδρος*, *aner andros*, a male; the anthers terminate in a globose gland). Willd. enum. 256. Bartl. and Wendl. ex Andr. Juss. in mem. mus. 12. p. 470. t. 19. no. 16.—Glandulifòlia, Wendl. coll. 1. t. 10. O'ckia and Okènia, Dietr. Diósma spec. of authors. Hartògia spec. of Berg.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted, dotted. Disk adhering to the bottom of the calyx, bearing the stamens on the margin. Petals 5, with short claws, spreading. Filaments 10, hispid, the 5 opposite the petals sterile, each ending in a thickened, concave, or globose gland, the 5 fertile ones shortest, terminated by large, egg-shaped anthers, each furnished at the apex with a shell-like, or rarely globose, pedicellate gland, which is at first erect, then refracted. Style shorter than the calyx, dilated at the apex into a depressed-globose 5-lobed stigma. Carpels 5, compressed, joined together, covered with stipitate tubercles or glands, shorter than the calyx. Seeds 1 or 2 in each carpel.—Small, heath-like shrubs, with alternate, rarely opposite, flat, coriaceous leaves, full of glandular dots, and appear as if they were crenated on the margins, callose at the apex, on short stalks, which are furnished with two glands at their base. Flowers whitish, flesh-coloured, or reddish, large, usually solitary at the tops of the branches, seldom umbellate, usually with 2 opposite bracteas below each flower.

§ 1. *Flowers nearly sessile. Glands of anthers shell-formed.*

1 A. coria'cea (Licht. in Rœm. et Schult. syst. 5. p. 452.) leaves scattered, oblong, obtuse, revolute, quite smooth; flowers large, usually solitary on the tops of the branches; segments of calyx blunt, crenulated. ħ. G. Native of the Cape of Good Hope. Diósma coriàcea, D. C. prod. 1. p. 713. Spreng. syst. 1. p. 784.

Coriaceous-leaved Adenandra. Fl. April, July. Clt. 1720. Shrub 1 to 2 feet.

2 A. biseria'ta (Meyer. in Bartl. et Wendl. dios.) leaves crowded, oblong, with a recurved mucrone, revolute, scabrous from 2 rows of glands beneath; calyxes very villous; flowers on very short peduncles. ħ. G. Native of the Cape of Good Hope. Diósma biseriàta, Spreng. syst. 1. p. 784. Flowers large, smooth, pink?

Two-rowed-glanded Adenandra. Shrub 1 to 2 feet.

3 A. uniflòra (Willd. enum. 256.) leaves scattered, oblong-lanceolate, somewhat pointed, revolute, smooth, dotted beneath; flowers solitary, terminal; calyxes ciliated; petals obovate. ħ. G. Native of the Cape of Good Hope. Diósma uniflòra, Lin. spec. 287. Schrad. sert. hann. 1. t. 8. Curt. bot. mag. 273. Hartògia uniflòra, Berg. cap. 71. Eriostèmon uniflòra, Smith in Rees' cycl. 13. no. 4. Flowers large, white inside, and pinkish outside. Filaments very hairy. The flowers are sometimes only 4-petalled and 4-anthered.

One-flowered Adenandra. Fl. April, July. Clt. 1775. Shrub 1 to 2 feet.

4 A. acumina'ta (Sweet, hort. brit. p. 88.) leaves scattered, roundish, ovate, rather cordate, acuminated, ciliated, spreading; peduncles terminal, umbellate. ħ. G. Native of the Cape of Good Hope. Diósma acuminàta, Lodd. bot. cab. t. 493. Agathósma acuminàta, Willd. enum. p. 260. Búcco acuminàta, Wendl. coll. 1. p. 79. t. 28. Flowers large, white; filaments very hairy.

Acuminate-leaved Adenandra. Fl. April, July. Clt. 1812. Shrub 1 to 2 feet.

5 A. amœ'na (Sweet, hort. brit. p. 88.) leaves scattered, oblong or oval, bluntish, smooth, dotted beneath; flowers solitary, sessile, terminal; calyxes a little ciliated; petals orbicular, a little mucronate. ħ. G. Native of the Cape of Good Hope. Diósma amœ'na, Lodd. bot. cab. t. 161. Ker. bot. reg. t. 553. Flowers large, smooth, whitish above, and reddish beneath. Glandulifòlia uniflòra ovàta, Lich. in Wendl. coll. 1. t. 33.? Adenándra glandulòsa, Lich. in Rœm. et Schult. syst. 5. p. 450.?

Pleasing Adenandra. Fl. April, July. Clt. 1798. Shrub 1 to 2 feet.

6 A. speciòsa (Link. enum. 1. p. 256.) leaves scattered, oblong or obovate, revolute, dotted beneath, smooth, but a little fringed on the edges; flowers terminal, umbellate; calyxes fringed; petals with smooth margins. ħ. G. Native of the Cape of Good Hope. Diósma speciòsa, Sims, bot. mag. t. 1271. Diósma cistoìdes, Lam. dict. 2. p. 288.? Flowers pink, large.

Var. a, multiflòra (D. C. prod. 1. p. 713.) flowers from 1 to 12; branches ascending.

Var. β, *pauciflòra* (D. C. prod. 1. p. 713.) flowers 1 to 2; branches erect.

Shewy Adenandra. Fl. April, July. Clt. 1790. Sh. 1 to 2 ft.

7 A. umbella'ta (Willd. enum. 257.) leaves oblong or obovate, dotted beneath, fringed on the edges; calyxes smooth; petals fringed. ♄. G. Native of the Cape of Good Hope. Glandulifòlia umbellàta, Wendl. coll. 1. t. 10. Delaun. herb. amat. t. 163. Hartògia umbellàta, Bergius. Flowers pink, terminal, umbellate.

Umbel-flowered Adenandra. Fl. April, July. Clt. 1790. Shrub 1 to 2 feet.

8 A. villòsa (Licht. in Rœm. et Schult. syst. 5. p. 452.) leaves crowded, ovate-oblong, fringed, pubescent and glandular beneath; flowers terminal, umbellate; calyxes, petals, and stamens fringed. ♄. G. Native of the Cape of Good Hope. Diósma villòsa, Thunb. prod. p. 43. Hartògia villòsa, Berg. cap. 70. Flowers pink.

Villous Adenandra. Fl. April, July. Clt. 1786. Sh. 1 to 2 ft.

9 A. cuspida'ta (Meyer in Rœm. et Schult. syst. 5. p. 452.) leaves crowded, upper ones very densely imbricated, ovate, acuminated, quite smooth; flowers almost sessile; calyxes and petals fringed. ♄. G. Native of the Cape of Good Hope. Diósma cuspidàta, Spreng. syst. 1. p. 785. Flowers pink.

Pointed-leaved Adenandra. Fl. April, July. Clt.? Shrub 1 to 2 feet.

§ 2. *Flowers on long peduncles. Glands of filaments globose.*

10 A. fra'grans (Rœm. et Schult. syst. 5. p. 451.) leaves scattered, spreading very much, ovate-oblong, glandular, a little crenulated; pedicels clammy, aggregate, umbellate, almost twice as long as the leaves; calyxes reflexed; petals crenulate. ♄. G. Native of the Cape of Good Hope. Diósma fràgrans, Sims, bot. mag. t. 1519. Flowers rose-colour.

Sweet-scented Adenandra. Fl. May, July. Clt. 1812. Shrub 1 to 2 feet.

11 A. margina'ta (Rœm. et Schult. syst. 5. p. 452.) leaves scattered, smooth, diaphanous, cordate, lower ones ovate, upper ones lanceolate; umbels terminal; sterile stamens bearded. ♄. G. Native of the Cape of Good Hope. Diósma marginàta, Thunb. prod. 1. p. 713. Flowers pale flesh-coloured.

Marginate-leaved Adenandra. Fl. April, July. Clt. 1806. Shrub 1 to 2 feet.

12 A. linea'ris (Andr. Juss. mem. mus. 12. p. 470.) leaves opposite, linear, obtuse, spreading; branches and pedicels smooth; flowers terminal, on long, usually solitary pedicels. ♄. G. Native of the Cape of Good Hope. Diósma lineàris, Thunb. fl. cap. 2. p. 136.

Linear-leaved Adenandra. Fl. April, July. Clt. 1800. Shrub 1 foot.

13 A. rosmarinifòlia (Andr. Juss. mem. mus. 1. c.) leaves lanceolate-linear, revolute, smooth; peduncles axillary and terminal; capsules very blunt. ♄. G. Native of the Cape of Good Hope. Diósma rosmarinifòlia, Lam. ill. 2. p. 81. Flowers reddish.

Rosemary-leaved Adenandra. Shrub 1 to 2 feet.

Cult. This is a genus of beautiful little greenhouse shrubs; they will thrive best in a mixture of sand and peat, with a little turfy loam. The young tops, before they begin to throw out their buds, made into cuttings, and planted neatly in a pot of sand, with a bell-glass placed over them, will root without heat.

VIII. COLEONE'MA (from κολεος, *koleos*, a sheath, and νημα, *nema*, a filament; the filaments are fixed into a sheath-like recess of the petals). Bartl. et Wendl. dios. ex Andr. Juss. in mem. mus. 12. p. 471. t. 19. no. 17. Diósma, spec. of authors. Adenándra, spec. Rœm. et Schult. syst. 5.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted. Disk adnate to the base of the calyx, with a 5-lobed margin. Petals 5, with a spreading border. Filaments 10, the 5 sterile ones shortest, and opposite the petals, and adnate to their base, and fitted into a channel, tapering at the top into a gland; the 5 alternate ones opposite the lobes of the disk; anthers roundish, each furnished at the apex with a minute sessile gland. Style about the length of the stamens, terminated by a capitate, papillose, obscurely 5-furrowed stigma. Fruit of 5 joined carpels, each furnished with a little horn on the outside at the apex, compressed, rugged with dots. Seeds 1 or 2 in each carpel.—Small heath-like shrubs, with short, linear, scattered, very acute leaves, which are beset with glandular dots. Flowers white, axillary towards the tops of the branches, solitary, on short peduncles, furnished with many sepal-like, close-pressed bracteas.

1 C. a'lba (Bartl. et Wendl. l. c. Andr. Juss. l. c.) leaves linear, keeled, mucronate, with cartilaginous scabrous margins; sterile filaments fitted into the plaits of the petals. ♄. G. Native of the Cape of Good Hope. Diósma álba, Thunb. fl. cap. 2. p. 126. Adenándra álba, Rœm. et Schult. syst. 5. p. 451. Diósma rùbra, Hortul. Flowers white. Calyxes and bracteas fringed.

White-flowered Coleonema. Fl. April, July. Clt. 1800. Shrub 1 to 2 feet.

2 C. filifórmis (Andr. Juss. l. c.) ♄. G. Native of the Cape of Good Hope. Diósma filifórmis, D. C. herb. ex Andr. Juss. We know nothing of this plant.

Filiform Coleonema. Shrub 1 to 2 feet.

3 C. aspalathoìdes (Andr. Juss. l. c.) leaves oblong or linear, triquetrous, dotted beneath, hooked at the apex; flowers nearly sessile, solitary, or twin. ♄. G. Native of the Cape of Good Hope. Diósma aspalathoìdes, herb. Burm. but not of Lam. Flowers white.

Aspalathus-like Coleonema. Shrub 1 foot.

Cult. These beautiful little shrubs will grow best in a mixture of peat and sand, with the addition of a little loam. The young tops taken off, and made into cuttings, and planted neatly in a pot of sand, and a bell-glass placed over them, will root without heat.

IX. DIO'SMA (from διος, *dios*, divine, and οσμη, *osme*, smell; the bruised leaves have an exquisite smell). Bergius, cap. Willd. enum. p. 257. Bartl. et Wendl. dios. Wendl. coll. 1. p. 1. Diósma, sect. 5. Eudiòsma, D. C. prod. 1. p. 716. exclusive of no. 42, 43. and 53.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted. Disk adnate to the bottom of the calyx, with a free glandular 5-furrowed, 5-lobed margin; lobes alternating with the segments of the calyx. Petals 5, entire. Stamens 5, alternating with the petals, and shorter; filaments smooth, filiformly-subulate; anthers roundish, each furnished with a sessile gland at the apex. Style short, usually a little arched, smooth, ending in a capitate stigma, which is scarcely broader. Fruit of 5 joined carpels, each furnished with a short horn on the outside at the apex. Seeds 1-2 in each carpel, sometimes furnished with a jagged-crested appendix at the apex, especially *D. hirsùta* (see Gært. fruct. 1. p. 82. t. 94.).—Small heath-like shrubs, with scattered or opposite, linear-acute, channelled, sharply serrulated or fringed leaves, which are covered with glandular dots. Flowers white or red, sometimes solitary at the tops of the branches, sometimes corymbosely-aggregate; pedicels short, furnished with minute bracteas, which are sometimes opposite.

* *Flowers sub-corymbose. Leaves opposite.*

1 D. succule'nta (Wendl. coll. 1. t. 1.) leaves imbricate, in 4 rows, opposite, linear, keeled, acute, thickish, ciliated; corymbs few-flowered, terminal. ♄. G. Native of the Cape

of Good Hope. D. pinifòlia, Fisch. D. decussàta, Lam. 2. p. 283.? D. rigídulum, Willd.? Hartógia succulénta, Berg. cap.—Pluk. t. 279. f. 4.—Comm. rar. t. 1. and Seb. thes. 2. t. 40. f. 5. Flowers white.

Succulent Diosma. Fl. April, June. Shrub 2 feet.

2 D. oppositifòlia (Thunb. fl. cap. 2. p. 132.) leaves opposite, trigonal, blunt, fringed; corymbs terminal, few-flowered. ♄. G. Native of the Cape of Good Hope. Lin. spec. 286. Flowers white.

Opposite-leaved Diosma. Fl. Feb. July. Clt. 1774. Shrub 1 to 2 feet.

3 D. recu'rva (Nees in Schlecht. Linnæa. 5. p. 51.) smooth, erect, branched; branches very leafy; flowers dichotomous, rarely somewhat umbellate or cymose, sessile; leaves nearly opposite, linear-lanceolate, recurved at the apex, almost sessile, flat above, but convex beneath, glandular on the margins and mid-rib beneath; petals and filaments smooth. ♄. G. Native of the Cape of Good Hope. Flowers small. Petals ovate, concave, erect, twice the length of the calyx. Stamens length of calyx; sterile stamens opposite the petals.

Recurved-leaved Diosma. Shrub 1 to 2 feet.

* * *Flowers sub-corymbose. Leaves scattered.*

4 D. pectina'ta (Thunb. fl. cap. 2. p. 127.) leaves scattered, trigonal, acute, dotted, ciliated, spreading; corymbs terminal, few-flowered; branchlets pubescent. ♄. G. Native of the Cape of Good Hope. Flowers white.

Pectinated Diosma. Fl. April, June. Clt. 1812. Sh. 1 to 2 ft.

5 D. subula'ta (Wendl. coll. 1. p. 31. t. 8.) leaves scattered, linear, keeled, acuminated, fringed, erect, sometimes opposite; corymbs terminal, few-flowered. ♄. G. Native of the Cape of Good Hope. Petals bluish, shorter than the acute calyx.

Subulate-leaved Diosma. Fl. March, July. Clt. 1812. Shrub 1 to 2 feet.

6 D. aspalathoìdes (Lam. dict. 2. p. 286.) leaves scattered, trigonal, linear, erect, ending at the apex in a hooked point, smooth, dotted beneath; peduncles and calyxes quite smooth; flowers usually corymbose. ♄. G. Native of the Cape of Good Hope. D. glabràta, Meyer. Flowers white.

Aspalathus-like Diosma. Shrub 1 to 2 feet.

7 D. hirsu'ta (Thunb. fl. cap. 2. p. 128.) leaves scattered, linear, keeled, mucronate, villous; branches and calyxes hairy; peduncles terminal, 1-flowered, sub-corymbose. ♄. G. Native of the Cape of Good Hope. Wendl. coll. 1. t. 27.—Comm. rar. t. 3. Flowers white, with a bluish or pinkish tinge.

Hairy Diosma. Fl. Feb. May. Clt. 1731. Shrub 2 to 4 feet.

8 D. virga'ta (Thunb. fl. cap. 2. p. 129.) leaves scattered, trigonal, obtuse, dotted, smooth; flowers somewhat racemose, fastigiate. ♄. G. Native of the Cape of Good Hope. Flowers white, smooth.

Twiggy Diosma. Fl. March, Ju. Clt. 1820. Shrub 1 to 2 ft.

9 D. ru'bra (Lin. spec. 287.) leaves scattered, linear, keeled, mucronate, smooth, fringed at the base, bifariously dotted beneath; flowers terminal, somewhat umbellate; calyxes fringed; carpels with straight horns. ♄. G. Native of the Cape of Good Hope. Ker. bot. reg. t. 563. D. ericifòlia, Andr. bot. rep. t. 451.—Mill. fig. t. 125. f. 1.?—Comm. rar. t. 2. Calyxes reddish. Petals white. The leaves when bruised emit a strong balsamic scent, as well as all the other species.

Red-calyxed Diosma. Fl. Feb. May. Clt. 1752. Shrub 1 to 4 feet.

10 D. ambi'gua (Lodd. bot. cab. t. 461.) leaves scattered, linear, pointed, keeled, fringed, erectish; flowers sub-corymbose; peduncles short, pubescent; horns of carpels spreading, a little recurved. ♄. G. Native of the Cape of Good Hope. Flowers white.

Ambiguous Diosma. Fl. April, July. Clt. 1810. Sh. 1 to 3 ft.

11 D. longifòlia (Wendl. coll. 1. p. 61. t. 19.) leaves scattered, linear, pointed, long, smooth, glandular, spreading, fringed; corymbs terminal, few-flowered; horns of carpels hooked. ♄. G. Native of the Cape of Good Hope. D. rùbra, Lam. dict. Flowers white, tinged with blue.

Long-leaved Diosma. Fl. May, June. Clt.? Shrub 1 to 3 ft.

12 D. tenuifòlia (Willd. enum. p. 258.) leaves linear, keeled, mucronate, ciliated; peduncles 1-2-flowered, corymbose, terminal. ♄. G. Native of the Cape of Good Hope. D. linifòlia, Hort. Flowers white.

Fine-leaved Diosma. Fl. April, June. Clt.? Shrub 1 to 2 ft.

13 D. umbella'ta (Thunb. fl. cap. 2. p. 133.) leaves scattered, trigonal, obtuse, dotted, ciliated; umbels many-flowered, terminal. ♄. G. Native of the Cape of Good Hope. Peduncles purple. Corolla white.

Umbellate Diosma. Shrub 1 to 3 feet.

14 D. tenui'ssima (Lodd. in Link, enum. 1. p. 257.) leaves scattered, somewhat triquetrous, smooth, remotish, scarcely 2 lines long; flowers sub-corymbose? ♄. G. Native of the Cape of Good Hope. Flowers white.

Very slender Diosma. Fl. April, July. Clt. 1820. Shrub 1 to 2 feet.

15 D. thyoìdes (Willd. in Rœm. et Schult. syst. 5. p. 462.) leaves scattered, linear, smooth, close-pressed; branches whorled; flowers terminal, umbellate; peduncles pubescent. ♄. G. Native of the Cape of Good Hope. Flowers white.

Cupressus-like Diosma. Shrub 2 feet.

16 D. parviflòra (Willd. in Rœm. et Schult. syst. 5. p. 462.) leaves scattered, awl-shaped, triquetrous, acute, smooth; flowers in terminal umbels; pedicels pubescent. ♄. G. Native of the Cape of Good Hope. Flowers small, white.

Small-flowered Diosma. Shrub 1 to 3 feet.

* * * *Flowers stalked, usually solitary.*

17 D. ustula'ta (Thunb. fl. cap. 2. p. 132.) leaves ovate, trigonal, umbricated, smooth; flowers terminal, solitary. ♄. G. Native of the Cape of Good Hope. Leaves covered with dark dots above. Flowers white.

Dark-dotted Diosma. Shrub 1 to 2 feet.

18 D. sca'bra (Lam. dict. 2. p. 283.) leaves opposite, decussate, linear, keeled, scabrous, fringed, with a recurved point; peduncles twin, 1-flowered, terminal. ♄. G. Native of the Cape of Good Hope. Flowers white.

Scabrous Diosma. Shrub 1 to 2 feet.

19 D. ericoìdes (Thunb. fl. cap. 2. p. 130.) leaves crowded, trigonal, blunt, smooth, dotted; flowers terminal, usually solitary. ♄. G. Native of the Cape of Good Hope. Sims, bot. mag. t. 2332. Mill. fig. t. 124. f. 2.—Pluk. alma. t. 179. f. 3. Flowers small, white, with a tinge of red on the upper surface. The leaves emit a strong penetrating smell when bruised. The Hottentots use the leaves of this and other species to scent their ointments. It is a low bushy shrub.

Heath-like Diosma. Fl. Feb. Jul. Clt. 1756. Sh. 1 to 3 ft.

20 D. linea'ris (Thunb. fl. cap. 2. p. 136.) leaves opposite, linear, obtuse, spreading; branches and pedicels smooth; flowers terminal, usually solitary. ♄. G. Native of the Cape of Good Hope. Flowers white?

Linear-leaved Diosma. Fl. Mar. July. Clt. 1800. Shrub 1 to 2 feet.

* * * * *Flowers almost sessile.*

21 D. Meyeria'na (Spreng. syst. 1. p. 783.) leaves crowded, linear, pointed, upright, pressed, with scabrous edges; flowers

terminal, glomerate. ♄. G. Native of the Cape of Good Hope. D. virgàta, Meyer. Flowers small, white.

Meyer's Diosma. Shrub 1 to 3 feet.

22 D. RAMOSÍSSIMA (Bartl. dios. Spreng. syst. 1. p. 783.) leaves crowded, linear, trigonal, very blunt, upright, smooth; flowers usually solitary; petals blunt. ♄. G. Native of the Cape of Good Hope. D. cupréssina, Lam. Flowers white.

Much-branched Diosma. Shrub 1 to 3 feet.

23 D. CUPRE'SSINA (Thunb. fl. cap. 2. p. 136.) leaves opposite, imbricated in 4 rows, oblong-lanceolate, close-pressed, with scabrous margins, keeled, acute; flowers terminal, usually solitary. ♄. G. Native of the Cape of Good Hope. Lodd. bot. cab. t. 303. Wendl. coll. 2. t. 61.—Pluk. alm. t. 279. f. 2. D. dichótoma, Berg. cap. p. 63. Brùnia unifiòra, Lin. spec. 289. Flowers white, tinged with pink.

Cypress-like Diosma. Fl. June, July. Clt. 1790. Shrub 1 to 2 feet.

Cult. *Diósma* is a genus of beautiful heath-like shrubs; they will thrive best in a mixture of peat and sand, with the addition of a little turfy loaf; and youngish cuttings, planted in a pot of sand, and a bell-glass placed over them, will strike root freely without heat.

X. EUCHÆ'TIS (from *ευ*, *eu*, well, and *χαιτη*, *chaite*, a head of hair; in allusion to the petals being bearded inside). Bartl. et Wendl. diosm. Andr. Juss. in mem. mus. 12. p. 472.—Diósma spec. Meyer.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx 5-parted. Disk adnate to the base of the calyx, with a free, short margin, which is somewhat 5-crenate. Petals 5, a little longer than the calyx, hardly unguiculate, transversely bearded in the middle on the inside. Stamens 5, opposite the segments of the calyx, and shorter than them; anthers roundish, each furnished at the apex with a minute, rather globose gland. Style shorter than the stamens, erect, quite smooth, dilated at the apex into a capitate stigma. Capsule of 5 joined carpels, each furnished with a little horn at the apex on the outside.—A shrub with scattered, lanceolate, keeled leaves, with 2 rows of glands on the keel, and serrulated, scabrous, ciliated margins, without dots. Flowers white, glomerate at the tops of the branches; peduncles very short, each furnished with 2 opposite bracteas. This genus differs from *Acmadènia*, in the sterile filaments being sometimes almost wanting.

1 E. GLOMERA'TA (Bartl. et Wendl. diosm. p. 15. t. A. f. 1.) leaves crowded, acute, close-pressed; flowers glomerate, terminal. ♄. G. Native of the Cape of Good Hope. Diósma glomeràta, Meyer. Flowers white.

Glomerate-flowered Euchætis. Shrub 2 feet.

Cult. See *Diósma* for cultivation and propagation.

XI. ACMADE'NIA (from *ακμη*, *acme*, a point, and *αδην*, *aden*, a gland; in allusion to the anthers being terminated by pointed glands). Bartl. et Wendl. diosm. p. 16. Andr. Juss. in mem. mus. 12. p. 473. t. 18. no. 14.—Diósma, species of authors.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx 5-parted. Disk adnate to the base of the calyx, with a free, spreading, entire margin. Petals 5, with long claws; claws bearded on the inside. Filaments 10, enclosed, the 5 sterile ones opposite the petals and inserted in the margin of the disk, or almost wanting, the 5 fertile ones are longest; anthers ovate, each furnished with a conical gland at the apex. Style shorter than the filaments, dilated at the apex into a capitate, obscurely 5-furrowed stigma. Capsules of 5 compressed carpels, each bearing a horn at the apex on the outside.—Small, heath-like shrubs, with opposite, thickish, keeled, and hence somewhat trigonal leaves, which are imbricated in 4 rows and dotted beneath. Flowers white or red, terminal, solitary, almost sessile, furnished with imbricate sepal-like bracteas.

1 A. JUNIPE'RINA (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves crowded, trigonal, linear, acute, on very short petioles; flowers solitary, terminal; sterile filaments very short. ♄. G. Native of the Cape of Good Hope. Diósma junipérina, Spreng. syst. 1. p. 784. Diósma ulícina, Lodd. cat. 1824.? Flowers red?

Juniper-like Acmadenia. Fl. April, July. Clt. 1823. Shrub 1 to 2 feet.

2 A. OBTUSA'TA (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves crowded, somewhat trigonal, linear-lanceolate, obtuse, fringed; branches pubescent; flowers sessile, solitary; calyxes and petals fringed; sterile filaments very short. ♄. G. Native of the Cape of Good Hope. Diósma obtusàta, Wendl. coll. 3. p. 7. t. 76. Flowers pale-red.

Obtuse-leaved Acmadenia. Shrub 1 to 2 feet.

3 A. LÆVIGA'TA (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves ovate, keeled, obtuse, smooth, fringed; flowers sessile, terminal, solitary; sterile filaments very short. ♄. G. Native of the Cape of Good Hope. Diósma tetragòna, Thunb. fl. cap. 1. p. 133. voy. 4. t. 5. Diósma lævigàta, Spreng. syst. 1. p. 784. Búcco tetragòna, Rœm. et Schult. syst. 5. p. 444. Adenándra tetragòna, Sweet, hort. subur. lond. p. 45. Flowers white.

Smoothed Acmadenia. Fl. July, Aug. Clt. 1789. Shrub 1 to 2 feet.

4 A. ALTERNIFÒLIA (Nees, in Schlecht. Linnæa. 5. p. 52.) branched, densely leafy; leaves linear, triquetrous, keeled, acute, rough from glandular dots beneath; flowers somewhat umbellate, terminal, few, sessile; sepals ovate, acuminated, ciliated at the base; petals wedge-shaped, ciliated; stigma capitate. ♄. G. Native of the Cape of Good Hope.

Alternate-leaved Acmadenia. Shrub 1 to 2 feet.

5 A. PU'NGENS (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves oblong, acuminated, smooth; flowers solitary, sessile. ♄. G. Native of the Cape of Good Hope. Diósma púngens, Spreng. syst. 1. p. 784. Flowers white.

Pungent-leaved Acmadenia. Shrub 1 to 2 feet.

6 A. TETRAGÒNA (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves roundish-rhomboidal, with scabrous margins, floral ones dilated at the apex; flowers large, sessile, solitary; sterile filaments awl-shaped. ♄. G. Native of the Cape of Good Hope. Diósma tetragòna, Lin. syst. 239. Flowers white.

Tetragonal Acmadenia. Shrub 1 to 2 feet.

Cult. This is a beautiful genus of little shrubs, differing from all the Cape *Diosmæ* in the leaves being closely imbricated in four rows, covering the stem. These require the same treatment as that recommended for *Diósma*, which see.

XII. BARO'SMA (from *βαρυς*, *barys*, heavy, and *οσμη*, *osme*, smell; all the species have a heavy smell). Willd. enum. 257. Bartl. et Wendl. diosm. ex Andr. Juss. in mem. mus. 12. p. 474. t. 29. no. 18.—Baryósma, Rœm. et Schult. syst. 5. p. 448. but not of Gært.—Parapetalífera, Wendl. coll. 1. p. 92.—Diósma spec. of authors.—Hartògia, spec. Berg. 69.—Búcco. spec. Rœm. et Schult. syst. 5. p. 438.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx 5-cleft or 5-parted, dotted. Disk covering the bottom of the calyx, with the margin for the most part very short, and hardly prominent above. Petals 5, with short claws. Filaments 10, the 5 opposite the petals sterile, petal-like, not unguiculate, obscurely glandular at the apex, fringed; the 5 alternate ones longest, smooth, or a little hispid, awl-shaped, capillary, bearing egg-shaped anthers, each furnished with a minute gland at the apex, rarely without. Style about the length of the petals, a little arched.

smooth or hispid at the base, tapering to the top into a minute 5-lobed stigma. Capsule of 5 joined carpels, each furnished with an auricle at the top on the outside, and with glandular dots on the back.—Small, heath-like shrubs, with opposite or scattered, coriaceous, flat, dotted leaves, with their margins sometimes glandularly serrulated, sometimes almost entire or revolute. Flowers white or red, solitary or in threes; pedicels short, furnished with close-pressed, imbricate, sepal-like bracteas. In B. trichópodis, Bartl. the flowers are in fascicles on 1-flowered pedicels, rising from the minute, many-leaved, axillary buds.

* *Leaves glandularly serrulated.*

1 B. serratifòlia (Willd. enum. p. 257.) leaves nearly opposite, lanceolate, stalked, glandularly serrulated, smooth; peduncles axillary, subdivided. ♄. G. Native of the Cape of Good Hope. Diósma serratifòlia, Curt. bot. mag. t. 456. Lodd. bot. cab. t. 373. Burch, voy. 1. p. 476. with a figure. Parapetalífera serràta, Wendl. coll. 1. t. 34. Adenándra cordàta, Link. enum. 1. p. 236. Petals white.

Serrate-leaved Barosma. Fl. Mar. June. Clt. 1789. Shrub 1 to 3 feet.

2 B. odora'ta (Willd. enum. p. 257.) leaves opposite, ovate-oblong, crenated, smooth, glandular; pedicels axillary, solitary. ♄. G. Native of the Cape of Good Hope. Diósma odoràta, D. C. prod. 1. p. 714. D. latifòlia, Lodd. bot. cab. t. 290. Parapetalífera odoràta, Wendl. coll. 1. t. 15. Branches tetragonal. Peduncles sometimes 2-flowered. Flowers white.

Sweet-scented Barosma. Fl. Mar. June. Clt. 1789. Shrub 2 to 4 feet.

3 B. betu'lina (Bartl. et Wendl. diosm. ex Juss. l. c.) leaves opposite, obovate, serrulated, sessile, spreading much, covered with glandular dots beneath; flowers axillary, solitary. ♄. G. Native of the Cape of Good Hope. Diósma betùlina, Thunb. fl. cap. 2. p. 139. Hartògia betùlina, Berg. cap. 69. Búcco betùlina, Rœm. et Schult. syst. 5. p. 443. Diósma orbiculàris, Hort. Flowers white.

Birch-like Barosma. Fl. Feb. Sept. Clt. 1790. Sh. 1 to 3 ft.

4 B. latifòlia (Rœm. et Schult. syst. 5. p. 449.) leaves opposite, ovate-oblong, sessile, serrulated, smoothish, without glandular dots; branches villous; flowers usually solitary, lateral. ♄. G. Native of the Cape of Good Hope. Diósma latifòlia, Thunb. fl. cap. 2. p. 139. Lin. fil. suppl. 154. Andr. bot. rep. t. 33. Flowers white.

Broad-leaved Barosma. Fl. Jul. Aug. Clt. 1789. Sh. 1 ft.

5 B. pulche'lla (Bartl. et Wendl. diosm. ex Juss. l. c.) leaves crowded, ovate, quite smooth, with thickened, crenate-glandular margins; peduncles axillary, usually solitary, exceeding the leaves. ♄. G. Native of the Cape of Good Hope. Diósma pulchélla, Lin. spec. 288. Sims, bot. mag. t. 1357. Hartògia pulchélla, Berg. cap. 69. Búcco pulchélla, Rœm. et Schult. syst. 5. p. 442. Flowers pale-red. The Hottentots use the leaves of this plant, dried and powdered, under the name of Bucku, to mix with the grease with which they anoint themselves. It gives them so rank an odour, that Thunberg says he could not bear the smell of the men who drove his waggon.

Neat Barosma. Fl. Feb. Sept. Clt. 1789. Sh. 1 to 3 feet.

6 B. crena'ta (Sweet, hort. brit. p. 89.) leaves usually opposite, ovate, acute, dotted, with glandularly-crenated margins; pedicels solitary, 1-flowered. ♄. G. Native of the Cape of Good Hope. Diósma crenàta, Lodd. bot. cab. t. 404. Probably the same as *Diósma crenàta* of Lin. and Thunb. but the leaves are said to be scattered, not opposite. Flowers white. The leaves are used like the last.

Crenate-leaved Barosma. Fl. Jan. April. Clt. 1774. Shrub 1 to 2 feet.

7 B. pu'lchra (Nees, in Schlecht. Linnæa. 5. p. 53.) like *B. pulchélla* but larger in every part; fertile filaments ciliated at the base, but the sterile ones all over; petals full of glandular dots. ♄. G. Native of the Cape of Good Hope.

Fair Barosma. Shrub 1 to 2 feet.

** *Leaves entire or revolute.*

8 B. ova'ta (Bartl. et Wendl. diosm. ex Juss. l. c.) leaves nearly opposite, ovate, oval, obovate or ovate-roundish, smooth, entire, beset with rusty dots beneath; flowers axillary, stalked. ♄. G. Native of the Cape of Good Hope. Diósma ovàta, Thunb. prod. 43. Sims, bot. mag. t. 1616. Búcco ovàta, Wendl. coll. t. 20. Flowers white.

Ovate-leaved Barosma. Fl. Feb. Sept. Clt. 1790. Shrub 1 to 3 feet.

9 B. grave'olens; leaves ovate, quite entire, imbricate, smooth; peduncles axillary, solitary. ♄. G. Native of the Cape of Good Hope. Diósma gravèolens, Licht. in Rœm. et Schult. syst. 5. p. 461.

Strong-scented Barosma. Shrub 1 to 2 feet.

10 B. oblónga (Bartl. et Wendl. diosm. ex Juss. l. c.) leaves scattered, obovate-oblong, coriaceous, shining, with thickened, revolute, glandularly-crenated margins; branches pubescent; peduncles axillary, exceeding the leaves. ♄ G. Native of the Cape of Good Hope. Diósma oblónga, Thunb. fl. cap. 2. p. 139. D. lanceolàta, var. β et γ, Thunb. prod. 43. Flowers white.

Oblong-leaved Barosma. Shrub 1 to 3 feet.

11 B. dioi'ca (Bartl. et Wendl. diosm. ex Juss. l. c.) leaves scattered, upper ones tern, lanceolate, tapering to both ends, full of glandular dots, spreading; peduncles axillary, usually in threes, shorter than the leaves; flowers dioecious from abortion. ♄. G. Native of the Cape of Good Hope. Diósma dioíca, Ker. bot. reg. t. 502. Diósma linifòlia, Lodd. bot. cab. t. 400. but not of Licht. Stamens a little exserted. Petals purplish.

Dioecious Barosma. Fl. April, Jul. Clt. 1816. Sh. 1 to 2 ft.

12 B. angustifòlia (Bartl. et Wendl. diosm. ex. Juss. l. c.) leaves opposite, linear, truncate, revolute, quite smooth, with pellucid, glandularly crenate dots on the margins; flowers axillary, aggregate, on short peduncles. ♄. G. Native of the Cape of Good Hope. Diósma stenophýlla, Spreng. syst. 1. p. 785. Flowers white?

Narrow-leaved Barosma. Shrub 1 to 3 feet.

13 B. fœtidi'ssima (Bartl. et Wendl. l. c.) leaves linear, very blunt, revolute, usually tern; flowers terminal, somewhat umbellately aggregate. ♄. G. Native of the Cape of Good Hope. Diósma fœtidíssima, Spreng. syst. 1. p. 785. Flowers white.

Very-fetid Barosma. Fl. Feb. July. Clt. 1824. Sh. 1 to 3 ft.

14 B. tricho'podis (Bartl. et Wendl. diosm. ex Juss. l. c.) flowers in fascicles, on 1-flowered pedicels, rising from the minute, many-leaved, axillary buds. ♄. G. Native of the Cape of Good Hope.

Hairy-stalked Barosma. Shrub 1 to 3 feet.

Cult. Barósma is a genus of pretty little shrubs, which thrive best in a mixture of sand, peat, and a little turfy loam; and cuttings taken off from ripened wood, and planted in a pot of sand, with a bell-glass placed over them, will strike root readily.

XIII. AGATHO'SMA (from *αγαθος, agathos*, good, and *οσμη, osme*, smell; the plants contained in this genus have a pleasant smell). Willd. enum. 259. Bartl. et Wendl. diosm. ex Andr. Juss. in mem. mus. 12. p. 475. t. 20. no. 19. Búcco, Wendl. coll. 1. p. 13. Diósma, species of authors. Hartògia species, Lin. et Berg.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted. Disk short, glandular, adnate to the bottom of the calyx, usually

pressed to the ovaries. Petals 5, longer than the calyx, unguiculate; claws long, narrow, usually hispid, with a broad, entire, spreading limb. Filaments 10, the 5 opposite the petals shorter than them, petal-like, hispid at the base, but dilated at the apex into a spatula, which is obscurely glandular-dotted, the 5 alternate ones somewhat terete, usually unequal, bearing subglobose anthers, each furnished with a minute globular gland at the apex. Style about the length of the stamens, tapering to the apex into a 2-3-lobed stigma. Fruit of 2 or 3 joined carpels, each furnished with a horn at the apex on the outside.—Small, heath-like shrubs, with scattered, short, narrow leaves, usually with revolute edges, somewhat trigonal, sometimes flat, entire, or with glandular teeth, for the most part dotted. Flowers reddish or lilac, but usually white, aggregate at the tops of the branches in heads or umbels. Peduncles 1-flowered, furnished with scale-like bracteas at their base, and for the most part furnished with 2 alternate, bristle-like bracteas in the middle.

§ 1. *Flowers terminal, subumbellate.*

* *Leaves linear-trigonal.*

1 A. BISU'LCA; leaves scattered, trigonal, linear, erect, with an acute, recurved apex, hairy, keeled beneath from 4 rows of dots; petals pilose. ♄. G. Native of the Cape of Good Hope. Diósma bisúlca, Thunb. prod. 1. p. 84. D. bifúrca, Willd. spec. 1. p. 1136. Leaves with a glandular point, and with 2 furrows beneath. Flowers white.

Two-furrowed-leaved Agathosma. Shrub 1 to 2 feet.

2 A. HÍSPIDA (Bartl. et Wendl. diosm. p. 16.) leaves crowded, linear, trigonal, blunt, spreading, hispid, keeled, and 2-furrowed beneath; pedicels and calyxes pubescent; petals quite smooth. ♄. G. Native of the Cape of Good Hope. Diósma híspida, Thunb. fl. cap. 2. p. 129. Hartògia Capénsis, Lin. spec. 288. Búcco híspida, Rœm. et Schult. syst. 5. p. 446. Flowers white.

Hispid Agathosma. Fl. June, Aug. Clt. 1786. Shrub 1 ft.

3 A. PA'TULA; leaves somewhat linear-trigonal, blunt, quite smooth above, but rough from furrows beneath; peduncles and calyxes pubescent. ♄. G. Native of the Cape of Good Hope. Diósma pàtula, Spreng. syst. 1. p. 786. Flowers white.

Spreading Agathosma. Shrub 1 to 2 feet.

4 A. ERE'CTA (Bartl. et Wendl. diosm. ex Juss.) leaves imbricate, trigonal, blunt, dotted beneath, a little fringed; peduncles villous, short. ♄. G. Native of the Cape of Good Hope. Diósma brevifòlia, Lam. dict. 2. p. 285. Búcco brevifòlia, Rœm. et Schult. syst. 5. p. 446. Flowers pale-violet.

Erect Agathosma. Fl. April, June. Clt. 1818. Sh. 1 to 2 ft.

5 A. REFLE'XA (Link. enum. 238.) leaves linear, acute, a little reflexed at the apex, with rows of glands on the margin and beneath; branches smooth. ♄. G. Native of the Cape of Good Hope. Diósma refléxa, Lodd. cat. D. C. prod. 1. p. 716. Flowers pale-violet?

Reflexed-leaved Agathosma. Fl. April, June. Clt. 1820. Shrub 1 to 2 feet.

6 A. TENUÍSSIMA; leaves scattered, erect, triquetrous, bluntish, smooth; peduncles elongated, and are as well as the petals quite smooth. ♄. G. Native of the Cape of Good Hope. Diósma tenuíssima, Lodd. in Link. enum. 1. p. 257. Flowers white.

Slenderest Agathosma. Fl. April, July. Clt. 1820. Shrub 1 to 2 feet.

7 A. THYOÌDES; leaves imbricate, linear-trigonal, smooth, blunt; branches in whorls; peduncles pubescent, aggregate, terminal. ♄. G. Native of the Cape of Good Hope. Diósma thyoìdes, Willd. in Rœm. et Schult. syst. 5. p. 462. Flowers lilac?

Cupressus-like Agathosma. Fl. Apr. Jul. Clt.? Sh. 1 to 2 ft.

8 A. VIRGA'TA; shrub quite smooth, and much branched; leaves trigonal, blunt, erect, very narrow; keeled beneath. ♄. G. Native of the Cape of Good Hope. D. virgàta, Lam. dict. 2. p. 286. Búcco Lamarkiàna, Rœm. et Schultz. syst. 5. p. 447. Flowers white.

Twiggy Agathosma. Fl. Mar. Jul. Clt. 1820. Sh. 1 to 2 ft.

9 A. PARVIFLÒRA; leaves scattered, linear-trigonal, mucronate, smooth, obsoletely dotted; pedicels aggregate, pubescent. ♄. G. Native of the Cape of Good Hope. Diósma parviflòra, Willd. in Rœm. et Schult. syst. 5. p. 462. Flowers small, white.

Small-flowered Agathosma. Shrub 1 to 2 feet.

10 A. BRUNIA'DES; leaves scattered, linear-trigonal, awl-shaped, dotted, and a little fringed; branches hairy; peduncles fastigiate, elongated. ♄. G. Native of the Cape of Good Hope. Diósma bruniàdes, Link. enum. 237. A. cuspidàta, Bartl. et Wendl. diosm. ex Juss. Flowers lilac or white.

Brunia-like Agathosma. Fl. April, June. Clt. 1820. Shrub 1 to 2 feet.

11 A.? TERETIFÒLIA; leaves linear, convex above, channelled beneath, blunt, and are as well as the margins pubescent. ♄. G. Native of the Cape of Good Hope. Diósma teretifòlia, Link. enum. 1. p. 237. Flowers unknown.

Terete-leaved Agathosma. Shrub 1 to 3 feet.

** *Leaves broader, flattish.*

12 A. THUNBERGIA'NA; leaves imbricate, lanceolate, keeled, fringed, incurved at the apex; peduncles hairy, aggregate, terminal. ♄. G. Native of the Cape of Good Hope. Diósma ciliàta, Thunb. D. Thunbergiàna, Spreng. syst. 1. p. 786. Flowers white?

Thunberg's Agathosma. Shrub 1 to 2 feet.

13 A. BÍFIDA (Bartl. et Wendl. diosm. ex Spreng.) leaves somewhat imbricate, linear-oblong, obtuse, fringed, keeled beneath, dotted, smooth; peduncles quite smooth, crowded; petals deeply divided into 2 linear lobes. ♄. G. Native of the Cape of Good Hope. Diósma bífida, Jacq. coll. 3. p. 278. t. 20. f. 1. Dichósma bífida, G. Don, in Loud. hort. brit. p. 85. Flowers white.

Bifid-petalled Agathosma. Fl. April, Jul. Clt.? Sh. 1 to 2 ft.

14 A. LINIFÒLIA (Licht. in Rœm. et Schult. syst. 5. p. 448. sub. *Búcco,*) leaves rather linear, acute, roughish, fringed, full of pellucid dots; peduncles quite smooth. ♄. G. Native of the Cape of Good Hope. Diósma linifòlia, Spreng. syst. 1. p. 786. Flowers white?

Flax-leaved Agathosma. Fl. April, June. Clt. 1823. Shrub 1 to 2 feet.

15 A. BLÆRIOÌDES (Nees, in Schlecht. Linnæa. 5. p. 55.) erect; branches densely leafy, pilose at the apex; flowers rather umbellate, terminal; leaves elliptical, obtuse, coriaceous, with glandular, revolute margins; bracteas minute; peduncles hairy, bractless; calyx hairy at the base; petals obovate; fertile stamens smooth, sterile ones petaloid and ciliated. ♄. G. Native of the Cape of Good Hope.

Blæria-like Agathosma. Shrub 1 foot.

16 A. MU'NDTII (Nees, in Schlecht. Linnæa. 5. p. 56.) much branched; branches slender, densely leafy; flowers rather umbellate, terminal; leaves spreading, on short footstalks; bracteas minute, form of an involucre to the flower; peduncles smooth, filiform, naked; sepals ovate, bluntish, smooth and finely ciliated; petals oblong, obtuse, with the claws pubescent; fertile stamens smooth, sterile ones narrow, petaloid, and ciliated. ♄. G. Native of the Cape of Good Hope.

Mundt's Agathosma. Shrub 1 to 2 feet.

17 A. PROLÍFERA (Bartl. et Wendl. diosm. ex Juss. l. c.) leaves spreading, lanceolate, cuspidate, keeled; keel and edges fringed, dotted; branches whorled, proliferous; pedicels some-

what fastigiate, pubescent; calyxes smooth. ♄. G. Native of the Cape of Good Hope. Búcco prolífera, Wendl. coll. 3. t. 77. Diósma prolífera, Spreng. syst. 1. p. 786. Flowers white.

Proliferous-branched Agathosma. Fl. April, Aug. Clt. 1790. Shrub 1 to 3 feet.

18 A. SERPYLLA'CEA (Licht. in Rœm. et Schult. syst. 5. p. 447. under *Búcco,*) leaves crowded, erect, linear-lanceolate, with thickened, revolute, fringed, glandular margins; branches and pedicels hairy. ♄. G. Native of the Cape of Good Hope. Diósma serpyllàcea, D. C. prod. 1. p. 719. Diósma strícta, Willd. in Rœm. et Schult. syst. 5. p. 462. Flowers probably white.

Wild Thyme-leaved Agathosma. Shrub 1 to 2 feet.

19 A. CILIA'TA; leaves scattered, lanceolate, acute, with toothletted-fringed, revolute edges, dotted beneath, and bearing hairs on the middle nerve, becoming at length reflexed; pedicels smoothish? ovaries hairy at the apex. ♄. G. Native of the Cape of Good Hope. D. capitàta, Dum. Cours. bot. cult. 2d. ed. 5. p. 405. Diósma ciliàta, Lin. spec. 287. Flowers white.

Fringed-leaved Agathosma. Fl. April, Aug. Clt. 1774. Shrub 1 to 2 feet.

20 A. CEREFÒLIA; leaves crowded, lanceolate, acute, spreading, keeled, fringed; pedicels and calyxes beset with glandular hairs; ovaries smooth. ♄. G. Native of the Cape of Good Hope. Diósma cerefòlium, Vent. malm. t. 93. Búcco cerefòlium, Rœm. et Schult. syst. 5. p. 439. The leaves of this plant smell like *chervil* when bruised. Flowers small, white.

Chervil-leaved Agathosma. Fl. April, Aug. Clt. 1790. Shrub 1 to 2 feet.

21 A. E'LEGANS (Nees, in Schlecht. Linnæa. 5. p. 54.) much branched, and densely leafy; branches very hairy at the apex; flowers racemosely-corymbose; leaves spreading, stalked, ovate, or oblong, revolute, hairy, with the margins beset with hairs and inconspicuous glands; bracteas oblong, pubescent; calyx pubescent; sepals ovate, keeled, finely ciliated; petals elliptical, obtuse, ciliated at the claws. ♄. G. Native of the Cape of Good Hope. Fertile stamens smooth; sterile ones ciliated to the middle, villous.

Elegant Agathosma. Shrub 1 to 2 feet.

22 A. VENTENATIA'NA; leaves scattered, lanceolate, keeled, hairy beneath, erect; peduncles pilose; ovaries bearing 2 glands at the apex. ♄. G. Native of the Cape of Good Hope. Diósma hírta, Vent. malm. t. 72. D. purpùrea, Hortul. Diósma Ventenatiàna, Spreng. syst. 1. p. 786. Búcco Ventenatiàna, Rœm. et Schult. syst. 5. p. 442. Diósma glandulòsa, Thunb. fl. cap. 2. p. 145.? Flowers pale-purple.

Var. β, *exsiccàta* (Lam. dict. 2. p. 286. ill. t. 127. f. 3.) flowers whitish.

Ventenat's Agathosma. Fl. April, July. Clt. 1794. Shrub 1 to 2 feet.

23 A. LA'XA; leaves imbricate, incurved at the apex, lanceolate, keeled, pubescent beneath; branches loose; peduncles elongated, pubescent. ♄. G. Native of the Cape of Good Hope. Diósma láxa, Spreng. syst. 1. p. 787. Flowers purple?

Loose-branched Agathosma. Shrub 1 to 2 feet.

24 A. LASIOPHY'LLA; leaves imbricate, linear-lanceolate, incurved at the apex and bluntish, hairy beneath; branches a little whorled; pedicels unequal, short, pubescent; calyxes smoothish. ♄. G. Native of the Cape of Good Hope. A. villòsa, Willd. enum. 259. A. hírta, Ker. bot. reg. t. 369. Búcco villòsa, Wendl. coll. 1. p. 14. t. 2. exclusive of the synonyme of Thunberg. Flowers purple. Leaves clothed with glandular villi.

Woolly-leaved Agathosma. Fl. April, July. Clt. 1794. Shrub 1 to 2 feet.

25 A. PUBE'SCENS; leaves lanceolate, trigonal, mutic, with the margins and rib ciliated; umbels terminal; peduncles and calyxes villous. ♄. G. Native of the Cape of Good Hope. Diósma pubéscens, Thunb. prod. 43. fl. cap. 134. Flowers white.

Pubescent Agathosma. Fl. April, July. Shrub 1 to 2 feet.

26 A. GLABRA'TA (Bartl. et Wendl. diosm. ex Spreng.) plant quite smooth; leaves imbricate, oblong-lanceolate, thickish, convex beneath, with a trigonal gibbosity at the apex; peduncles rather elongated. ♄. G. Native of the Cape of Good Hope. Diósma leiophýlla, Spreng. syst. 1. p. 787. Flowers purple?

Smooth Agathosma. Shrub 1 to 2 feet.

27 A. HY'BRIDA; leaves spreading, oblong, obtuse, keeled, with a trigonal gibbosity at the apex; keel and margins fringed; peduncles and calyxes quite smooth. ♄. G. Native of the Cape of Good Hope. Diósma hýbrida, Spreng. syst. 1. p. 787. Flowers white?

Hybrid Agathosma. Fl. April, July. Clt. 1820. Shrub 1 to 2 feet.

28 A. RUGÒSA (Link. enum. 238.) leaves spreading, oblong or ovate, blunt, keeled, wrinkled, villous beneath, reflexed; pedicels capillary, clothed with glandular hairs; calyxes pubescent. ♄. G. Native of the Cape of Good Hope. Diósma rugòsa, Thunb. fl. cap. 2. p. 138. A. móllis, Bartl. et Wendl. diosm. ex Spreng. Flowers white.

Wrinkled Agathosma. Fl. April, Aug. Clt. 1790. Shrub 1 to 2 feet.

29 A. OBTU'SA (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves scattered, spreading, oblong-lanceolate, blunt, somewhat keeled; keel and margins fringed; pedicels elongated, beset with glandular hairs; ovaries smooth. ♄. G. Native of the Cape of Good Hope. Diósma ciliàta, Lam. dict. 2. p. 287. Lodd. bot. cab. t. 210. D. thymifòlia, Willd. in Rœm. et Schult. syst. 5. p. 462. Búcco obtùsa, Rœm. et Schult. syst. 5. p. 438. Flowers white and purplish.

Var. α, *ovàta* (D. C. prod. 1. p. 714.) leaves ovate, crowded, upper ones bearing glandular hairs on the edges and on the middle nerve beneath. Wendl. coll. 1. t. 13. A. pubéscens, Willd. enum. p. 259.

Var. β, *oblónga* (Wendl. coll. 1. t. 14.) leaves oblong, upper ones bearing glandular hairs on the edges, as well as on the middle nerve beneath.

Var. γ, *lanceolàta* (Ker. bot. reg. t. 476.) leaves lanceolate, fringed; pedicels slenderer. Hartògia lanceolàta, Lin. syst. ed. 12. vol. 2. p. 625.

Blunt-leaved Agathosma. Fl. April, Aug. Clt. 1774. Shrub 1 to 2 feet.

30 A. MICROPHY'LLA (Meyer in Bartl. et Wendl. diosm. ex Spreng.) plant quite smooth; leaves spreading, oblong, obtuse, keeled; peduncles and petals elongated. ♄. G. Native of the Cape of Good Hope. Diósma microphýlla, Spreng. syst. 1. p. 787. Flowers reddish?

Small-leaved Agathosma. Shrub 1 to 2 feet.

31 A. ORBICULA'RIS; leaves scattered, spreading, orbicular, ovate or reniform, smooth, reflexed, small, thickish, without any dots beneath; branches villous; pedicels pubescent. ♄. G. Native of the Cape of Good Hope. Diósma orbiculàris, Thunb. fl. cap. 2. p. 146. Flowers white. Stamens twice as long as the corolla.

Orbicular-leaved Agathosma. Fl. April, Aug. Clt. 1790. Shrub 1 to 2 feet.

32 A. WENDLANDIA'NA; leaves oblong, acute, channelled, imbricate, dotted, smooth, young ones rather pubescent; umbels 2-3-flowered; pedicels pilose; calyxes dotted, and petals smooth. ♄. G. Native of the Cape of Good Hope. Búcco erécta, Wendl. coll. 1. p. 17. t. 3. Flowers white.

Wendland's Agathosma. Fl. Ap. Jul. Clt. 1816. Sh. 1 to 2 ft.

33 A.? SPICA'TA (Licht. spic. fl. cap. mss.) leaves linear, with revolute edges, crowded in whorls; flowers capitately-spiked.

ħ. G. Native of the Cape of Good Hope. Búcco spicàta. Rœm. et Schult. 5. p. 448.

Spike-flowered Agathosma. Shrub 1 to 2 feet.

34 A.? corymbòsa; leaves ovate-lanceolate, fleshy, entire. ħ. G. Native of the Cape of Good Hope. Diósma corymbòsa, Mont. in Act. Lund. 1, 2. no. 11.

Corymbose Agathosma. Shrub 1 to 2 feet.

35 A. puncta'ta; leaves orbicular, quite entire, 5-nerved, dotted beneath. ħ. G. Native of the Cape of Good Hope. Diósma punctàta, Lich. in Rœm. et Schult. syst. 5. p. 461.

Dotted-leaved Agathosma. Shrub 1 to 3 feet.

36 A.? perfora'ta; leaves lanceolate, acuminate, a little fringed, the dots on the margin pellucid, and somewhat perforated; umbels terminal. ħ. G. Native of the Cape of Good Hope. Diósma perforàta, Lam. ill. 2. p. 82.

Perforated Agathosma. Shrub 1 to 3 feet.

37 A. myrsinìtes; leaves lanceolate, flat, fringed; umbels terminal; peduncles smooth. ħ. G. Native of the Cape of Good Hope. Diósma myrsinìtes, Lam. ill. 2 .p. 82.—Seba, 2. t. 96. f. 6.?

Whortle-berry-like Agathosma. Shrub 1 to 2 feet.

* * * *Flowers terminal, subcapitate.*

38 A. squammòsa; leaves closely imbricated, roundish-ovate, blunt, concave, smooth, minutely fringed, with tubercles or scales beneath. ħ. G. Native of the Cape of Good Hope. Diósma squammòsa, Willd. in Rœm. et Schult. syst. 5. p. 462. Flowers white.

Scaly-leaved Agathosma. Fl. April, July. Clt. 1818. Shrub 1 to 2 feet.

39 A. vestìta; leaves closely imbricated, ovate, acuminated, keeled, fringed; pedicels quite smooth. ħ. G. Native of the Cape of Good Hope. Búcco vestìta, Licht. in Rœm. et Schult. syst. 5. p. 447. Diósma vestìta, Spreng. syst. 1. p. 787. Flowers lilac.

Clothed Agathosma. Shrub 1 to 2 feet.

40 A. imbrica'ta (Willd. enum. p. 260.) leaves imbricate, crowded, ovate, acuminated, dotted, fringed; pedicels pubescent; calyxes smoothish; petals and stamens bearded on the inside at the base. ħ. G. Native of the Cape of Good Hope. Diósma imbricàta, Thunb. fl. cap. 2. p. 145. Búcco imbricàta, Wendl. coll. 1. t. 9. Hartògia imbricàta, Lin. mant. 124. Petals pale-purple, with a roundish limb.

Imbricate-leaved Agathosma. Fl. April, Aug. Clt. 1774. Shrub 1 to 2 feet.

41 A. acumina'ta (Willd. enum. p. 260.) leaves ovate, somewhat cordate, long-acuminated, fringed, at length spreading; peduncles villous; calyxes smooth, glandular. ħ. G. Native of the Cape of Good Hope. Búcco acuminàta, Wendl. coll. 1. t. 28. Flowers white or pale-blue.

Acuminated-leaved Agathosma. Fl. April, July. Clt. 1812. Shrub 1 to 2 feet.

42 A. lycopodioìdes; leaves closely imbricate, ovate, cuspidate, downy beneath; stem dichotomous; pedicels pubescent; petals roundish. ħ. G. Native of the Cape of Good Hope. Diósma lycopodioìdes, Willd. in Rœm. et Schult. 5. p. 461. Flowers white?

Lycopodium-like Agathosma. Shrub 1 to 2 feet.

43 A. apicula'ta (Meyer in Bartl. et Wendl. diosm. ex Spreng.) leaves crowded, much spreading, and somewhat reflexed, ovate, somewhat cordate, awned, revolute, quite smooth, without dots; segments of the calyx ovate, cuspidate. ħ. G. Native of the Cape of Good Hope. Diósma apiculàta, Spreng. syst. 1. p. 787. Flowers white or lilac?

Pointed-leaved Agathosma. Shrub 1 to 2 feet.

44 A. rufe'scens; leaves crowded, somewhat trigonal, awl-shaped, smooth, with thickened revolute margins; pedicels and calyxes rufescent; segments of calyx linear-lanceolate. ħ. G. Native of the Cape of Good Hope. A. rùbrum, Willd. herb. Diósma rufèscens, Spreng. syst. 1. p. 787. Flowers lilac.

Rufescent Agathosma. Shrub 1 to 2 feet.

45 A. hi'rta; leaves somewhat imbricate, linear, awl-shaped, channelled, hairy on the back, decurrent; flowers densely capitate. ħ. G. Native of the Cape of Good Hope. Diósma hírta, Lam. dict. 2. p. 286. Petals white, bearded at the claws.

Hairy Agathosma. Shrub 1 to 2 feet.

46 A. obtusa'ta; leaves aggregate, rather trigonal, obtuse, short, dotted, scabrous, rather imbricated; flowers umbellate; calyx scabrous, as well as the peduncles; ovaries scabrous. ħ. G. Native of the Cape of Good Hope. Búcco obtusàta, Wendl. coll. 3. p. 7. t. 76. Rœm. et Schult. 5. p. 444. Flowers pale-flesh-coloured.

Obtuse-leaved Agathosma. Shrub 1 to 2 feet.

Cult. These beautiful heath-like shrubs thrive best in a mixture of sand and peat, with the addition of a little turfy loam; and young cuttings will strike root freely in a pot of sand, under a bell-glass, without heat.

XIV. MACRO'STYLIS (from μακρος, *macros*, long, and στυλος, *stylos*, a style; style very long). Bartl. et Wendl. diosm. ex Andr. Juss. in mem. mus. 12. p. 476. t. 20. no. 20.—Diósma species of authors.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted. Disk adnate to the base of the calyx, with a free thickened margin. Petals 5, gradually tapering into a broad claw, which is bearded on the inside. Stamens 5, alternating with the petals, exserted; anthers globose, each furnished with a minute gland at the apex. Style oblong, exserted, tapering to the top into a minute 3-lobed stigma. Capsule of 3 conniving carpels, tapering at the top into a compressed horn each.—Small shrubs, with scattered, rarely opposite, dotted, somewhat keeled leaves. Flowers reddish, sub-umbellately aggregate at the tops of the branches. Peduncles short or very short, with bracteas at their base.

1 M. lanceola'ta (Bartl. et Wendl. diosm. ex Spreng.) leaves crowded, lanceolate, erect, acutish, smooth; flowers capitate. ħ. G. Native of the Cape of Good Hope. Diósma barbàta, Spreng. syst. 1. p. 783. Agathósma barbàta, Spreng. pug. 1. p. 20. Flowers white.

Lanceolate-leaved Macrostylis. Fl. April, July. Clt. 1810. Shrub 1 to 2 feet.

2 M. barbi'gera (Bartl. et Wendl. diosm. ex Spreng.) leaves opposite, cordate, stem clasping, acute, smooth; corymbs terminal, almost sessile. ħ. G. Native of the Cape of Good Hope. Diósma barbígera, Thunb. prod. 43. Lin. fil. suppl. 155. Flowers reddish, with a white beard.

Beard-bearing Macrostylis. Shrub 1 to 2 feet.

3 M.? corda'ta; leaves somewhat cordate, oblong, acute, fringed, recurved, imbricated. ħ. G. Native of the Cape of Good Hope. Diósma cordàta, Mart. hort. erl. enum. 67. Flowers white or reddish.

Cordate-leaved Macrostylis. Fl. April, July. Clt. 1823. Sh. 1 to 2 feet.

4 M. obtu'sa (Bartl. et Wendl. diosm. ex Spreng. l. c.) leaves crowded, ovate, obtuse, much spreading, smooth; flowers capitate. ħ. G. Native of the Cape of Good Hope. Diósma obtùsa, Meyer ex Spreng. syst. 1. p. 783. Flowers reddish.

Obtuse-leaved Macrostylis. Shrub 1 to 2 feet.

5 M. squarròsa (Bartl. et Wendl. diosm. ex Spreng.) leaves scattered, ovate, obtuse, smoothish, squarrosely recurved. ħ. G. Native of the Cape of Good Hope. Diósma squarròsa, Wendl. Flowers reddish.

Squarrose-leaved Macrostylis. Shrub 1 to 2 feet.

Cult. These pretty little shrubs require the same treatment as that recommended for *Agathósma*.

XV. EMPLEU'RUM (from εν, *en*, in, and πλευρον, *pleuron*, the pleura or membrane which envelopes the lungs; the seeds are attached to a sort of coriaceous membrane). Sol. in hort. kew. 3. p. 340. D. C. prod. 1. p. 718. Andr. Juss. in mem. mus. 12. p. 476. t. 20. no. 21.

Lin. syst. *Monoe'cia, Tetrándria.* Flowers monoecious or polygamous from abortion. Calyx permanent, 4-cleft. Disk and petals wanting. Filaments 4, awl-shaped; anthers thick, longer than the filaments, each furnished with an immersed gland at the apex. Carpel 1, rarely 2, ending in a long horn, furnished on the inner side with the cylindrical tooth-like style and stigma, at length becoming like a legume, 2-valved, 1-seeded from abortion. Seed shining.—A shrub, with alternate, linear-oblong, smooth leaves, which are covered with glandular dots beneath, and in the same way crenulated on the margins. Flowers axillary, solitary, twin or in threes; peduncles short, furnished with bracteas at their base.

1 E. serrula'tum (Sol. l. c. Smith, exot. bot. 2. t. 63.) ♄. G. Native of the Cape of Good Hope. E. Aitòni, Gmel. syst. 1. p. 268. Diósma unicapsulàris, Lin. fil. suppl. 155. D. ensàta, Thunb. prod. 43.

Serrulate-leaved Empleurum. Fl. June, July. Clt. 1774. Shrub 2 to 3 feet.

Cult. This shrub will grow freely in a mixture of sand and peat; and cuttings will readily strike root if planted in a pot of sand, with a bell-glass placed over them, without heat.

Tribe IV.

DIO'SMEÆ-AUSTRALA'SICÆ. Andr. Juss. in mem. mus. 12. p. 477. Flowers regular. Petals free. Filaments free. Disk wanting. Stamens double the number of the petals, never abortive. Ovaries distinct. Seeds with a thickish cover. Embryo slender, terete, within a dense albumen, with a straight radicle and linear cotyledons.—Trees, but usually shrubs, with opposite and alternate, simple, ternate, but rarely impari-pinnate leaves, for the most part flat. Flowers axillary or terminal, sometimes, but rarely, sessile, within an involucre, usually stalked. Peduncles one or many-flowered, furnished with bracteas. Different parts of the plants are beset with scales or stellate hairs. All natives of New Holland and Van Diemen's Land.

XVI. CORRÆ'A (in honour of Joseph Correa de Serra, a learned Portuguese, who, without publishing much, was one of the most profound theoretical botanists of the age). Smith in Lin. trans. 4. p. 219. D. C. prod. 1. p. 719. Andr. Juss. in mem. mus. 12. p. 478. t. 21. no. 22.

Lin. syst. *Octándria, Monogýnia.* Calyx cup-shaped, 4-toothed or entire, permanent. Petals 4, somewhat connivent at the base or joined into a long tube. Stamens 8, equal or longer than the petals; the 4 opposite them shortest; filaments smooth, awl-shaped, or dilated above the base. Ovary 4-lobed, densely beset with stellate hairs, and as if it were furnished with a calyptra. Style 4-furrowed, smooth, terminated by a 4-lobed stigma. Fruit of 4 capsular carpels; cells truncate, compressed. Seeds 2 or 3 in each cell, shining, fixed to the inside.—Shrubs, with opposite entire leaves, clothed with starry hairs. Pedicels 1-flowered, solitary, twin or tern, axillary.

* *Breviflòræ. D. C. prod.* 1. *p.* 719. *Petals more or less distinct, hardly half an inch long.*

1 C. a'lba (Andr. bot. rep. t. 18.) leaves ovate, downy beneath; teeth of calyx small, acute, distant. ♄. G. Native of New South Wales. Vent. malm. t. 13. C. cotinifòlia, Sal. par. lond. t. 100. Corolla white. Leaves white or rufous beneath, and rather whitish above.

Var. β, rotundifòlia (D. C. prod. 1. p. 719.) leaves ovate-roundish. C. rùfa, Vent. malm. 13. in a note, no. 2.

White-flowered Correa. Fl. April, July. Clt. 1793. Shrub 10 feet.

2 C. ru'fa (Gært. fruct. 3. p. 155. t. 210.) leaves ovate, or somewhat oblong, downy beneath; teeth of calyx broad, very blunt. ♄. G. Native of New South Wales. Mazeutóxeron rùfum, Lab. voy. 2. p. 11. t. 17. Leaves clothed with rufous down beneath, and obscurely green above. Flowers white.

Rufous-leaved Correa. Fl. April, July. Clt. 1819. Shrub 6 ft.

** *Longiflòræ. D. C. prod.* 1. *p.* 719. *Petals joined into a long, cylindrical, 4-toothed corolla.*

3 C. speciòsa (Andr. bot. rep. t. 653.) leaves ovate, blunt, clothed with rusty down beneath; flowers erect; calyx truncate. ♄. G. Native of New Holland, on the eastern coast. Ker. bot. reg. t. 26. Sims, bot. mag. t. 1746. Lois. herb. amat. t. 309. C. rùbra, Smith, exot. bot. 2. no. 26. C. revolùta, Vent. malm. no. 4.? Corolla scarlet, yellowish-green inside. This is a truly shewy shrub, but now very common in gardens.

Shewy Correa. Fl. year. Clt. 1806. Shrub 2 to 6 feet.

4 C. pulche'lla (R. Br. mss. Sweet, fl. austr. t. 1.) leaves ovate, cordate, obtuse, waved, beset with stellate pubescence; adult ones smooth; flowers solitary, pendulous; calyx truncate, entire; corolla tubular, with the throat ciliated. ♄. G. Native of Kangaroo Island, on the south coast of New Holland. Lindl. bot. reg. 1224. Corolla of a bright-salmon colour.

Neat Correa. Fl. April, July. Clt. 1824. Shrub 6 feet.

5 C. vi'rens (Smith, exot. bot. 2. p. 25. t. 72.) leaves ovate-oblong, somewhat cordate, a little toothletted, beset with glandular tomentum; flowers pendulous; calyx with 4 acute teeth. ♄. G. Native of New Holland, on the eastern and southern coast. C. viridiflòra, Andr. bot. rep. t. 436. C. refléxa, Pers. ench. 1. p. 419. Mazeutóxeron refléxum, Lab. voy. 2. p. 66. t. 19. Corolla greenish, an inch or an inch and a half long.

Green-flowered Correa. Fl. Nov. July. Clt. 1800. Shrub 3 to 8 feet.

Cult. Corræ'a is a genus of very shewy flowering shrubs. They will thrive well in an equal mixture of loam and peat, and ripened cuttings will strike root freely if planted thinly in a pot of sand, and a bell-glass placed over them, without heat. They are also increased by inarching the rarer on the commoner sorts.

XVII. DIPLOLÆ'NA (from διπλοος, *diploos*, double, and χλαινα, *chlaina*, a cloak; in allusion to the double involucrum). R. Br. gen. rem. 14. Desf. in mem. mus. 3. p. 449. D. C. prod. 1. p. 719. Andr. Juss. in mem. mus. 12. p. 479.

Lin. syst. *Decándria, Monogýnia.* Involucrum double, outer one 5-lobed, inner 10-15-parted, longer than the outer one, imbricate, containing many flowers. Flowers sessile, furnished with a 5-leaved chaffy calyx or involucel, or a 5-petalled corolla, naked or fringed. Stamens 10, exserted; the 5 opposite the petals or sepals shortest; filaments awl-shaped, fringed at the base; anthers oblong. Style 5-furrowed, terminating in a blunt 5-lobed stigma. Fruit of 5 distinct, 2-valved, 1-seeded carpels, transversely striated. Seeds oblong, cylindrical, almost like those of *Corræ'a*.—Shrubs, with alternate oval leaves, full of glandular pellucid dots, and are, as well as the branches, peduncles, and leaflets of involucre, closely covered with starry down. The many-flowered involucre appears like one terminal pedicellate flower.

1 D. grandiflòra (Desf. in mem. mus. 3. t. 19.) leaves oval, emarginate, hoary on both surfaces. ♄. G. Native of New Hol-

land, on the western coast in Endracht Land, in the sand. Heads of flowers 2 inches in diameter.

Great-flowered Diplolæna. Shrub 4 feet?

2 D. Dampie'ri (Desf. l. c. t. 20.) leaves obovate-oblong, emarginate, green, and smooth above, hoary beneath. ♄. G. Native along with the preceding.—Dampier, voy. 4. p. 141. t. 3. f. 3.

Dampier's Diplolæna. Shrub 4 feet?

Cult. These singular shrubs, none of which have as yet been introduced into our gardens, will perhaps grow freely in a mixture of sand and peat; and ripened cuttings will probably strike root, if planted in a pot of sand with a bell-glass placed over them, without heat.

XVIII. PHEBA'LIUM (from φιβαλεη, *phibalee*, a myrtle; habit of plants). Vent. malm. no. 102. D. C. prod. 1. p. 719. Andr. Juss. in mem. mus. 12. p. 479.—Eriostèmon, spec. Labill.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-cleft or 5-toothed (f. 123. *a.*), permanent. Petals 5, spreading (f. 123. *b.*). Stamens 10 (f. 123. *d. c.*), the 5 opposite the petals shortest; filaments smooth, filiform or awl-shaped; anthers versatile. Style 5-furrowed, smooth, terminated by an equal or broader 5-furrowed stigma (f. 123. *a. e.*). Carpels 5 (f. 123. *f.*), capsular, girded by the calyx; carpels 2-valved, 1-seeded. Ovaries smooth or densely clothed with scales or hairs, calyptrate.—Trees, but usually shrubs, with alternate, simple, subovate or linear leaves, entire, or a little crenated, full of pellucid dots. Flowers corymbose, terminal, and axillary; pedicels bracteate. Flowers small, yellowish. Divers parts of plants covered with scales or starry down. Petals in the bud valvate.

1 P. correæfòlium (Andr. Juss. in mem. soc. hist. nat. par. vol. 2. t. 10.) leaves lanceolate, ovate, scabrous above, but clothed with starry down beneath; peduncles axillary, tern. ♄. G. Native of New Holland. P. ovàtum, Sieb. pl. exsic.

Corræa-leaved Phebalium. Shrub 4 to 5 feet.

2 P. hexape'talum (Andr. Juss. in mem. soc. hist. nat. vol. 2. t. 11. f. 1.) leaves oblong, obtuse, clothed with starry hairs on both surfaces; peduncles terminal, crowded; flowers 6-petalled, 12-anthered. ♄. G. Native of New Holland.

Six-petalled Phebalium. Shrub 4 feet.

3 P. squamulòsum (Vent. malm. t. 102.) leaves linear-lanceolate, acute, scaly beneath, as well as the flowers; flowers terminal, umbellate; stamens exserted. ♄. G. Native of New Holland, on mountains on the eastern coast. Eriostèmon lepidòtum, Spreng. syst. 2. p. 322.

Scaly Phebalium. Fl. April, July. Clt. 1824. Shrub 3 feet.

4 P. a'nceps (D. C. prod. 1. p. 720. Andr. Juss. l. c. t. 12. f. 2.) leaves spatulate-lanceolate, smoothish, obtuse, young ones covered with scales on both surfaces, adult ones nearly naked; flowers terminal, corymbose, scaly; stamens not exserted. ♄. G. Native of New Holland, on the eastern coast. Eriostèmon ánceps. Spreng. syst. 2. p. 164.

FIG. 123.

Two-edged Phebalium. Shrub 4 to 5 feet.

5 P. Billardie'rii (Andr. Juss. in mem. soc. hist. nat. par. vol. 2. p. 12.) leaves lanceolate, quite entire, covered with rufous or silvery scales beneath; branches angular; peduncles axillary, trifid, 3-flowered; stamens exserted. ♄. G. Native of New Holland. Eriostèmon squámmeum, Labill. nov. holl. 1. p. 111. t. 141. P. eleagnoìdes, Sieb. pl. exsic.

La Billardier's Phebalium. Fl. April, Aug. Clt. 1822. Shrub 5 to 7 feet.

6 P. eleagnifòlium (Andr. Juss. in mem. soc. hist. nat. par. vol. 2. t. 11. f. 2.) leaves linear, blunt, with rows of dots above, and covered with rufous silvery scales beneath; peduncles terminal and axillary, umbellate; stamens exserted. ♄. G. Native of New Holland. P. ánceps, Sieb. pl. exsic.

Eleagnus-leaved Phebalium. Shrub 3 to 5 feet.

7 P. salicifòlium (Andr. Juss. in mem. soc. hist. nat. vol. 2. t. 12. f. 1.) leaves linear-lanceolate, crenated, covered beneath with starry powdery down; flowers axillary, umbellate; stamens exserted. ♄. G. Native of New Holland.

Willow-leaved Phebalium. Clt. 1824. Shrub 3 to 4 feet.

8 P. phylicoìdes (Sieb. pl. exsic. in Spreng. syst. app. p. 164.) leaves linear, short, obtuse, rough, revolute beneath; branches straight, hispid; flowers in terminal fascicles; stamens exserted. ♄. G. Native of New Holland. P. diósmeum, Andr. Juss. in mem. soc. hist. nat. vol. 2. t. 11. f. 3.

Phylica-like Phebalium. Shrub 2 to 3 feet.

9 P. au'reum (Cuningh. in Field's new south wales, p. 331. with a figure,) leaves linear-oblong, narrow, obtuse, a little emarginate, revolute, covered with rusty scales beneath; corymbs terminal and lateral; peduncles and branchlets rusty. ♄. G. Native of New South Wales, on the Blue Mountains, in bleak exposed situations. Shrub branching. Flowers golden.

Golden Phebalium. Fl. April, July. Clt. 1823. Shrub 6 ft.

10 P. lachnoìdes (Cuningh. in Field's new south wales, p. 332.) leaves scattered, linear, even, hooked, acutish, white beneath, with revolute edges; flowers axillary, disposed in heads near the extremities of the branches. ♄. G. Native of New Holland, on Blackheath in the Blue Mountains, in bare rocky situations. A tall, handsome shrub. Flowers yellow.

Lachnæa-like Phebalium. Fl. April, July. Clt. 1824. Shrub 6 feet.

11 P. ela'tum (Cuningh. in Field's new south wales, p. 331.) leaves lanceolate or ovate-lanceolate, acuminated, silvery beneath; corymbs axillary, divided, stalked; branches covered with rusty scales. ♄. G. Native of New South Wales, on shaded declivities in the vicinity of Spring Wood. A slender arborescent plant. Flowers yellow.

Tall Phebalium. Clt. 1825. Shrub 10 feet.

Cult. An equal mixture of sandy loam and peat is the best soil for the plants belonging to this genus, but care must be taken not to over water them; they delight in an airy situation, and not to be crowded among other plants. Cuttings will strike root freely in a pot of sand, with a bell-glass placed over them, without heat.

XIX. PHILOTHE'CA (from ψιλος, *psilos*, [error φιλος,] smooth, and ϑηκη, *theke*, a sheath; in allusion to the tube of the stamens being smooth). Rudge in Lin. trans. 11. p. 298. D. C. prod. 1. p. 721. Andr. Juss. in mem. mus. 12. p. 480. t. 21. no. 23.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted. Petals 5, unguiculate. Stamens 10, the 5 opposite the petals shortest, all a little shorter than the petals, flat, joined from the base to the middle into a smoothish tube, but hairy in the free part; anthers heart-shaped, oscillatory, each furnished with a short appendage at the apex. Style 5-furrowed, somewhat spindle-shaped, hispid, terminated by a capitate 5-furrowed stigma. Fruit of 5 1-seeded carpels, joined together on the inside.—Heath-like shrubs, with alternate, linear, short, simple, dotted leaves, which are somewhat umbricate, and convex beneath. Peduncles solitary, axillary or terminal, 1-flowered, furnished with minute scale-like bracteas.

1 P. austra'lis (Rudge in Lin. trans. 11. p. 298. t. 21.)

leaves very numerous, linear, somewhat imbricate, convex beneath; pedicels axillary. ♄. G. Native of New South Wales, about Port Jackson. Eriostèmon salsolifòlia, Smith in Rees' cycl. 13. no. 3. Flowers pale-red.

Southern Philotheca. Fl. April, June. Clt. 1822. Shrub 2 to 3 feet.

2 P. Gaudicha'udii; leaves scattered; peduncles terminal? ♄. G. Native of New Holland.

Gaudichaud's Philotheca. Shrub 2 feet.

Cult. These pretty shrubs require the same treatment as that recommended for *Phebàlium*.

XX. CRO'WEA (in honour of James Crowe, of Norwich, an excellent British botanist, and a great collector of willows). Smith, in Lin. trans. 4. p. 220. D. C. prod. 1. p. 720. Andr. Juss. in mem. mus. 12. p. 481. t. 21. no. 24.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted, permanent. Petals 5, sessile. Stamens 10, the 5 opposite the petals shortest, all shorter than the petals, linear, fringed, lying close together so as to form a tube; anthers oblong, cordate, adnate, drawn out at the apex into a long, bearded appendage. Style 5-furrowed, smooth, terminated by a capitate, 5-furrowed stigma. Fruit of 5 joined, 1-seeded carpels.—Shrubs with alternate, quite entire, lanceolate leaves, running down the stem a little at the base, and full of pellucid dots. Branches triquetrous. Peduncles axillary, 1-flowered, furnished with minute, imbricate bracteas at their base. Calyx and petals convolute in the bud.

1 C. salígna (Andr. bot. rep. t. 79.) leaves lanceolate. ♄. G. Native of New South Wales. Sims, bot. mag. t. 989. Vent. malm. t. 7. Corolla pale-purple or rather pink. Calyx and petals smooth.

Willow-leaved Crowea. Fl. July, Dec. Clt. 1790. Shrub 1 to 2 feet.

2 C. latifo'lia (Lodd. cat. 1824.) leaves ovate-lanceolate. ♄. G. Native of New Holland. Flowers pale-purple or pink.

Broad-leaved Crowea. Fl. Jul. Dec. Clt. 1824. Sh. 1 to 2 ft.

Cult. These beautiful shrubs require the same treatment as that recommended for *Phebàlium*.

XXI. ERIOSTE'MON (from *εριον, erion,* woolly, and *στημων, stemon,* a stamen; stamens woolly). Smith, in Lin. trans. 4. p. 221. D. C. prod. 1. p. 720. Andr. Juss. in mem. mus. 12. p. 481. t. 21. no. 25.

Lin. syst. *Decándria, Monogýnia.* Calyx 5-parted, permanent. Petals 5, marcescent as well as the stamens. Stamens 10, the 5 opposite the petals shortest, all shorter than the petals, free, flat, hispid, fringed, tapering to the apex into a thread, which bears the anthers; anthers heart-shaped, appendiculate at the apex. Style 5-furrowed, very short, hispid or smooth, terminated by a capitate, 5-furrowed stigma. Fruit of 5 carpels, which are joined together at the base, each containing 1, rarely 2 seeds.—Shrubs with alternate, entire, simple leaves, sometimes ending in a callose point, full of pellucid dots. Peduncles axillary, 1-flowered, covered with imbricate bracteas, or furnished with opposite or whorled ones on the middle. Sometimes the peduncles are divided into 2-5 pedicels, furnished with bracteas at their base. Calyx and petals convolute in the bud.

1 E. buxifòlium (Smith, in Rees' cyclo. 13. no. 2.) leaves elliptical, smooth; middle nerve very prominent, and is drawn out at the apex into a strong, recurved mucrone; branches round, pilose; flowers axillary, almost sessile, smooth; filaments hispid. ♄. G. Native of New Holland, about Port Jackson. Flowers pink or rose-coloured.

Var. α, obovàtum; leaves obovate, tapering to the base, glandularly crenated.

Var. β, ellípticum; leaves broadly elliptical, cordate at the base, somewhat stem-clasping, usually entire, and glandular.

Box-leaved Eriostemon. Fl. April, July. Clt. 1822. Shrub 1 to 2 feet.

2 E. salicifòlium (Smith, in Rees' cycl. 13. no. 1.) leaves linear-lanceolate, entire, smooth; branches triquetrous; flowers axillary, almost sessile, solitary; calyxes and petals hoary on the outside; filaments hispid. ♄. G. Native of New Holland, about Port Jackson. Rudge, in Lin. trans. 11. t. 26. Hook, bot. mag. 2854. Flowers pink. Habit of *Cròwea*. Cròwea scàbra, Graham, in edinb. phil. journ. 1827. p. 174.

Willow-leaved Eriostemon. Fl. April, July. Clt. 1822. Shrub 2 to 3 feet.

3 E. myoporoìdes (D. C. prod. 1. p. 720.) leaves linear-lanceolate, quite entire, smooth, dotted with glands, and terminated by a callose mucrone; branches round; peduncles axillary, trifid, 3-flowered; calyxes and petals smooth; filaments a little fringed on the margin. ♄. G. Native of New Holland, on the eastern coast. Flowers rose-coloured.

Myoporum-like Eriostemon. Clt. 1824. Shrub 1 to 2 feet.

4 E. linearifòlium (D. C. prod. 1. p. 720.) leaves linear, obtuse, quite entire, smooth, covered with glandular dots; peduncles axillary and terminal, 3-flowered. ♄. G. Native of New Holland. Flowers rose-coloured.

Linear-leaved Eriostemon. Fl. April, Aug. Clt. 1823. Shrub 1 to 2 feet.

5 E. obova'le (Cuningh. in Field's new south wales, p. 331.) leaves oboval, wedge-shaped, or broadly spatulate, retuse, concave, stalked, smooth, fleshy, terminating in a short mucrone; flowers solitary, terminal, or axillary. ♄. G. Native of New Holland, on the verge of the Regent's Glen, Blue Mountains. Flowers rose-coloured.

Oboval-leaved Eriostemon. Fl. May, July. Clt. 1824. Shrub 1 to 2 feet.

6 E. cuspida'tum (Cuningh. in Field's new south wales, p. 331.) leaves oblong-lanceolate, acute, rather glaucous, ending in a hooked mucrone; racemes umbellate, 4-5-flowered, axillary or terminal. ♄. G. Native of New Holland, on rocky hills at Cox's River. Lodd. bot. cab. t. 1247. Flowers rose-coloured or pink. A shrub of strong growth.

Pointed-leaved Eriostemon. Fl. Jul. Oct. Clt. 1823. Shrub 2 to 4 feet.

7 E. neriifòlium (Sieb. ex Spreng. syst. app. p. 164.) leaves lanceolate, marginate, mucronate, dotted; peduncles axillary, 3-flowered; filaments bearded. ♄. G. Native of New Holland. Flowers rose-coloured or pink.

Oleander-leaved Eriostemon. Shrub 3 feet.

8 E. hispídulum (Sieb. ex Spreng. l. c.) leaves somewhat spatulate, mucronate, callosely crenate, hispid above, and clothed with starry villi beneath; peduncles 1-flowered. ♄. G. Native of New Holland. Flowers rose-coloured or pink.

Hispid-leaved Eriostemon. Shrub 1 to 3 feet.

9 E. corymbòsum (Labill. nov. cal. p. 59. t. 58.) leaves large, oblong, silky as well as covered with brown scales beneath; corymbs terminal; filaments hairy; anthers naked at the apex. ♄. G. Native of New Caledonia. Flowers dark-coloured.

Corymbose-flowered Eriostemon. Tree 18 to 24 feet.

10 E. lanceola'tum (Gært. fruct. 3. p. 154. t. 210.) leaves lanceolate, rather wrinkled. ♄. G. Native of New Holland. E. australásicum, Smith, in Lin. trans. 4. p. 221. Flowers rose-coloured.

Lanceolate-leaved Eriostemon. Clt. 1823. Shrub 1 to 3 ft.

Cult. Eriostèmon is a genus of beautiful shrubs with pink flowers, which deserve to be cultivated in every collection of greenhouse shrubs. They require the same treatment as that recommended for *Phebàlium*, see p. 791.

XXII. BORO'NIA (named after Francis Borone, an Italian servant of Dr. Sibthorp, who perished from an accident at Athens, he collected specimens of many of those plants which are figured in the Flora Græca). Smith, tracts, p. 285. D. C. prod. 1. p. 721. Andr. Juss. in mem. mus. 12. p. 483. t. 22. no. 26.

Lin. syst. *Octándria, Monogýnia.* Calyx 4-parted or 4-cleft, permanent. Petals 4, marcescent. Stamens 8, the 4 opposite the petals shortest, all shorter than the petals, free, fringed, or tubercled, linear, usually dilated at the top, whence a very short thread rises, bearing the anther; anthers heart-shaped, usually with a short appendage at the apex. Styles 4, erect, smooth, approximate or joined together, terminated by an equal or capitate 4-furrowed stigma. Fruit of 4 2-valved carpels. Seeds ovate, compressed, usually one in each carpel.—Shrubs with opposite, simple, or impari-pinnate leaves, entire, or a little serrulated, full of pellucid dots. Peduncles terminal but usually axillary on the extreme branches, 1 to many-flowered. Pedicels furnished at the base and middle with 2 opposite, short bracteas, jointed, commonly dilated under the calyx. Flowers rose, purplish, or reddish, with a pleasant sweet scent.

* *Leaves impari-pinnate, terminal leaflet sessile.*

1 B. pinna'ta (Smith, l. c. t. 4.) leaflets 2-3-4 pairs, linear, acute, quite smooth; peduncles dichotomous; flowers octandrous. ♄. G. Native of New Holland, about Port Jackson. Andr. bot. rep. t. 58. Vent. malm. t. 38. Sims, bot. mag. t. 1763. Lodd. bot. cab. t. 473. Flowers pink, with a scent like that of hawthorn.

Pinnate-leaved Boronia. Fl. Feb. May. Clt. 1794. Shrub 1 to 3 feet.

2 B. psoraleòides (D. C. prod. 1. p. 721.) leaflets 1 or 2 pairs, and are as well as the branches quite smooth, but beset with glandular dots, linear, obtuse; peduncles short, 1-flowered; flowers tetrandrous. ♄. G. Native of New Holland, on the south coast. Flowers small, pale-red.

Psoralea-like Boronia. Shrub 1 to 3 feet.

3 B. tetra'ndra (Labill. nov. holl. 1. p. 98. t. 125.) leaflets 4 or 5 pairs, linear, obtuse, smooth; branches pilose; pedicels short, 1-flowered; flowers tetrandrous. ♄. G. Native of New Holland, in Van Leuwin's Land. Flowers pale-purple.

Tetrandrous-flowered Boronia. Clt. 1824. Shrub 1 to 4 ft.

4 B. Cando'llii; leaflets 5 or 6 pairs, smooth; petioles a little winged; leaflets oblong-oval, blunt, toothed at the apex. ♄. G. Native of New Holland. Zanthóxylum oppositifòlium, D. C. prod. 1. p. 728. Flowers red.

De Candolle's Boronia. Shrub 1 to 3 feet.

5 B. pilòsa (Labill. nov. holl. 1. p. 97. t. 124.) leaflets 2 to 5 pairs, linear, approximate, and are as well as the branches rather pilose; peduncles 1-flowered; flowers octandrous. ♄. G. Native of New Holland at Cape Van Diemen. Flowers rose-coloured, full of pellucid dots.

Pilose Boronia. Shrub 1 foot.

6 B. ala'ta (Smith, in Lin. trans. 8. p. 283.) rachis winged; leaflets 3-5 pairs or more, crenate, revolute, pilose on the nerves beneath, as well as the rachis; peduncles dichotomous, usually 3-flowered; bracteas fringed; flowers octandrous. ♄. G. Native of New Holland, on the western coast. Sweet, fl. austr. 48. Flowers small, of a dirty pale-rose colour, tipped with green.

Winged-petioled Boronia. Fl. May, July. Clt. 1823. Shrub 2 to 6 feet.

7 B. floribu'nda (Sieb. pl. exsic. ex Spreng. syst. app. p. 148.) rachis margined; leaflets 3 pairs, linear-lanceolate, mucronate, serrulated; peduncles tern. ♄. G. Native of New Holland. Flowers rose-coloured.

Bundle-flowered Boronia. Shrub 1 to 6 feet.

8 B. microphy'lla (Sieb. pl. exsic. ex Spreng. syst. app. p. 148.) leaflets 6 pairs, minute, obovate, mucronate; peduncles tern. ♄. G. Native of New Holland. Flowers pink.

Small-leaved Boronia. Shrub 1 to 3 feet.

** *Leaves trifoliate or trifid.*

9 B. triphy'lla (Sieb. pl. exsic. ex Spreng. syst. app. p. 148.) leaves ternate; leaflets linear, revolute, downy beneath; peduncles axillary, 1-flowered. ♄. G. Native of New Holland. Flowers rose-coloured.

Three-leaved Boronia. Shrub 1 to 3 feet.

10 B. anemonifòlia (Cuningh. in Field's new south wales, p. 330.) leaves stalked, trifid; segments narrow, wedge-shaped, furnished with 2 or 3 teeth at the apex or quite entire; petioles channelled; peduncles axillary, solitary, 1-flowered; filaments blunt at the apex; anthers spurred. ♄. G. Native of New Holland, on the verge of the Regent's Glen, Blue Mountains. Flowers pink.

Anemone-leaved Boronia. Shrub 1 to 3 feet.

*** *Leaves variable.*

11 B. paradóxa (D. C. prod. 1. p. 722.) leaves simple, trifoliate and pinnate, lanceolate, with revolute edges, hairy beneath. ♄. G. Native of New Holland, about Port Jackson. Eriostèmon paradóxum, Smith, in Rees' cyclop. 13. no. 6. Flowers rose-coloured, copious, on axillary, solitary, 1-flowered peduncles, which are shorter than the leaves, angular, covered with rusty, starry scales or pubescence. Petioles winged; leaflets sessile. It is doubtful whether the simple, ternate, and pinnate leaves are to be found on the same plant; we presume they belong to distinct species, and are probably identical with some of those described above.

Paradoxical Boronia. Shrub 1 to 3 feet.

**** *Leaves simple.*

12 B. serrula'ta (Smith, in Lin. trans. 8. p. 284. tracts, t. 5.) leaves trapeziform, acute, serrulated in front, smooth, full of glandular dots; peduncles aggregate, terminal. ♄. G. Native of New Holland, about Port Jackson. Flowers of a deep-rose colour, very fragrant. Filaments hispid at the base. Anthers hispid. Stigma sessile, capitate, 4-furrowed. Lindl. bot. reg. 842. Lodd. bot. cab. t. 998. Sweet, fl. austr. t. 19.

Serrulate-leaved Boronia. Fl. June, July. Clt. 1816. Shrub 1 to 6 feet.

13 B. crenula'ta (Smith, in Lin. trans. 8. p. 284.) leaves obovate, mucronulate, crenulated; pedicels axillary and terminal, 1-flowered; filaments obtuse and glandular at the apex. ♄. G. Native of New Holland, at King George's Sound. Flowers small, red, with a fringed calyx. Anthers nearly terminal.

Crenulate-leaved Boronia. Shrub 1 to 4 feet.

14 B. denticula'ta (Smith, in Lin. trans. 8. p. 284.) leaves linear, retuse, toothletted, terminated by a small point; peduncles corymbose; filaments blunt and glandular at the apex. ♄. G. Native of New Holland at King George's Sound. Lindl. bot. reg. t. 100. Flowers rose-coloured. Bracteas deciduous. Anthers on lateral, horizontal stalks.

Toothletted-leaved Boronia. Fl. March, Aug. Clt. 1823. Shrub 2 to 6 feet.

15 B. parviflòra (Smith, in Lin. trans. 8. p. 285. tracts, t. 6.) leaves obovate-lanceolate, obsoletely-crenulated; peduncles 1-flowered, bracteolate; filaments oblong and glandular at the

apex. ♄. G. Native of New Holland, about Port Jackson. Flowers rose-coloured. Habit of *B. denticulàta*, but smaller in all its parts.

Small-flowered Boronia. Shrub 3 feet.

16 B. TETRATHECOÌDES (D. C. prod. 1. p. 722.) leaves linear, quite entire, smooth, rather acute at both ends, and somewhat revolute on the edges; peduncles axillary, 1-flowered, short, each bearing 2 bracteas; filaments hispid. ♄. G. Native of New Holland, on the eastern coast. Tetrathèca oppositifòlia, Pers. ench. 1. p. 419. Flowers rose-coloured.

Tetratheca-like Boronia. Shrub 1 to 3 feet.

17 B. PILONE'MA (Labill. nov. holl. 1. p. 98. t. 126.) leaves oblong-lanceolate, quite entire, acutish at both extremities; peduncles terminal, solitary, somewhat turbinate; filaments smooth, shortened at the apex. ♄. G. Native of New Holland at Cape Van Diemen. Flowers rose-coloured.

Cap-stamened Boronia. Fl. Mar. July. Clt. 1826. Shrub ½ to 1 foot.

18 B. POLYGALÆFÒLIA (Smith, in Lin. trans. 8. p. 285. tracts, t. 7.) leaves linear-lanceolate, quite entire; peduncles axillary, solitary, 1-flowered; filaments shortened at the apex. ♄. G. Native of New Holland, about Port Jackson. B. hyssopifòlia, Sieb. Flowers red. Leaves opposite, alternate, and 3 in a whorl.

Milkwort-leaved Boronia. Fl. March, July. Clt. 1824. Shrub 1 to 3 feet.

19 B. LEDIFÒLIA (Gay, diss. lasiop. p. 20. D. C. prod. 1. p. 722.) leaves linear-lanceolate, quite entire, downy beneath; peduncles axillary, 1-flowered, each bearing 2 bracteas in the middle; filaments hispid. ♄. G. Native of New Holland, on the eastern coast. Lasiopétalum ledifòlium, Vent. malm. no. 59. in a note. Flower-bud quadrate. Flowers red.

Ledum-leaved Boronia. Fl. Mar. April. Clt. 1814. Shrub 1 to 2 feet.

Cult. This is an elegant genus of small greenhouse shrubs, which deserve to be cultivated by every lover of plants. They thrive best in sandy peat, and the pots should be well drained with potsherds. Cuttings, taken off at a joint, and planted in a pot of sand, with a bell-glass placed over them, and then set in a frame, will strike root with care, the glass should be taken off occasionally, to allow the cuttings to dry, otherwise they are liable to damp.

XXIII. ZIE'RIA (in honour of Mr. John Zier, a learned and industrious Polish botanist, who assisted Mr. Dickson in his Cryptogamia). Smith, in Lin. trans. 4. p. 216. D. C. prod. 1. p. 722. Andr. Juss. in mem. mus. 12. p. 483. t. 22. no. 27.

LIN. SYST. *Tetrándria, Monogýnia.* Calyx 4-parted. Petals 4, inserted in a hypogynous disk. Stamens 4, alternating with the petals, exserted; filaments awl-shaped, smooth, each furnished with a simple gland on the inside at the base; anthers heart-shaped, oscillatory. Disk surrounding the ovaries and connected with the calyx. Style 4-furrowed, short, smooth, terminated by a 4-lobed capitate stigma. Carpels 4, connected into a 4-lobed, 4-celled capsule; lobes divaricate, with a solitary, compressed-ovate seed in each cell or carpel.—Trees or shrubs, with opposite, stalked, usually trifoliate leaves, but sometimes with simple ones on the same plant, smooth or pilose, full of pellucid dots. Peduncles axillary, rarely terminal, 1, but usually 2, 3, or many-flowered, bearing 2 opposite bracteas at the divisions and jointed. Flowers small, white. Hairs stellate.

1 Z. LANCEOLA'TA (Rr. Br. in Rees' cyclo. no. 1.) branches pubescent; leaflets lanceolate, flat, acute, full of pellucid dots; peduncles trichotomous, length of leaves. ♄. G. Native of New Holland, about Port Jackson. Lodd. bot. cab. 878. Z. Smíthii, Andr. bot. rep. t. 606. Curt. bot. mag. 1395. Bonpl. nav. t. 24. Peduncles panicled, many-flowered. Flowers small, white, with yellow anthers.

Lanceolate-leaved Zieria. Fl. April, Jul. Clt. 1808. Shrub 2 to 3 feet.

2 Z. MACROPHY'LLA (Bonpl. nav. p. 64. ?) branches powdery; leaflets oblong, flat, smooth, acute at both extremities, full of pellucid dots; racemes trichotomous, shorter than the leaves. ♄. G. Native of New Holland, about Port Jackson. This plant is commonly found in herbarii under the false name of *Fagàra evòdia*, Lin. or *Evòdia horténsis*, Forst. Flowers numerous, white.

Long-leaved Zieria. Fl. April, July. Clt. 1820. Sh. 4 ft.

3 Z. OBCORDA'TA (Cuningh. in Field's new south wales, p. 330.) shrubby, pilose; leaflets obovate, obcordate, retusely emarginate; flowers axillary, solitary. ♄. G. Native of New Holland, on hills on the Macquarie River. Flowers white.

Obcordate-leafletted Zieria. Fl. April, July. Clt. 1824. Shrub 1 to 2 feet.

4 Z. REVOLU'TA (Cuningh. l. c.) leaflets linear, revolute, acute; racemes axillary, and terminal. ♄. G. Native of New Holland, on the verge of the Regent's Glen, Blue Mountains. Flowers white.

Revolute-leaved Zieria. Fl. April, July. Clt. 1824. Shrub 2 to 3 feet.

5 Z. LÆVIGA'TA (Smith, in Rees' cycl. no. 2.) branches smooth; leaflets linear, revolute, acute, smooth, longer than the petioles; peduncles bifid or trifid, usually shorter than the leaves. ♄. G. Native of New Holland, about Port Jackson. Z. lævigàta, Bonpl. nav. p. 64. has the peduncles as long as the leaves, therefore it is probably a distinct plant. Flowers white, downy, like a piece of woollen cloth.

Smooth Zieria. Fl. April, July. Clt. 1822. Shrub 2 to 3 ft.

6 Z. CYTISOÌDES (Smith, in Rees' cycl. no. 4.) branches downy; leaflets obovate, downy on both surfaces; peduncles trifid, bearing leaves. ♄. G. Native of New South Wales. Flowers white. Leaflets entire, slightly revolute. Petals downy.

Cytisus-like Zieria. Tree 24 feet.

7 Z. ARBORE'SCENS (Sims, bot. mag. 1398. in a note) stem arboreous; leaflets downy beneath, without dots; peduncles longer than the petioles. ♄. G. Native of New Holland. Flowers white.

Arborescent Zieria. Tree 20 feet.

8 Z. MICROPHY'LLA (Bonpl. nav. p. 64.) branches silky; leaflets linear, revolute, smooth above but silky beneath; peduncles usually 3-flowered. ♄. G. Native of New Holland. Flowers white.

Small-leaved Zieria. Fl. April, Jul. Clt. 1822. Sh. 2 to 3 ft.

9 Z. PAUCIFLÒRA (Smith, in Rees' cycl. no. 3.) branches and petioles hairy; leaflets linear-obovate, sometimes with revolute edges; peduncles 1 or 3-flowered; lobes of calyx lanceolate, acute. ♄. G. Native of New Holland, about Port Jackson. Flowers small, white. Petals dotted with starry hairs.

Few-flowered Zieria. Fl. April, Jul. Clt. 1822. Sh. 1 to 2 ft.

10 Z. PILÒSA (Rudge, in Lin. trans. 10. p. 293. t. 17. f. 2.) leaflets lanceolate, hairy beneath; peduncles 1-flowered. ♄. G. Native of New Holland, about Port Jackson. Flowers white.

Pilose-leaved Zieria. Fl. April, Jul. Clt. 1822. Sh. 1 to 3 ft.

11 Z. HIRSU'TA (D. C. prod. 1. p. 723.) branches, petioles, and capsules hairy; leaflets oblong-linear, 3-times longer than the petioles, hairy beneath, and slightly revolute on the edges; peduncles 1-flowered. ♄. G. Native of New Holland on the Blue Mountains. Flowers white.

Hairy Zieria. Shrub 2 to 4 feet.

12 Z. OCTA'NDRA (Sweet, fl. aust. icon. ined.) stem arborescent, leaflets obovate, thickish, smooth; peduncles axillary, co-

rymbose. ♄. G. Native of New Holland. Flowers green, octandrous, by which it differs from the rest.

Octandrous Zieria. Fl. April, June. Clt. ? Tree 12 feet.

Cult. Many of the species of *Zièria* are very pretty. An equal mixture of loam and peat suits them best; and young cuttings, planted in a pot of sand, with a bell-glass placed over them, will strike root freely.

Tribe V.

DIO'SMEÆ-AMERICA'NÆ. Andr. Juss. in mem. mus. 12. p. 484. Flowers regular. Petals free. Stamens equal or double the number of the petals. Disk surrounding the ovaries or wanting. Embryo with the radicle pointing towards the hylum, short, straight, with large, ovate cotyledons. Albumen fleshy, rarely wanting.—Trees and shrubs, with opposite or alternate, simple, bifoliate, or ternate leaves. Flowers axillary or terminal, panicled, racemose, or corymbose.

XXIV. MELI'COPE (from μελι, *meli*, honey, and κοπη, *kope*, a division; in allusion to the 4 didymous honey-glands at the base of the ovaries). Forst. gen. no. 28. D. C. prod. 1. p. 723. Andr. Juss. in mem. mus. 12. p. 485. Entóganum, Banks, Gært.

Lin. syst. *Octándria*, *Monogýnia*. Calyx 4-parted, permanent. Petals 4, spreading, unguiculate. Stamens 8, shorter than the petals; filaments awl-shaped; anthers rather heart-shaped. Ovaries 4, ovate, girded at the base by 4 large, didymous glands. Styles 4, connected together, terminated by a thickish, tetragonal stigma. Fruit of 4 1-seeded carpels.—A shrub with opposite, ternate leaves, full of pellucid dots.

1 M. ternà'ta (Forst. gen. no. 28. Lam. ill. t. 245.). ♄. G. Native of New Zealand. Entóganum lævigàtum, Gært. fruct. 1. p. 331. t. 68. Flowers white.

Ternate-leaved Melicope. Clt. 1822. Shrub 6 feet.

Cult. This shrub will grow freely in a mixture of loam and peat; and young cuttings will root, if planted in a pot of sand, with a hand-glass placed over them.

XXV. EVO'DIA (from εvοδια, *evodia*, a sweet smell). Forst. gen. t. 7. H. B. et Kunth, nov. gen. amer. 6. p. 1 and 6 in a note. Andr. Juss. mem. mus. 12. p. 485. t. 22. no. 28.

Lin. syst. *Tetrándria*, *Monogýnia*. Calyx 4-parted, permanent. Petals 4, shorter than the sepals; filaments awl-shaped; anthers heart-shaped, oscillatory. Ovaries 4, smooth, surrounded at the base by a cup-shaped, 4-lobed disk. Styles 4, connected together, short, terminated by a 4-lobed stigma. Fruit of 4 capsular, 2-valved, 1-seeded carpels, but usually fewer than 4 from abortion.—A shrub with a grateful smell. Leaves opposite, sometimes simple, sometimes trifoliate on the same branch, full of pellucid dots. Flowers minute, white ? disposed in oblong, axillary panicles; pedicels furnished with bracteas. Petals valvate in the bud.

1 E. horte'nsis (Forst. gen. p. 14. t. 7.) leaves simple or trifoliate; leaflets lanceolate, pubescent as well as the branches; panicles longer than the petioles and leaves. ♄. G. Native of the Friendly Islands and the New Hebrides. Fagàra Evòdia, Lin. fil. suppl. 125.

Garden Evodia. Shrub 6 feet.

2 E. drupa'cea (Lab. nov. cal. p. 73. t. 75.) leaflets 3, sessile, obovate-oblong, smooth; drupe 4-seeded; corymbs axillary, dichotomous. ♄. G. Native of New Caledonia. Calyx 4-toothed. Petals 4.

Drupaceous Evodia. Shrub 6 feet.

Cult. These shrubs are worth cultivating for their grateful scent. They will thrive well in a mixture of loam, peat, and sand; and young cuttings will strike root if planted in a pot of sand, with a hand-glass placed over them, in heat.

XXVI. ESENBE'CKIA (in honour of Nees Von Esenbeck, Professor of Botany at Bonn). H. B. et Kunth, nov. gen. amer. 7. p. 246. t. 655. Andr. Juss. in mem. mus. 12. p. 486.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx 5-parted, permanent. Petals 5, spreading, inserted under the disk. Stamens 5, inserted with the petals, shorter, and alternating with them; filaments awl-shaped, smooth; anthers heart-shaped. Ovary sessile, tubercled, 5-lobed, 5-celled, surrounded by a fleshy, cup-shaped disk at the insertion of the stamens; each cell containing 2 ovulæ, only one of which comes to perfection. Styles 5, connected together, rising from between the lobes of the ovary, terminated by a somewhat capitate stigma.—Trees with alternate, simple, or ternate, quite entire leaves, full of pellucid dots. Racemes axillary and terminal, compound; peduncles and pedicels furnished with bracteas. Flowers full of glandular dots. Petals imbricate in the bud.

1 E. pilocarpoìdes (H. B. et Kunth, l. c.) leaves simple, oblong-lanceolate, acute; petioles margined; racemes compound, pubescent; petals roundish, full of glandular dots; ovary tubercled. ♄. S. Native of New Andalusia. Pilocárpus Humbóldtii, Spreng. syst. app. 126.

Pilocarpus-like Esenbeckia. Tree 60 feet.

2 E. febri'fuga (St. Hil. pl. usu. bras. t. 4. fl. bras. 1. p. 79. under *Evòdia*,) stem arboreous; leaves trifoliate; leaflets lanceolate-elliptic, rather acuminated; panicle terminal, pubescent; flowers 5-petalled; ovary simple, warted. ♄. S. Native of Brazil, in the province of Minas Geraes, where it is called *Tres Folhas vermelhas* and *Larangeira do Mato*. The bark is febrifugal, and answers as well as Peruvian bark.

Febrifugal Esenbeckia. Fl. Feb. Tree 40 feet.

Cult. The species will grow well in a mixture of sandy loam and peat; and cuttings will strike root if planted in a pot of sand, placed under a hand-glass, in heat.

XXVII. METRODO'REA (in memory of Metrodoro Sabino, who was the first, according to Pliny, to illustrate plants by figures). St. Hil. fl. bras. 1. p. 81. t. 16. Andr. Juss. in mem. mus. 12. p. 487.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx 5-cleft. Petals 5, much longer than the calyx, spreading, inserted beneath the disk. Stamens 5, inserted in the disk, very short; filaments awl-shaped, reflexed; anthers heart-shaped. Ovary buried in the disk, and confused in its substance, tubercled, 5-lobed, 5-celled, each cell containing 2 ovulæ. Style rising from between the lobes of the ovary, very short, dilated at the apex into a blunt stigma.—A shrub, with simple, rarely bifoliate, opposite, entire leaves, full of pellucid dots, with appendages at the base of the petioles. Panicles terminal or lateral; partial peduncles and pedicels furnished with bracteas. Flowers small, full of glandular dots, dark-purple. Edges of petals bent inwards.

1 M. nìgra (St. Hil. l. c.) ♄. S. Native of Brazil, in the province of Rio Janeiro. Leaves repand, tapering to both ends.

Black-flowered Metrodorea. Shrub 6 feet.

Cult. See last genus for cultivation and propagation.

XXVIII. PILOCA'RPUS (from πιλος, *pilos*, a cap, and καρπος, *karpos*, a fruit; shape of fruit). Vahl, eclog. 1. p. 29. St. Hill. bull. philom. 1823. p. 130. Nees et Mart. nov. act. bonn. xi. p. 176. t. 19. f. 1. D. C. prod. 1. p. 728. Andr. Juss. in mem. mus. 12. p. 488. t. 22. no. 29.

Lin. syst. *Pentándria*, *Monogýnia*. Calyx small, 5-toothed. Petals 5, broadest at the base, reflexed, inserted round the base of the disk. Stamens 5, inserted a little higher up than the

petals, and longer; filaments awl-shaped, reflexed. Anthers roundish. Ovaries 5, minute, connected, smooth. Styles 5, rising from beneath the top of the ovaries, connected at the top into a 5-lobed broader stigma. Fruit of 5 small 1-seeded carpels, immersed in the base of the gynophore, and has the appearance of a single ovary; but there are sometimes fewer than 5 from abortion. Albumen wanting. Cotyledons thick, with a short radicle.—Shrubs of humble growth, with alternate or opposite, simple, bi or trifoliate leaves. Racemes terminal, or at last lateral; pedicels spreading, furnished with bracteas. Flowers greenish or purplish, full of glandular dots. Petals valvate in the bud.

1 P. racemòsa (Vahl. eclog. 1. p. 29. t. 10.) smooth; leaves crowded, elliptical, rounded at the apex; flowers disposed in a terminal raceme. ♄. S. Native of the island of Montserrat, on the mountains.—Plum. ed. Burm. p. 119. t. 127. Branches pendulous. Flowers greenish.

Racemose-flowered Pilocarpus. Shrub 6 feet.

2 P. spica'ta (St. Hil. in bull. philom. 1823. p. 131. pl. rem. bras. p. 146. t. 16.) smooth; leaves oblong-lanceolate, or elliptical-lanceolate, bluntly acuminated; flowers spiked, somewhat approximate, on very short pedicels. ♄. S. Native of Brazil, at Cabo Frio in woods. P. pariflòrus, Nees et Mart. in nov. act. bonn. xi. p. 177. t. 30. Flowers small, pale.

Spiked-flowered Pilocarpus. Shrub 4 feet.

3 P. pauciflòra (St. Hil. bull. philom. 1823. p. 131. pl. rem. bras. p. 147. fl. bras. 1. p. 83. t. 17.) leaves lanceolate, obtuse, acuminated; petioles thickened, jointed; racemes few-flowered; rachis, pedicels, and bracteas puberulous. ♄. S. Native of Brazil, in the province of St. Catharine. St. Hil. pl. rem. bras. 1. p. 147. Flowers purplish.

Few-flowered Pilocarpus. Shrub 4 feet.

Cult. See *Esenbéckia* for cultivation and propagation.

XXIX. HO'RTIA (in honour of the Count de Horta, a Portuguese nobleman). Vand. in Rœm. script. bras. 188. D. C. prod. 1. p. 732. St. Hil. pl. usu. bras. p. 17. Andr. Juss. in mem. mus. 12. p. 489. t. 22. no. 30. St. Hil. fl. bras. 1. p. 80.

Lin. syst. *Pentándria, Monogýnia.* Calyx cup-shaped, bluntly 5-toothed, permanent. Petals 5, bearded above the base on the inside, uncinately acuminated at the apex, and reflexed, inserted in the disk. Stamens 5, inserted above the petals, and scarcely longer; filaments erect, covered with glandular tubercles; anthers linear-ovate, adnate. Ovary smooth, pentagonal, 5-celled, seated on the disk, which is broader, depressed, and glandular. Style conical, thickest at the apex, terminated by a coloured 5-furrowed stigma. Capsule 5-4-2-celled; cells 1-2-seeded. Embryo slender, straight, in a fleshy albumen, with large, obovate cotyledons, and a short superior radicle.—A small shrub, having the appearance of *Dáphne Laurèola*, with large, alternate, simple leaves, full of pellucid dots, as well as the petals. Branches terminal, corymbosely many-flowered; peduncles thick, and are, as well as the pedicels, furnished with bracteas. Flowers cymose, terminal, rose-coloured. Petals convolute in the bud.

1 H. Brasilia'na (Vand. l. c.) ♄. S. Native of Brazil, where it is commonly called *Quina*. The bark is bitter and astringent, and is used for the same purposes as Peruvian bark.

Brazilian Hortia. Shrub 2 to 4 feet.

Cult. See *Esenbéckia* for cultivation and propagation.

XXX. CHOI'SYA (in honour of M. Choisy, a Genevese botanist, author of several papers in De Candolle's Prodromus). H. B. et Kunth, nov. gen. amer. 6. p. 4. t. 513. D. C. prod. 1. p. 724. Andr. Juss. in mem. mus. 12. p. 490.—Plénckia, Moc. et Sesse, fl. mex. icon. ined. but not of Rafin.

Lin. syst. *Decándria, Monogýnia.* Calyx of 5 deciduous sepals. Petals 5, somewhat unguiculate. Stamens 10, shorter than the petals; filaments awl-shaped, the 5 shortest opposite the petals; anthers heart-shaped, blunt. Ovaries 5, connected, pubescent, inserted in the gynophore, each containing 2 ovulæ. Styles 5, connected, hispid, shorter than the stamens, terminated by a 5-lobed capitate stigma.—A shrub, with opposite, ternate, stalked leaves, full of pellucid dots; petioles channelled beneath. Peduncles axillary at the tops of the branches, simple, trifid, or somewhat umbellately few-flowered, bearing large deciduous bracteas at the base, and at the divisions under the pedicels. Corolla white, and is, as well as the calyx, full of glandular dots.

1 C. terna'ta (H. B. et Kunth, l. c. t. 513.) ♄. S. Native of Mexico. In Kunth's specimen, the ovaries are truly connected, but in that of Andr. Juss. they are partly distinct.

Ternate-leaved Choisya. Clt. 1825. Shrub 6 feet.

Cult. This beautiful shrub will grow freely in a mixture of loam, sand, and peat; and rather ripened cuttings will strike root if planted thinly in a pot of sand under a hand-glass, in heat.

Tribe VI.

CUSPARIE'Æ (plants agreeing with *Cuspària* in important characters). D. C. in mem. mus. 9. p. 141.—Fraxinéllæ, Nees et Mart. in nov. act. bonn. vol. xi. Andr. Juss. mem. mus. 12. p. 490. Flowers regular or usually anomalous. Petals 5, free, but usually connected into a labiate, campanulate, or funnel-shaped corolla. In the polypetalous flowers the stamens are alternate with the petals, and free; in the monopetalous flowers the filaments are free, but usually adhering to the tube of the corolla, sometimes all bearing anthers, sometimes 2-5 of which are barren. Disk urceolar, girding the ovaries at the base. Ovaries equal in number to the petals, distinct, rarely connected in one, each containing 2 ovulæ. Styles connected at the top or middle, or in one. Seeds with a thin covering. Embryo destitute of albumen, with large, short, or usually corrugated cotyledons, the outer one wrapped round the inner one, bearing 2 auricles on each side, and covering the radicle.—Trees and shrubs, rarely herbs. Leaves alternate, rarely nearly opposite, simple, but usually trifoliate; leaflets lanceolate and obtuse, quite entire. Flowers disposed in terminal or axillary racemes. Diverse parts frequently bitter.

XXXI. SPIRANTHE'RA (from σπειρα, *speira*, a spire, and ανθηρα, *anthera*, an anther; anthers spirally twisted). St. Hil. bull. philom. 1823. p. 130. pl. rem. bras. 1. p. 148. t. 17. D. C. prod. 1. p. 728. Andr. Juss. in mem. mus. 12. p. 491. t. 23. no. 32.—Terpnánthus, Nees et Mart. nov. act. bonn. xi. p. 152. and 177. t. 19. f. K.

Lin. syst. *Pentándria, Monogýnia.* Calyx short, 5-cleft. Petals 5, very long, free, linear, somewhat falcate, rather unequal. Stamens 5, a little shorter than the petals, free; filaments filiform, tubercled; anthers linear, at length becoming spirally revolute. Ovaries 5, villous, connected at the base, and stipitate, girded by the bell-shaped disk. Styles 5, rising from the inner angles of the ovaries, joined in one, longer than the petals, hispid at the base, terminated by a 5-lobed capitate stigma. Fruit of 5, or fewer carpels, connected at the base.—A small shrub, with alternate, stalked, ternate, exstipulate leaves. Peduncles axillary at the tops of the branches, naked below, but trifid and 3-flowered at the top, or terminal corymbose; pedicels furnished with 1 or 3 bracteas. Flowers shewy, white, with a tinge of rose-colour, very sweet-scented.

1 S. odorati'ssima (St. Hil. l. c.) ♄. S. Native of Brazil. Terpnánthus Jasminodòrus, Nees et Mart. in act. bonn. xi. p.

178. t. 31. The flowers have the scent of those of *Jasmìnum officinàle.*

Very-sweet-scented Spiranthera. Clt. 1823. Shrub 3 or 4 ft. *Cult.* See *Choísya* for cultivation and propagation.

XXXII. GALI'PEA (the name of *G. trifoliàta* in Guiana). Aubl. guian. 2. p. 662. St. Hil. bull. philom. 1823. p. 131. D. C. prod. 1. p. 730. Andr. Juss. in mem. mus. 12. p. 493. t. 23. no. 34.—Galìpea and Cuspària, D. C. mem. mus. 9. p. 142 and 148.—Cuspària, Humb.—Bonplándia, Willd. but not of Cav.—Angostùra and Rapùtia, Rœm. et Schult.—Conchocárpus, Mik.—Obentònia, Vel.—Arùba spec, Nees et Mart.—Lasiostèmon, Nees et Mart.—Ràvia, Nees et Mart.

Lin. syst. *Tri-Pentándria, Pentagýnia.* Calyx short, cup-shaped, 5-toothed or 5-cleft. Petals 5, rather unequal, connected at the base into a half monopetalous, somewhat campanulate corolla, with a short, usually pentagonal tube, and a spreading 5-cleft limb. Filaments adhering to the tube of the corolla, and longer than it (nevertheless enclosed), usually flattened and downy, sometimes 5, rarely 6-8, 2 or 4 of which are sterile, sometimes 5, all fertile; anthers oblong-heart-shaped, rarely appendiculate at the base, sometimes revolute after flowering. Ovaries 5, joined in one, or only at the base, surrounded by the cup-shaped disk, smooth or villous. Styles 5, rising from the tops of the ovaries, sometimes distinct, or only partly connected at the base, but usually joined together in one, terminated by a single blunt stigma. Fruit only of 1 or 2 carpels from abortion. —Trees or shrubs, with alternate, simple, ternate or quinate leaves, full of pellucid dots. Racemes axillary or terminal, simple or compound; peduncles and pedicels furnished with bracteas. Flowers greenish, white, or flesh-coloured.

* *Leaves compound.*

1 G. trifolia'ta (Aubl. guian. 2. p. 662. t. 269.) leaves trifoliate, smooth; flowers corymbose; peduncles shorter than the leaves; stamens 4, 2 of which are sterile. ♄. S. Native of Guiana, on the banks of the river Orapu. Sciùris corymbòsa, Spreng. syst. 1. p. 38. Flowers small, greenish. It is called *Inga* by the inhabitants of Guiana.

Three-leaved Galipea. Fl. Sept. Clt. 1823. Shrub 6 feet.

2 G. Ossa'na (D. C. mem. mus. 9. p. 149. t. 10.) leaves trifoliate, smooth; flowers panicled; peduncles longer than the leaves; calyx 5-parted; sterile stamens 5, fertile 2. ♄. S. Native of Cuba, about the Havannah. Flowers small, greenish.

De la Ossa's Galipea. Shrub 6 feet.

3 G. lasioste'mon (St. Hil. mss.) leaves trifoliate, full of glandular dots, young ones, petioles, and branches pubescent; racemes almost terminal, erect, pubescent; petals villous on the inside, and pubescent on the outside, as well as the calyx; stamens fringed, villous, 3 fertile, and 2 sterile. ♄. S. Native of Brazil, in woods at Ilheos. Lasiostèmum sylvéstre, Nees et Mart. in nov. act. bonn. xi. p. 171. t. 19. Flowers white.

Hairy-stamened Galipea. Shrub.

4 G. Cuspa'ria (St. Hil. mss.) leaves trifoliate; racemes stalked, almost terminal; calyx 5-toothed; sterile stamens 3. ♄. S. Native of South America. Cuspària febrífuga, Humb. tabl. geog. Bonplándia trifoliàta, Willd. act. acad. berl. 1802. p. 24. H. et B. pl. equin. 2. p. 59. t. 57. H. B. et Kunth, nov. gen. amer. 6. p. 8. Angostùra Cuspàre, Rœm. et Schult. syst. 4. p. 183. The Angostura bark of the shops is the produce of this tree. As an aromatic bitter it acts as a tonic and stimulant of the organs of digestion. It increases the appetite for food, removes flatulence and acidity, arising from dyspepsia, and is a very effectual remedy in diarrhœa, proceeding from weakness of the bowels, and in dysentery; and it possesses the singular advantage of not oppressing the stomach, as Peruvian bark is apt to do; but it does not cure intermittents. It is exhibited in powder, in doses of from 5 to 20 grains, either alone or with rhubarb, magnesia, or carbonate of lime. In infusion, a drachm to 4 ounces of water daily. In tincture, 1 or 2 drachms in dyspepsia. In watery extract, we are informed by Humboldt, that the Capuchins, who possess the missions of Carony, prepare with great care an extract of the bark, which they distribute to the convents of Catalonia. The natural history of this bark was long but imperfectly known. It is now fully established by the travels of Humboldt. The appearance of the bark varies according as it has been taken from larger or smaller branches. The tincture of which is of a deep yellow-colour, and becomes turbid and white on admixture with water. Dr. Rambach, of Hamburgh, first observed poisonous effects from some Angostura bark. The Austrian government on this account ordered all the Angostura bark in the kingdom to be destroyed, and interdicted its future importation; and other states have followed its example. This is in consequence of the Angostura bark of commerce being of different kinds, the most of which are spurious and poisonous. The false or fine Angostura bark, *Brùcea antidysentérica*, has been more recently analyzed by Pelletan and Caventou. They have discovered in it a new alkali, upon which its virulence depends, and to which they have given the name of Bruceæ. Its action on the living body is to produce tetanus, without affecting the intellectual faculties, in which respect it has a great analogy to strychnia, or nux vomica, but it is only about one-third of its strength. See *Brùcea.*

Cuspare or Angostura-bark. Tree 68 to 80 feet.

5 G. aroma'tica (Spreng. syst. app. p. 91.) leaves trifoliate, smooth; racemes spicate, axillary; sterile stamens 3, fertile 2. ♄. S. Native of Guiana, in woods of Orapu. Rapùtia aromática, Aubl. guian. 2. p. 670. t. 272. Sciùris aromàtica, Vahl. in Willd. spec. 1. p. 153. Flowers greenish. Bark of the trunk aromatic.

Aromatic-barked Galipea. Fl. Aug. Shrub 3 feet.

6 G. heterophy'lla (St. Hil. bull. philom. 1823. p. 131. pl. rem. bras. 131. t. 12.) leaves 3-4-5-foliate, on long petioles; leaflets lanceolate, rather pubescent on the middle nerve; racemes supra-axillary, on long peduncles; sterile stamens 2. ♄. S. Native of Brazil, in the province of Rio Janeiro.

Variable-leaved Galipea. Shrub.

* * *Leaves simple.*

7 G. penta'gyna (St. Hil. pl. rem. bras. p. 131. t. 11. A.) leaves long-lanceolate, very acute, quite smooth; racemes compound at the tops of the branches, axillary, or somewhat extra-axillary; peduncles flattened; sterile stamens 3; styles 5, quite distinct. ♄. S. Native of Brazil, in the province of Rio Janeiro.

Five-styled Galipea. Shrub.

8 G. resinòsa (St. Hil. pl. rem. bras. 1. p. 134.) leaves oblong, tapering to both ends, shining; glands on petioles very prominent, rough; corymbs terminal, stalked; corolla somewhat bilabiate; stamens 5, only 2 of which are fertile. ♄. S. Native of Brazil, in the province of Minas Geraes, and on the road to Felisbert. Ràvia resinòsa, Nees et Mart. in act. bonn. xi. p. 169. t. 19. f. E. and t. 23. Flowers white. Corymbs capitate. Shrub beset with resinous dots.

Resinous Galipea. Fl. Jan. Shrub 6 feet.

9 G. penta'ndra (St. Hil. pl. rem. bras. 1. p. 134. t. 13.) leaves lanceolate, acuminated, obtuse, but acute at the base, smooth; racemes axillary, simple, few-flowered; pedicels each furnished with 3 bracteas; stamens 5, all fertile. ♄. S. Native of Brazil, in the province of St. Paul.

Five-anthered Galipea. Shrub.

10 G. Fontanesia'na (St. Hil. pl. rem. bras. 1. p. 134. t. 14. B.) leaves lanceolate-oblong, acutish, quite smooth, very acute at the base; petioles smooth; racemes terminal, or somewhat extra-axillary, hardly branched at the base; calyx cup-shaped, smooth; sterile stamens 3; nectary 5-toothed. ♄. S. Native of Brazil, in the province of Rio Janeiro. Ràvia racemòsa, Nees et Mart. in nov. act. bonn. xi. p. 169. t. 24. Flowers white.

Desfontaine's Galipea. Fl. Jan. Shrub 6 feet.

11 G. Candollea'na (St. Hil. pl. rem. bras. 1. p. 135. t. 14. C.) leaves lanceolate, acuminated, quite smooth; racemes somewhat extra-axillary, very short; flowers crowded; sterile stamens 3; nectary entire. ♄. S. Native of Brazil, in the province of Rio Janeiro. Flowers white.

De Candolle's Galipea. Fl. Oct. Shrub 6 feet.

12 G. macrophy'lla (St. Hil. pl. rem. bras. 1. p. 132.) leaves long, linear-elliptic, stalked, rounded at the base, dotted with black opaque glands beneath; trunk simple, very slender; racemes extra-axillary, compound, interrupted; stamens 7, 1 or 2 of which are only fertile. ♄. S. Native of Brazil, in woods on the tops of the granite mountains at Rio Janeiro, and in the provinces of the mines. Conchocárpus macrophýlla, Mikan. del. bras. 1. t. 2. Nees et Mart. in nov. act. bonn. xi. p. 160. t. 18. f. B. Rapùtia conchocárpus, Schult. mant. 1. p. 126. Calyx bearded on the inside. Corolla funnel-shaped, beset with rusty glands, with a bilabiate limb.

Long-leaved Galipea. Fl. Oct. Nov. Shrub 6 feet.

13 G. cuneifòlia (St. Hil. pl. rem. bras. 1. p. 132.) leaves on short stalks, broad-lanceolate, tapering much to the base, cuneated, full of minute pellucid dots; racemes axillary, elongated, interrupted, about the length of the leaves; stamens 5, only 2 of which are fertile. ♄. S. Native of Brazil, in woods at the river Peruaquacu, in the province of Bahia. Conchocárpus cuneifòlia, Nees et Mart. in nov. act. bonn. xi. p. 162. t. 21. Corolla small, regular, white.

Wedge-leaved Galipea. Shrub 3 to 6 feet.

14 G. Gaudichaudia'na (St. Hil. fl. bras. 1. p. 89.) leaves spatulate, oblong, rounded at the apex, cuspidate; pedicels pubescent; sterile stamens 3 or 4; nectary entire; ovaries smooth. ♄. S. Native of Brazil, in the province of Rio Janeiro. Flowers white.

Gaudichaud's Galipea. Shrub.

15 G. Martia'na (St. Hil. fl. bras. 1. p. 90.) leaves large, lanceolate, tapering to both ends, quite smooth; petioles very short, puberulous; racemes terminal, simple, pubescent, as well as the campanulate, cup-formed calyx; sterile stamens 3; nectary entire. ♄. S. Native of Brazil, in the province of Rio Janeiro.

Martius's Galipea. Shrub 6 feet.

16 G.? e'legans (St. Hil. fl. bras. 1. p. 90.) leaves long, lanceolate-linear, acute at the base and apex, quite smooth; flowers racemose; axis triquetrous, pubescent. ♄. S. Native of Brazil, in the province of Rio Janeiro.

Elegant Galipea. Fl. Nov. Shrub 2 to 3 feet.

Cult. See *Choisya* for cultivation and propagation.

XXXIII. ALMEI'DEA (in honour of John Rodriguez Pereira de Almeida, who was of great assistance to St. Hilaire while on his travels in Brazil). St. Hil. bull. philom. 1823. p. 129. D. C. prod. 1. p. 729. Andr. Juss. in mem. mus. 12. p. 492. t. 23. no. 33. Arùba, Nees et Mart. in nov. act. bonn. xi. p. 152 and 172. t. 19. f. H. but not of Aubl. according to St. Hil.

Lin. syst. *Pentándria, Monogýnia.* Calyx short, 5-parted or 5-toothed. Petals 5, distinct, much longer than the calyx, equal, spatulate. Filaments 5, shorter than the petals, free, flattened, densely bearded above the middle, all bearing anthers; anthers linear, heart-shaped. Ovaries 5, girded beneath by the cup-shaped disk, connected together at the base, smooth. Styles 5, rising from the tops of the ovaries, joined in one, smooth, terminated by a single, capitate, 5-lobed stigma. Fruit of 1-2 1-2-seeded carpels.—Trees or shrubs, with alternate (but the upper ones are sometimes opposite), simple, quite entire, stalked, exstipulate leaves; petioles knotted above. Racemes terminal, simple, and naked beneath, but divided at the apex into compound thyrse-like panicles; peduncles and pedicels furnished with bracteas. Flowers white, lilac, red, and blue.

1 A. lila'cina (St. Hil. bull. philom. 1823. p. 129. pl. rem. bras. p. 144. t. 15. fl. bras. 1. p. 86.) leaves lanceolate, acute at the base; panicles pyramidal; peduncles puberulous; petals blunt. ♄. S. Native of Brazil, in the province of Rio Janeiro. Flowers lilac.

Lilac-flowered Almeidea. Shrub 8 feet.

2 A. ru'bra (St. Hil. l. c. pl. rem. bras. p. 144. fl. bras. 1. p. 86. t. 18.) leaves lanceolate, acute at the base; flowers racemose; racemes compound; peduncles smooth; petals very blunt. ♄. S. Native of Brazil, near Rio Janeiro. Flowers red.

Red-flowered Almeidea. Tree 12 feet.

3 A. longifòlia (St. Hil. pl. rem. bras. 1. p. 145. fl. bras. 1. p. 86.) leaves large, lanceolate-oblong, obtuse at the base, acute at the apex; flowers racemose, compound; peduncles pubescent; pedicels smooth; petals obtuse. ♄. S. Native of Brazil, in the province of Rio Janeiro. Flowers red.

Long-leaved Almeidea. Tree.

4 A. myriaca'ntha (Nees in Schlecht. Linnæa. 5. p. 56.) leaves scattered, elliptical-lanceolate, acuminate, on short stalks, veiny, and wrinkled; racemes axillary, simple, 5-10-flowered; veins of leaves scrobiculate in the axils; stamens 5, connected to the tube of the corolla; ovary clothed with stellate hairs. ♄. S. Native of Brazil, in the island of St. Catharine. Flowers white, and very fragrant.

Thousand-spined Almeidea. Tree 20 feet.

5 A. cæru'lea (St. Hil. mss.) leaves oblong, tapering to the base, obtuse at the apex, sometimes emarginate; racemes terminal; peduncles smooth; petals obtuse. ♄. S. Native of Brazil, in woods at the river Ilheos. Arùba cærùlea, Nees et Mart. nov. act. bonn. xi. p. 174. t. 27. Flowers blue.

Blue-flowered Almeidea. Tree 10 feet.

6 A. a'lba (St. Hil. mss.) leaves obovately wedge-shaped, with a blunt point; racemes terminal, bifid, secund; peduncles naked; petals obtuse. ♄. S. Native of Brazil, on the road to Felisbert. Arùba álba, Nees et Mart. in nov. act. bonn. xi. p. 175. t. 28. Flowers white.

White-flowered Almeidea. Fl. Dec. Shrub 6 feet.

7 A. acumina'ta (St. Hil. mss.) leaves oblong-lanceolate, acute at both ends; flowers terminal, racemosely panicled; peduncles pubescent; petals obtuse. ♄. S. Native of Brazil, in the province of the Mines, in woods. Flowers lilac.

Acuminate-leaved Almeidea. Fl. April. Tree 10 to 20 feet.

Cult. See *Choisya* for cultivation and propagation.

XXXIV. DIGLO'TTIS (from δις, *dis*, twice, and γλωττα, *glotta*, a tongue; the anthers 2, ending each in a tongue-shaped ligula). Nees et Mart. in nov. act. bonn. xi. p. 170. t. 19. f. F. D. C. prod. 1. p. 732. Andr. Juss. in mem. mus. 12. p. 494.

Lin. syst. *Diándria, Monogýnia.* Calyx 5-cleft. Petals 5, longer, about equal, joined together from the base to the middle into a monopetalous corolla. Filaments 5, shorter than the tube of the corolla, and adhering to its sides, flattened, bearded above, 3 sterile, and 2 bearing anthers; anthers heart-shaped, drawn out at the apex into an acute bearded ligula. Ovaries 5, surrounded at the base by the cup-shaped disk. Styles 5, con-

nected in one, very short, terminated by a single blunt stigma. Fruit of 5 1-seeded carpels.—A shrub, with alternate, long, ovate-lanceolate, quite entire leaves, full of pellucid dots. Flowers short, almost sessile, bracteated, disposed in a somewhat racemose panicle. Petioles inflated above.

1 D. obova'ta (Nees et Mart. l. c. t. 25.) ♄. S. Native of Brazil, in woods at the river Xipoto. Leaves obovate-oblong, rounded at the apex. Calyx pubescent. Petals acute, 3 lines long, white.

Obovate-leaved Diglottis. Fl. Dec. Shrub 5 feet.

Cult. See *Choísya* for cultivation and propagation.

XXXV. ERYTHROCHI'TON (from ερυθρος, *erythros*, red, and χιτων, *chiton*, an outer coat; in allusion to the calyx being red). Nees et Mart. in nov. act. bonn. xi. p. 165. t. 18. f. D. D. C. prod. 1. p. 732. Andr. Juss. in mem. mus. 12. p. 495.

Lin. syst. *Pentándria, Monogýnia.* Calyx large, tubular; tube compressed, 5-ribbed; limb of 5 segments, connected into 2 nearly equal lips, sometimes both entire, sometimes the lower one is trifid. Petals 5, longer than the calyx, connected into a half monopetalous funnel-shaped corolla, with a 5-cleft limb. Filaments 5, shorter than the tube of the corolla, and adhering to its sides, as well as being connected together, all bearing anthers; anthers lanceolate. Ovaries 5, surrounded by a longer pitcher-shaped glandular disk. Styles 5, connected in one, about the length of the tube of the corolla, terminated by a single, obtuse, 5-furrowed stigma. Fruit of 5 1-seeded carpels.—A small tree, with alternate, simple, stalked, lanceolate, very long, quite entire, smooth leaves. Axillary branches almost leafless, bearing the flowers at their ends, having the appearance of very long peduncles. Flowers large, in the axillæ of the bractea-like leaves, 2-4 or more in a cluster, on short pedicels, which are jointed at the base, each furnished with 2 bracteas. Calyx red. Corolla white.

1 E. Brasilie'nsis (Nees et Mart. l. c. p. 166. t. 22.) ♄. S. Native of Brazil, at the fort of St. John the Baptist, in the province of the Mines.

Brazilian Erythrochiton. Tree 10 feet.

Cult. See *Choísya* for cultivation and propagation.

XXXVI. TICO'REA (probably the name of the tree in Guiana). Aubl. guian. 2. p. 689. D. C. in mem. mus. 9. p. 144. St. Hill. bull. philom. 1823. p. 132. D. C. prod. 1. p. 730. Andr. Juss. in mem. mus. 12. p. 495. t. 23. no. 35.—Ozophýllum, Schreb. gen. no. 1105. Sciùris, Nees et Mart. in nov. act. bonn. xi. p. 155. t. 18. A.

Lin. syst. *Pent-Heptándria, Monogýnia.* Calyx small, 5-cleft or 5-toothed. Petals 5, much longer than the calyx, linear, connected together into a half-monopetalous, funnel-shaped corolla, with a 5-cleft, equal or unequal limb. Filaments flattened, adhering to the tube of the corolla, sometimes 5-7 in number, rarely 8, 3 or 6 of which are sterile, the rest fertile; anthers adnate. Ovaries 5, surrounded by a cup-shaped disk, smooth, usually connected together. Styles 5, rising from the tops of the ovaries, connected together in one, about equal in length to the tube of the corolla, terminated by a simple, 5-lobed stigma. Fruit of 5, connected, 1-seeded carpels.—Sweet-scented trees or shrubs, with alternate, simple, but usually ternate leaves; petioles jointed; leaflets lanceolate, entire, full of pellucid dots. Terminal branches almost leafless, floriferous, naked below, but divided at the apex into corymbs or panicles, or compound racemes; pedicels furnished with bracteas. Flowers white or cream-coloured, beset with pellucid or tubercled glands.

1 T. fœ'tida (Aubl. guian. 2. p. 689. t. 277.) leaflets 3, equal, almost sessile; corymb 6-7-flowered; flowers sessile along the branches; petals 6-times longer than the calyx. ♄. S. Native of Guiana in woods. Ozophýllum fœ'tidum, Martyn, in Mill. dict. Ozophýllum trifoliàtum, Willd. spec. 3. p. 585. Flowers white. The leaves, when bruised, emit a disagreeable smell, resembling that of *Stramònium*.

Fetid Ticorea. Fl. Feb. Shrub 10 feet.

2 T. pedicella'ta (D. C. mem. mus. 9. p. 145. t. 8.) leaflets 3, equal, almost sessile; corymbs 12-14-flowered; flowers stalked, disposed along the branches; capsule seated on a stipe. ♄. S. Native of French Guiana. Flowers white.

Stalked-flowered Ticorea. Shrub 10 feet.

3 T. longiflòra (D. C. mem. mus. 9. p. 145. t. 9.) leaflets 3, lateral ones on short stalks, middle one having a stalk 3-times longer than those of the lateral ones; corymb 15-20-flowered; flowers almost sessile, disposed along the branches; petals 10-times longer than the calyx or more. ♄. S. Native of French Guiana in woods. Flowers white. Fertile stamens 4.

Long-flowered Ticorea. Shrub 10 feet.

4 T. jasminiflòra (St. Hil. bull. philom. 1823. p. 132. pl. rem. bras. p. 141. t. 14. D.) leaflets 3, lanceolate, acuminated, tapering into the petiole; panicle rather loose; sterile stamens 3-6. ♄. S. Native of Brazil, near Rio Janeiro and in the province of Minas Geraes. Sciùrus multiflòra, Nees et Mart. nov. act. bonn. xi. p. 155. t. 18. f. A. Flowers white, sessile, along the branches of the panicle. The inhabitants of Brazil believe that the juice of the leaves boiled will cure frambesia.

Jasmine-flowered Ticorea. Fl. Sept. Tree 20 feet.

5 T. febri'fuga (St. Hil. pl. usu. bras. no. 16. D.) leaflets 3, lanceolate, acuminated, tapering into the petiole; panicle crowded; sterile stamens 3 or 6. ♄. S. Native of Brazil, in the province of Minas Geraes, where it is called *Quina* or *Folhas brancas*. The bark is very bitter and astringent, and would be a good substitute for Peruvian bark in intermittent fevers.

Febrifuge Ticorea. Tree 20 feet.

6 T. bractea'ta (St. Hil. mss. in D. C. prod. 1. p. 730.) leaflets 3, oblong, acuminated, tapering to the base; panicle somewhat spicate, many-flowered, glomerate, erect; calyx 5-cleft, with acuminated lobes; fertile stamens 2. ♄. S. Native of Brazil, in woods at Arassatiba. Sciùrus bracteàta, Nees et Mart. nov. act. bonn. 11. p. 156. t. 18. f. A. and t. 20. Bracteas under the branches of the panicle lanceolate, fringed. Flowers white.

Bracted Ticorea. Shrub 6 feet.

7 T. simplicifòlia (St. Hil. mss. in D. C. prod. 1. p. 730.) leaves simple, oblong-lanceolate, acuminated at both ends; racemes compound, many-flowered, erect; fertile stamens 2. ♄. S. Native of Brazil, in woods at the Fort of St. John the Baptist, in the province of Minas Geraes. Sciùrus simplicifòlia. Nees et Mart. nov. act. bonn. xi. p. 157. Flowers cream-coloured, pedicelled, with a short, linear-lanceolate bractea at the base of each pedicel.

Simple-leaved Ticorea. Shrub 10 feet.

Cult. A mixture of loam, sand, and peat will answer the species; and cuttings, taken from ripened wood, will root in a pot of sand, with a hand-glass placed over them, in heat.

XXXVII. MONNIE'RA (in honour of William le Monnier, once Professor of Botany in the Jardin du Roi, Paris. He published, in 1745, Observations upon the dangerous plants of the Pyrenees and Roussillon). Lin. gen. no. 850. Nees et Mart. nov. act. bonn. xi. p. 162. t. 18. f. C. D. C. prod. 1. p. 729. Andr. Juss. in mem. mus. 12. p. 496. t. 22. no. 31.

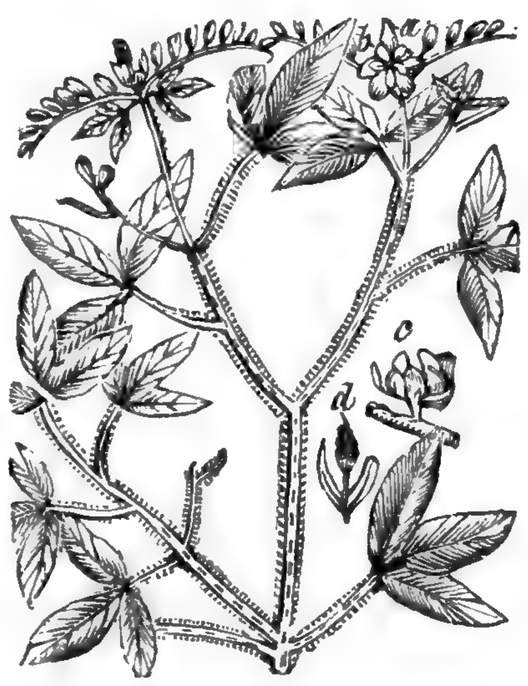
Lin. syst. *Diándria, Monogýnia.* Calyx 5-parted; segments very unequal, 2 of which are much longer than the corolla, and 3 much shorter, permanent. Petals 5, unequal, connected at the base into a half monopetalous corolla, with a curved

tube and a bilabiate limb, upper lip 1-lobed, lower one divided into 4-lobes. Filaments 5, adhering to the tube of the corolla and shorter than it, flattened, bearded in the middle, 3 sterile, 2 fertile; anthers adnate, oblong, heart-shaped. Ovaries 5, longer than the thickish hypogynous scales, which are bidentate at the apex, permanent and sessile, approximate, smooth, opposite the sterile stamens. Styles 5, rising from the tops of the ovaries, connected in one, terminated by a single, 5-lobed, capitate stigma. Fruit of 5 (but sometimes fewer from abortion) 1-seeded carpels. A villous herb, with opposite or alternate, stalked, ternate leaves, full of fine pellucid dots. Peduncles axillary, simple at the base, naked, but forked at the apex. Flowers small, white, on very short pedicels along the branches, secund.

1 M. trifòlia (Lin. spec. 986. Aubl. guian. 2. p. 730. t. 293. H. B. et Kunth, nov. gen. amer. 6. p. 9. Jaborándi, Marcg. bras. 36. with a figure. ⊙. S. Native of Guiana, Cayenne, and Brazil. Plant annual, naked at the base, but branched at the top.

Three-leaved Monniera. Fl. Ju. Jul. Clt. 1792. Pl. $\frac{1}{2}$ to 1 foot.

FIG. 124.



Cult. The seeds of this plant should be sown in a pot of light earth, placing it in a hot-bed, and when the plants are of sufficient size they should be planted into separate pots, and shaded until they have taken fresh root; after this they may be placed in the stove, where they will ripen their seed.

Tribe VII.

ZANTHO'XYLEÆ (plants agreeing with *Zanthóxylum* in important characters). Andr. Juss. in mem. mus. 12. p. 497. Flowers of separate sexes, regular. Calyx divided into 3, but usually 4-5. Petals equal in number, frequently longer, usually twisted in the bud, rarely wanting. Male flowers, with the stamens equal in number to the petals, rarely double that number, for the most part longer than them, inserted round the base of the gynophore. Female flowers with abortive stamens and a short style. Ovaries seated on the receptacle, equal in number to the petals or fewer, sometimes distinct or partly so, with 2 ovulæ in each. Styles equal in number to the ovaries, simple, sometimes free, sometimes joined, sometimes wanting. Stigma 2-5-lobed, or in the free styles simple. Fruit simple, baccate, or membranous, 2-5-celled, sometimes multiple. Seeds solitary or twin, pendulous, smooth, and shining. Albumen fleshy, with a superior radicle, and ovate, flat cotyledons.—Trees or shrubs, with alternate or opposite, simple, but more frequently abruptly or impari-pinnate, dotted or dotless leaves. Flowers axillary and terminal, variously disposed, male and female intermixed, sometimes on different branches, sometimes on different trees; pedicels bracteolate. Divers parts bitter and aromatic.

XXXVIII. DICTYOLO'MA (from δικτυον, *dictyon*, a net, and λωμα, *loma*, a fringe; in allusion to the seeds being expanded on the back into a netted wing). Andr. Juss. in mem. mus. 12. p. 499. t. 24. no. 36.

Lin. syst. *Monoècia, Pentándria.* Flowers of separate sexes. Calyx deeply 5-parted. Petals 5, longer. Male flowers, stamens 5, opposite the petals, about equal; filaments each rising from the back of a dense woolly scale, bearing 5 abortive, slender ovaries, shorter than the stamens. Female flowers bearing 5 productions like stamens, each terminated by a barren anther. Ovaries 5, joined in one, seated on a short gynophore, downy. Styles 5, connected into one, short, thick, terminated by a single 5-lobed stigma. Fruit of 5 distinct carpels, opening inwardly, 2-valved, 3-4-seeded. Seeds kidney-shaped, expanded on the back into an elegant netted wing. Embryo arched.—A little tree, with alternate, pinnate leaves; leaflets nearly opposite or alternate, unequal-sided, with glandular margins, without dots. Terminal branches bearing the flowers, dividing into a broad corymb; pedicels bracteate. Flowers downy-white, male and female intermixed.

1 D. Vandellia'na. ♄. S. Native of Brazil.

Vandelli's Dictyoloma. Tree 12 feet.

Cult. See *Ticòrea* for cultivation and propagation.

XXXIX. GALVE'ZIA (in honour of Joseph Galvez, minister of state under Charles III. of Spain). Ruiz et Pav. fl. per. but not of Dombey. Andr. Juss. in mem. mus. 12. p. 500. t. 25. no. 37.

Lin. syst. *Dioècia, Octándria.* Flowers of separate sexes. Calyx 4-parted. Petals 4, longer. Male flowers. Stamens 8, the 4 opposite the petals shortest; filaments awl-shaped, smooth, inserted round the base of the oblong gynophore. Ovaries 3-4, distinct, seated on the fleshy tetragonal receptacle. Styles 3-4, distinct at the base, but connected at the apex, terminated by a 4-lobed stigma. Drupes 4, or fewer from abortion, 1-seeded. Seeds egg-shaped. Embryo straight.—A tree with simple leaves, opposite, or 3 in a whorl, serrated, quite smooth, full of pellucid dots, with an aromatic smell. Peduncles axillary, trichotomously panicled, with 2 opposite bracteas at the divisions; pedicels bracteolate. Female flowers on distinct branches, and perhaps on distinct trees. Petals convolute in the bud.

1 G. puncta'ta (Ruiz et Pav. fl. per. 5 with a figure). ♄. G. Native of Chili, where it is called *Pitao.* Fruit fleshy, bitter.

Dotted Galvezia. Tree 20 feet.

Cult. See *Ticòrea* for cultivation and propagation.

XL. BRU'CEA (in honour of James Bruce, the celebrated traveller in Abyssinia). S. Mill. fasc. t. 25. Schreb. gen. 1508. Lher. stirp. 19. t. 10. Juss. gen. 373. Kunth, gen. tereb. 30. D. C. prod. 2. p. 88. Andr. Juss. in mem. mus. 12. p. 501.

Lin. syst. *Dioe'cia, Tetrándria.* Flowers of separate sexes. Calyx 4-parted. Petals 4, hardly equal the length of the calyx. Male flowers. Stamens 4, short, inserted round about a gland-like, central, 4-lobed body. Female flowers; stamens 4, sterile. Ovaries 4, seated on a 4-lobed receptacle, each terminated by a simple, acute, reflexed stigma. Drupes 4, 1-seeded.—Shrubs, with impari-pinnate leaves, with 6 pairs of opposite, entire, or serrated leaflets, without dots. Flowers small, purplish inside, disposed in interrupted glomerate spikes or racemes. Branches, peduncles, petioles, and nerves of leaves clothed with simple rufescent down. A fifth part is generally added to the flowers. Divers parts of the shrubs very bitter.

1 B. antidysente'rica (Mill. fasc. t. 25.) leaflets quite entire, clothed with rusty villi on the nerves beneath; racemes simple, spike-like. ♄. S. Native of Abyssinia. Woogi-noos, Bruce's trav. French ed. t. 43. Brùcea ferrugínea, Lher. stirp. t. 10. Drupe sometimes solitary, or perhaps connected together. Guers. in bull. philom. 3. no. 84. p. 182. This species is known in Abyssinia by the name of *Woodginoos.* The root is a specific in dysentery. It is a plain simple bitter, without any aromatic or resinous taste, leaving in the throat and palate something of roughness, resembling *Ipecacuanha.* The bark of this tree is sold under the name of Angostura bark. See *Galìpea Cuspària.*

Antidysenteric Brucea. Fl. May, June. Clt. 1775. Shrub 8 feet.

2 B. gra'cilis (D. C. prod. 2. p. 88.) leaflets serrated, downy on both surfaces; racemes simple, spike-like. ♄. S. Native of the East Indies. Ailántus gràcilis, Salisb. prod. 171. Stamens 5-6. Ovaries stiped.

Slender Brucea. Fl. May, June. Clt.? Shrub.

3 B. Sumatra'na (Roxb. fl. ind. 1. p. 469.) leaflets serrated, villous beneath; racemes usually compound; petals longer than the calyx. ♄. S. Native of Sumatra, Moluccas, China, and Cochin-china. Gònus amaríssimus, Lour. 658. B. Sumatrénsis, Spreng. pug. 2. p. 90.—Rumph. amb. 7. t. 15. Flowers dark-purple, usually hermaphrodite. From the sensible qualities of the green parts of this plant being somewhat fetid, and simply, though intensely, bitter, it promises to be as good an antidysenterical medicine as Bruce's Woodginoos. (Wall.)

Sumatra Brucea. Fl. May, June. Clt. 1822. Tree 20 ft.

4 B. Guinee'nsis; leaflets quite entire? and smooth; spikes panicled, branched; petals much longer than the calyx. ♄. S. Native of Sierra Leone, in the woods.

Guinea Brucea. Fl. Feb. May. Tree 14 feet.

Cult. These trees will thrive best in a loamy soil. Cuttings from ripened wood strike root freely in a pot of sand under a hand-glass, in a moderate heat.

XLI. BRUNE'LLIA (in honour of Gabriel Brunelli, professor of botany in the university of Bologna). Ruiz et Pav. fl. per. prod. p. 71. t. 12. H. et B. pl. equin. 1. p. 210. H. B. et Kunth, nov. gen. amer. 7. p. 42. D. C. prod. 2. p. 87. Andr. Juss. in mem. mus. 12. p. 501.

Lin. syst. *Dioe'cia, Octo-Decándria.* Flowers of separate sexes. Calyx 4-5-parted, clothed on the inside at the base, with a hairy depressed disk, which is 8-10-lobed. Petals wanting. Male flowers. Stamens 8-10, longer than the calyx, inserted in the sides of the disk, which bears the abortive ovaries. Female flowers. Stamens inserted in the disk, much shorter than the calyx; anthers barren. Ovaries equal in number with the segments of the calyx, distinct, hairy, each ending in a short acute style. Carpels distinct, opening lengthwise inwardly, each containing 1-2 seeds. Seeds egg-shaped or globose. Embryo straight.—Unarmed, rarely prickly trees. Leaves simple, ternate, or impari-pinnate, coriaceous, entire or crenated, without dots. Stipulas twin, small, caducous, petiolar. Flowers disposed in axillary or terminal corymbs, or panicles; pedicels furnished with bracteas. Parts usually clothed with rusty down. There are sometimes 7 segments to the calyx.

* *Leaves opposite, pinnate.*

1 B. aculea'ta (Ruiz et Pav. fl. per. syst. p. 127.) leaves abruptly-pinnate; leaflets quite entire; carpels smooth; branches prickly. ♄. S. Native of Peru, in groves. Stamens 10-14.

Prickly-branched Brunellia. Tree.

2 B. comocladifòlia (Humb. et Bonpl. pl. equin. 1. p. 211. t. 59.) leaves impari-pinnate, with 7 or 11 pairs of spiny-serrated leaflets; carpels 4, clothed with rufous down. ♄. S. Native of Peru, on the Andes, near Popayan. Stamens probably 8.

Comocladia-leaved Brunellia. Tree.

3 B. propi'nqua (H. B. et Kunth, nov. gen. amer. 7. p. 45.) leaves impari-pinnate; leaflets 3 or 4 pairs, oblong, rather obtuse, crenately-serrulated, clothed beneath with fine rufescent down; panicle branched, rusty. ♄. S. Native of South America. Stamens 12-14. Compare it with the following.

Allied Brunellia. Tree 20 feet.

4 B. ine'rmis (Ruiz et Pav. fl. per. prod. p. 71.) leaves impari-pinnate, and simple; leaflets serrated; carpels hispid. ♄. S. Native of Peru, in groves. Stamens 10-14. This is probably the same as *B. propinqua.*

Unarmed Brunellia. Tree.

* * *Leaves simple, 3 in a whorl.*

5 B. tomentòsa (Humb. et Bonpl. pl. equin. 1. p. 214. t. 60.) leaves oval-oblong, acute at both ends, serrated, reticulated with veins beneath; branches and carpels downy. ♄. S. Native of South America, near Almaguer, in cold places. Stamens 8-14.

Downy-branched Brunellia. Tree 20 feet.

6 B. ovalifòlia (Humb. et Bonpl. pl. equin. 1. p. 216. t. 61.) leaves roundish-oval, serrated, clothed beneath with very minute pubescence; heads of flowers axillary, stalked. ♄. S. Native of South America, on Mount Saraguru, near Loxa. Stamens 10.

Oval-leaved Brunellia. Tree 20 feet.

7 B. acuta'ngula (Humb. et Bonpl. pl. equin. 1. p. 216. t. 62.) leaves oval-lanceolate, covered with powdery-pubescence beneath; branches acutely triquetrous. ♄. S. Native of New Granada. Stamens 8-10.

Sharp-angled-stemmed Brunellia. Tree 20 feet.

N. B. There are several unpublished species of this genus from the Sandwich Islands.

Cult. See *Brùcea* for cultivation and propagation.

XLII. ZANTHO'XYLUM (from ξανθος, *xanthos*, yellow, and ξυλον, *xylon*, wood; the roots are yellow). H. B. et Kunth, nov. gen. amer. 6. p. 1. D. C. prod. 1. p. 725. Andr. Juss. in mem. mus. 12. p. 503. t. 25. no. 38.—Zanthóxylum et Fagàra, Lin. gen. no. 150. and 1109.—Xanthóxylum, Smith.—Aubértia, Bory.—Langsdórfia, Leandr. in akad. munch. 1819. p. 229.—Pohlàna, Nees et Mart. nov. act. bonn. xi. p. 185.—Ochróxylum, Schreb.—Pteròta, Adans.—Kampmánnia, Rafin.—Ampàcus, Rumph.—Evòdia, spec. D. C. prod. 1. p. 724.

Lin. syst. *Dioe'cia, Tri-Pentándria.* Flowers dioecious. Calyx short, 3-4-5-parted. Petals equal in number to the lobes of the calyx, but longer, very rarely wanting. Male flowers. Stamens equal in number with the petals, equal in length or longer than them, inserted around the base of a rudiment of a gynophore, bearing the rudiment of a simple or multiple pistil, which is shorter than the stamens. Female flowers. Stamens sometimes wanting, or very short, scale-like, and without anthers, or bearing abortive ones. Ovaries 5-1, sometimes equal in number to the petals, but usually fewer from abortion, seated on a subglobose, or subcylindrical torus, each containing 2 ovulæ, and with one style rising from the apex of each, free, or connected; the former with separate capitate stigmas; the latter crowned with a single lobed stigma. Capsules 1-5, sessile, or stalked, 2-valved, 1-2-seeded. Seeds globose, dark, shining. Embryo straight, but usually a little incurved.—Trees or shrubs, with the petioles, branches, and nerves, usually furnished with prickles. Leaves alternate and opposite, simple or ternate, but usually abruptly or impari-pinnate, and with the common petiole usually winged, for the most part full of pellucid dots. Flowers small, greenish, or whitish, axillary or terminal, fascicled, spiked, racemose, cymose, corymbose, or panicled, furnished with bracteas.

Sect. I. Zantho'xylum (see genus). Golden, Lin. Juss. et Schreb.—Xanthóxylum species, Nees et Mart.—Fagàra, Adans. but not of Lin. Calyx of 5 petal-like sepals, bearded at the apex. Petals wanting. Male flowers. Stamens equal in number to the petals, and alternating with them, inserted around the rudiment of a 5-lobed disk. Female flowers. Ovaries equal in number to the sepals, and opposite them, seated on a cylindrical torus, each furnished with a style, which are connected together

at the apex, ending in a clavate stigma. Sepals sometimes 6-9, according to Kunth, sometimes only 4.—Trees with impari-pinnate leaves.

1 Z. FRAXI'NEUM (Willd. spec. 4. p. 757.) leaves impari-pinnate, with 4 or 5 pairs of ovate, obsoletely-serrulated leaflets, which are equal at the base; petioles terete, unarmed; prickles stipular; corymbs axillary. ♄. H. Native of North America, from Canada to Virginia, and Kentucky, in woods near rivers. Z. ramiflòrum, Michx. fl. 2. p. 235. Z. clàva Hérculis var. Lin. spec. 1455. Lam. dict. 2. p. 38. Z. Americànum, Mill. dict. no. 2. Z. Caribæ'um, Gært. fruct. but not of Lam.—Duham. arb. 1. t. 97.—Catesb. carol. 1. t. 26. Sepals whitish; anthers red. The bark and capsules have a hot acrid taste, and are used for easing the tooth-ache; hence it is called *Tooch-ache-tree*. A tincture of them is also much commended for the cure of rheumatism.

Ash-like or Common Tooth-ache-tree. Fl. March, April. Clt. 1759. Tree 15 feet.

2 Z. MÌTE (Willd. enum. 1013.) unarmed; leaves impari-pinnate, pubescent beneath; flowers axillary. ♄. H. Native of North America. Sepals white; anthers red?

Mild Tooth-ache-tree. Fl. March, April. Clt. 1812. Tree 15 feet.

SECT. II. FAGA'RA (a name given to an aromatic plant by Avicennes). Jacq. Lin. Schreb. Nees et Mart.—Pteròta, P. Brown, Adans.—Fagàra species, Juss.—Xanthóxylum species, Nees et Mart. Calyx 4-parted. Petals and stamens 4. Ovaries 2 or 2-parted. Stigmas 2-lobed.

* *Flowers hermaphrodite.*

3 Z. PTERÒTA (H. B. et Kunth, nov. gen. amer. 6. p. 3.) prickly; leaves impari-pinnate; leaflets obovate, a little crenated; petioles with a narrow wing; prickles 2, stipular hooked. ♄. S. Native of Jamaica and Cuba. Fagàra Pteròta, Lin. amœn. 5. p. 391. Schìnus Fagàra, Lin. spec. ed. 1. p. 389. Fagàra lentiscifòlia, Willd. enum. 1. p. 166. Spikes axillary, shorter than the petioles. Flowers white.—Browne, jam. p. 146. t. 5. f. 1.—Sloan. jam. 2. p. 25. t. 168. f. 4.

Winged-petioled Tooth-ache-tree. Fl. Aug. Sept. Clt. 1768. Shrub 10 feet.

4 Z. CULANTRÌLO (H. B. et Kunth, nov. gen. amer. 6. p. 2.) unarmed; leaves trifoliate or impari-pinnate; leaflets oblong, somewhat emarginate, crenate; petioles obsoletely winged; peduncles axillary, branched, a little longer than the petioles. ♄. S. Native of South America, on the banks of the river Amazon, near Jaen-de-Bracamaros. Flowers white. *Culantrilo* is the vernacular name of the tree.

Culantrilo Tooth-ache-tree. Tree 24 feet.

5 Z. PRÆ'COX (St. Hil. fl. bras. 1. p. 76.) unarmed; leaves abruptly-pinnate, with lanceolate-elliptic, blunt, subretuse but acute at the base, almost entire, deciduous leaflets, which are pubescent beneath, full of pellucid dots; rachis hardly marginate; female flowers quadrifid, 4-petalled, disposed in racemose panicles; pistil solitary, rarely twin. ♄. S. Native of Brazil, in the province of Rio Janeiro, near Uba. Flowers greenish white. Ovary 1-2-valved.

Early Tooth-ache-tree. Fl. Oct. Tree 20 feet.

6 Z. HYEMA'LE (St. Hil. fl. usu. bras. t. 37. fl. bras. 1. p. 75.) armed, rather prickly, smooth; leaves impari-pinnate, with 3 or 6 pairs of obovate, blunt, crenate-serrated, nearly sessile leaflets, glandular on the margins; rachis hardly winged; flowers in racemose panicles, axillary, 4-petalled; style 1. ♄. S. Native of Brazil, in the provinces of St. Catharine and Rio Grande do Sul. Flowers white. The tree is called *Coentrilho* by the inhabitants, who pretend that the bark, reduced to a powder, is good against the ear-ache. The wood is excellent.

Winter Tooth-ache-tree. Tree.

7 Z. AFFI'NE (H. B. et Kunth, nov. gen. amer. 6. p. 3.) sparingly prickly; leaves impari-pinnate, with 7 or 9 oblong, blunt, smooth leaflets, which are crenate, and full of glandular dots on the edges; petioles hairy; spikes axillary, many-flowered. ♄. S. Native of Mexico, at Lake Cuiseo. Style 1? Flowers white?

Allied Tooth-ache-tree. Tree.

8 Z. PIPERÌTUM (D. C. prod. 1. p. 725.) prickly; leaves impari-pinnate; leaflets oblong, unequal at the base, crenate; petiole a little winged, jointed; prickles stipular. ♄. G. Native of Japan. Fagàra piperìta, Lin. spec. 172. Thunb. jap. 64? Flowers white, in terminal panicles. Ovary 1-2. Style 1. Seed 1.—Kœmpf. amœn. t. 893. The bark, leaves, and fruit of this shrub being aromatic are frequently used in soups instead of spice. The bruised leaves made into a cataplasm with meal of rice are laid upon the parts afflicted with rheumatism.

Pepper Tooth-ache-tree. Fl. Sept. Clt. 1773. Shrub 6 feet.

9 Z. PERROTE'TII (D. C. prod. 1. p. 726.) leaves impari-pinnate, with 7 or 9 pairs of sessile, elliptical-oblong, acuminated leaflets, which are toothed at the apex; petioles and branches unarmed; panicles subcorymbose. ♄. S. Native of French Guiana. Carpels at maturity twin or solitary from abortion. Flowers white? Petioles not margined.

Perrotet's Tooth-ache-tree. Tree.

10 Z. AVICE'NNÆ (D. C. prod. 1. p. 726.) prickly; leaves impari-pinnate; leaflets 9-13, lanceolate, smooth, almost entire, on short petioles; racemes panicled, shorter than the leaves. ♄. G. Native of China. Fagàra Avicénnæ, Lam. dict. 2. p. 445.—Lob. icon. 2. p. 133. f. 2. (fruct.) Flowers white?

Avicenna's Tooth-ache-tree. Clt. 1823. Shrub.

11 Z. BUDRU'NGA (D. C. prod. 1. p. 728.) armed with small incurved prickles; leaves abruptly or impari-pinnate, with 5 or 6 pairs of unequal, ovate-lanceolate, entire, acuminated, smooth leaflets; panicles terminal, crowded. ♄. S. Native of the East Indies, in Silhet, where it is called *Budrung* by the natives, who use the seeds medicinally, being of a warm spicy nature, with the fragrance of lemon-peel. Flowers white? Stamens much longer than the petals. Capsule single, drupaceous, about the size of a pea, the outer coat is marked with cells, filled with a fragrant balsam, containing a solitary shining seed, having 3 integuments.

Budrung Tooth-ache-tree. Fl. March, April. Clt. 1825. Tree 20 feet.

12 Z. RHE'TSA (D. C. prod. 1. p. 728.) armed with prickles; leaves abruptly pinnate, with 8 or 16 pairs of lanceolate, falcate, smooth, entire leaflets, all nearly equal in size; panicle terminal, frequently cross armed. ♄. S. Native of the East Indies, on the mountainous parts of the coast. Fagàra Rhétsa, Roxb. fl. ind. 1. p. 428. A large much-spreading tree. Flowers minute, yellow. Stamens shorter than the petals. Style thick, terminated by a tapering stigma. Capsule single, dry, 1-celled, 2-valved, about the size of a pea, containing a round, glossy, black seed. The unripe capsules are like small berries, they are gratefully aromatic, and taste like the skin of a fresh orange. The ripe seeds taste like black pepper, but weaker. The inner bark is also acrid, with a mixture of bitter. The tree is called in the Telinga language *Rhetsa-maun*. *Rhetsa* means a committee, or select number of men assembled to settle disputes, &c., and *maun* signifies trees of the largest size. Under the shade of this tree the hill people assemble to examine, agitate, and determine their matters of public concern, deliver discourses, &c.

Rhetsa-maun Tooth-ache-tree. Fl. Dec. Tree 50 feet.

13 Z. NI'TIDUM (D. C. prod. 1. p. 727.) branches, petioles,

and ribs armed with prickles; leaves impari-pinnate, with 2 or 3 pairs of oblong shining leaflets, which are remotely and glandularly crenated at the apex, rather long, and emarginate; racemes axillary. ♄. G. Native of China, about Canton, where it is called *Tcheum-tsew*. Fagàra nítida, Roxb. fl. ind. 1. p. 439. The flowers are 4-petalled as the other species of the Section, but the pistillum is 3 or 4-lobed, each lobe apparently ending in a 2-lobed stigma. Capsule single, 1-seeded.

Shining-leaved Tooth-ache-tree. Fl. Jan. Clt. 1823. Shrub 6 feet.

14 Z. Zeyla'nicum (D. C. prod. 1. p. 728.) capsule solitary, 2-celled, 1-seeded; the rest unknown. Lùnu Ankénda, Gært. fruct. 1. p. 334. t. 68. f. 9. Fagàra Zeylánica, Steud. nom. p. 331.

Ceylon Tooth-ache-tree. Shrub?

* * *Flowers dioecious.*

15 Z.? Tingoa'ssuiba (St. Hil. fl. bras. 1. p. 78.) unarmed, quite smooth; leaves impari-pinnate, with 2 pairs of obovate, obtuse, obsoletely-crenated, rather retuse, veiny, shining leaflets; calyx 4-parted; petals perhaps wanting. ♄. S. Native of Brazil, in the province of Rio Janeiro, at Cabo Frio, where it is called *Tingoassuiba*. The wood is yellow, and is used in various kinds of carpentering.

Tingoassuiba Tooth-ache-tree. Tree 50 feet.

16 Z. lu'cidum (St. Hil. fl. bras. 1. p. 92.) unarmed, quite smooth; leaves impari-pinnate, with 2-3 pairs of stalked, lanceolate, entire leaflets, which are obtuse and rather retuse at the apex, and acutish at the base; rachis wingless; panicles terminal; flowers of 4 petals. ♄. S. Native of Brazil, in the province of St. Paùl. Z. nítidum, St. Hil. fl. bras. 1. p. 77. Rudiment of ovary small.

Shining Tooth-ache-tree. Fl. Jan. Tree 20 feet?

Sect. III. Faga'ra (see last section). Lam. Swartz, Zanthóxylum, Nees et Mart. Flowers 3-petalled, triandrous. Ovaries 3, each terminated by a style.

17 Z. pimpinelloìdes (D. C. prod. 1. p. 726.) leaves impari-pinnate, with many pairs of roundish, acuminated, shining leaflets; petioles and ribs of leaves prickly; corymbs terminal. ♄. S. Native of St. Domingo.—Sloan. hist. 2. t. 174. f. 3-4? Fagàra pimpinelloìdes, Lam. ill. no. 1638. Calyx 5-cleft.

Pimpernel-like Tooth-ache-tree. Shrub 6 feet.

18 Z. terna'tum (Swartz, fl. ind. occ. 1. p. 570.) unarmed; leaves ternate; leaflets obovate, a little emarginate, shining, dotted beneath; racemes axillary, compound. ♄. S. Native of Dominique. Fagàra ternàta, Swartz, prod. 33. Flowers white.

Ternate-leaved Tooth-ache-tree. Shrub 6 feet.

19 Z. puncta'tum (West. st. cr. 236.) spiny; leaves trifoliate and pinnate, with oblong crenulated leaflets, dotted beneath. ♄. S. Native of Santa-Cruz. Flowers white.

Dotted-leaved Tooth-ache-tree. Shrub 6 feet.

20 Z. emargina'tum (Swartz, fl. ind. occ. 1. p. 572.) unarmed; leaves impari-pinnate, with 2 or 3 pairs of ovate, emarginate, veiny leaflets; racemes terminal. ♄. S. Native of Jamaica and Cuba, on the mountains. Fagàra emarginàta, Swartz, prod. 33.—Sloan. hist. 2. p. 24. t. 168. f. 4. Leaves sometimes abruptly pinnate. Branches inclined to the ground. Flowers white, resembling those of the elder-berry. Fruit round, the size of black pepper. The smoke of the wood in burning is odoriferous, and probably was the fine scent which Columbus found near the south shore of Cuba, on his discovery of that island.

Emarginate-leaved Tooth-ache-tree. Clt. 1739. Tree 20 ft.

21 Z. acumina'tum (Swartz, fl. ind. occ. 1. p. 575.) unarmed; leaves impari-pinnate, with 3 or 4 pairs of elliptical, acuminated, entire, shining, coriaceous leaflets; cymes terminal. ♄. S. Native of Jamaica, on the mountains. Fagàra acuminàta, Swartz, prod. p. 33. Flowers white.

Acuminated-leaved Tooth-ache-tree. Clt. 1818. Tree 20 ft.

22 Z. sapindoìdes (D.C. prod. 1. p. 728.) stem and branches full of spines; leaves abruptly pinnate, with 4 pairs of obtuse emarginate leaflets. ♄. S. Native of Jamaica.—Browne, jam. 207. t. 20. f. 2. Sapíndus spinòsus, Lin. spec. 526. Licca-tree, Lunan. jam. 1. p. 443. The flowers are very fragrant.

Sapindus-like Tooth-ache-tree. Shrub.

23 Z. spinòsum (Swartz, fl. ind. occ. 1. p. 574.) leaves pinnate, with 8 or 10 pairs of sessile ovate-acuminated leaflets, spiny beneath, as well as the petioles and branches; cymes terminal. ♄. S. Native of Jamaica, on arid mountains. Fagàra spinòsa, Swartz, prod. p. 33. Style wanting. Stigmas 3. Flowers white.

Spiny Tooth-ache-tree. Shrub 6 feet.

Sect. IV. Ochro'xylum (from ωχρος, *ochros*, yellow, and ξυλον, *xylon*, wood; roots yellow). Schreb. Nees et Mart.—Kampmánnia, Rafin.—Fagàra spec. Lam. Flowers dioecious. Calyx 5-parted. Petals 5. Stamens 5. Ovaries 3 (Schreb.), 1 to 5 (Mart.). Styles distinct.

* *Leaves simple.*

24 Z. ochróxylum (D. C. prod. 1. p. 725.) trunk prickly; leaves ovate, full of pellucid dots; ovaries 3, each terminated by a style. ♄. S. Native of the Caribbee Islands. Ochróxylum and Curtìsia, Schreb. no. 508. et emend. p. 826. Fagàra monophýlla, Lam. ill. no. 1643. Flowers white.

Yellow-wooded Tooth-ache-tree. Tree 20 feet.

25 Z. penta'nome (D. C. prod. 1. p. 725.) prickly; leaves alternate, oval, acuminated at both ends, quite entire; panicle terminal; ovaries 5, each bearing a style. ♄. S. Native of Mexico. Pentánome simplicifòlia, Moc. et Sesse, fl. mex. ined. icon.

Five-parted Tooth-ache-tree. Shrub.

* * *Leaves impari-pinnate.*

26 Z. trica'rpum (Mich. fl. bor. amer. 2. p. 335.) leaves impari-pinnate, with 3 or 5 pairs of oblong-oval, acuminated, serrulated leaflets, which are oblique at the base; petioles and branches prickly; panicle terminal. ♄. H. Native of Carolina and Florida in woods. Fagàra fraxinifòlia. Lam. ill. 1. t. 334.

Three-fruited Tooth-ache-tree. Fl. Jul. Clt. 1806. Sh. 6 ft.

27 Z. melanosti'ctum (Nees in Schlecht. Linnæa. 5. p. 37.) branches prickly; leaves impari-pinnate, with 1-2 pairs of stalked elliptic leaflets, which are acute at the base, and bluntly acuminated at the apex, entire, coriaceous, shining; panicle axillary, shorter than the leaves. ♄. S. Native of South America. Calyx 5-parted. Petals 5. Stamens 5.

Black-dotted-leaved Tooth-ache-tree. Tree.

28 Z. rhoifòlium (Lam. dict. 2. p. 39.) prickly; leaves impari-pinnate, with many pairs of lanceolate, serrulated, leaflets, which are nearly equal at the base; petioles pubescent, somewhat prickly; panicles lateral. ♄. S. Native of the East Indies.—Pluk. phyt. t. 329. f. 1.

Red-leaved Tooth-ache-tree. Tree 20 feet.

29 Z. tragòdes (D. C. prod. 1. p. 725.) prickly; leaves impari-pinnate; leaflets wedge-shaped, emarginate; petioles broadly-winged, nearly separable at the joints of the leaflets. ♄. S. Native of St. Domingo. Schìnus tragòdes, Lin. spec. ed. 1. p. 369. Fagàra tragòdes, Jacq. amer. 21. t. 14. pict. 16. t. 19. Hayne, term. bot. t. 14. f. 2. Flowers whitish.

Goat's-tooth-ache-tree. Clt. 1759. Shrub 6 feet.

30 Z. HERMAPHRODÌTUM (Willd. spec. 4. p. 756.) prickly; leaves impari-pinnate, with 5 pairs of oblong, quite entire, acuminated leaflets, which are almost equal at the base; petioles unarmed; panicles terminal. ♄. S. Native of Guiana, in woods. Ovaries 3-5, each terminated by a style. Fagàra pentándra, Aubl. guian. 1. p. 78. t. 30. Fagàra Guianénsis, Lam. dict. 2. p. 446. Wood hard, white, and durable. Flowers white. The tree is called *Cacatin* by the Caripous, and *Poivre des Negroes* by the Creoles.

Hermaphrodite Tooth-ache-tree. Fl. May. Tree 50 feet.

SECT. V. LANGSDÓRFIA (in honour of George Langsdorf, of Heidelberg, a great traveller and collector of plants). Leandr. but not of Rich.—Pohlàna, Nees et Mart.—Macquèria, Comm. Calyx 5-parted. Petals 5. Stamens 5. Ovaries 1. Style 1.

31 Z. LANGSDÓRFII (St. Hil. fl. bras. 1. p. 76.) prickly; leaves impari-pinnate; leaflets oblong-lanceolate, serrated, unequal at the base; petioles pubescent; flowers thyrsoid, lateral, and terminal. ♄. S Native of Brazil. Pohlàna Langsdórfii, Nees et Mart. in nov. act. bonn. 12. p. 17. Flowers green.—Langsdórfia, Leandr. de sacram. denkschr. der Akad. de W. zu Munchen 12. p. 29. t. 12.

Langsdorf's Tooth-ache-tree. Shrub 3 feet.

32 Z. MONO'GYNUM (St. Hil. in bull. philom. 1823. p. 129.) unarmed; leaves trifoliate; leaflets roundish-elliptical, sharply taper-pointed, obtuse, quite entire, smooth; common petiole and middle nerve of leaf puberulous; panicles terminal; pistils solitary, rarely twin. ♄. S. Native of Brazil, where it is commonly called *Ponta da Fruta* and *Larangeira braba*. Flowers green?

Monogynous Tooth-ache-tree. Shrub.

33 Z. SENEGALE'NSE (D. C. prod. 1. p. 726.) prickly; leaves impari-pinnate; leaflets obovate, quite entire, somewhat emarginate; petioles terete, and are as well as the nerves of the leaves prickly. ♄. S. Native of Senegal. Fagàra zanthoxyloìdes, Lam. dict. 2. p. 446. Flowers white.

Senegal Tooth-ache-tree. Shrub.

34 Z. HETEROPHY'LLUM (Smith, in Rees' cycl. no. 14.) prickly; leaves impari-pinnate, very long on young trees, with about 20 pairs of prickly leaflets, but they are much shorter on the adult trees, with about 4 pairs of unarmed leaflets; petioles round. ♄. S. Native of the Island of Bourbon, about Gol. Fagàra heterophýlla, Lam. dict. 2. p. 445. Macquèria, Comm. Flowers hermaphrodite, white.

Variable-leaved Tooth-ache-tree. Tree.

35 Z. SORBIFÒLIUM (St. Hil. fl. bras. 1. p. 75.) prickly; leaves pinnate, with 3-5 pairs of ovate-oblong, obtuse, rather retuse, crenate-serrated, smooth leaflets; peduncles rather prickly; rachis wingless; flowers panicled, 5-petalled; pistil solitary. ♄. S. Native of Brazil, near Rio Janeiro. Flowers greenish.

Mountain-ash-leaved Tooth-ache-tree. Fl. Aug. Tree.

36 Z. AUSTRALA'SICUM (Andr. Juss. in mem. mus. 12. p. 503.) branches tubercled; leaves simple, oblong-linear, obtuse, entire; peduncles terminal, few-flowered; ovaries 5, only one of which comes to maturity; styles joined. ♄. G. Native of New Holland. Eriostèmon linearifòlium, D. C. prod. 1. p. 720.

Australian Tooth-ache-tree. Shrub 6 feet.

SECT. VI. AUBE'RTIA (in honour of Aubert du Petit Thouars, a well known French botanist). Bory St. Vinc. voy. afr. 1. p. 256. t. 18. Calyx short, 4-parted. Petals 4, longer than the calyx. Stamens 4, very short; anthers barren. Ovaries 4, seated on a short gynophore. Capsules 4, or fewer from abortion, each containing 1-2-seeds.

37 Z. AUBE'RTIA (D. C. prod. 1. p. 725.) unarmed; leaves opposite, simple, ovate, obtuse, quite entire or emarginate, full of pellucid dots; flowers disposed in axillary racemes. ♄, S. Native of the Island of Bourbon, on the high plains called D'Afouge. Aubértia Borbónica, Bory, l. c.

Aubert du Petit Thouars' Tooth-ache-tree. Tree 20 feet.

38 Z. OBTUSIFÒLIUM; leaves trifoliate; leaflets oval, obtuse, smooth; panicles axillary, a little shorter than the leaves. ♄. S. Native of the Mauritius. Evòdia obtusifòlia, D. C. prod. 1. p. 724. Style simple, deeply 4-parted into revolute segments.

Blunt-leaved Tooth-ache-tree. Shrub.

SECT. VII. AMPA'CUS (Malay name of *Z. triphýllum*) Rumph. amb. 2. p. 188. 189. t. 61. t. 62. Evòdia, D. C. prod. 1. p. 724. Flowers hermaphrodite. Calyx 4-5-toothed. Petals 4-5. Glands 5, between the stamens and the ovary; ovaries 4, connected at the base, each containing 1 or 2 seeds.

39 Z. LATIFÒLIUM; unarmed; leaves opposite, trifoliate; leaflets ovate, acute, woolly beneath; panicles axillary, length of petioles. ♄. S. Native of Amboyna. Ampàcus latifòlia, Rumph. amb. 2. p. 186. t. 61. Evòdia latifòlia, D. C. prod. 1. p. 724. Leaflets 8 or 12 inches long. Flowers white.

Broad-leaved Tooth-ache-tree. Tree 20 feet.

40 Z. TRIPHY'LLUM; unarmed; leaves opposite, trifoliate; leaflets oblong, entire, smooth; panicles axillary, pyramidal, about the length of the petioles. ♄. S. Native of the East Indies, in the island of Pulo-Penang. Z. Lamarkiànum, Nees. Fagàra triphýlla, Lam. dict. 2. p. 447. Roxb. fl. ind. 1. p. 436. Evòdia triphýlla, D. C. prod. 1. p. 724. Ampàcus angustifòlia, Rumph. amb. ii. p. 188. t. 62. Flowers numerous, minute, white, scentless. Calyx 4-toothed. Petals 4, 4-times longer than the calyx. Stamens 4. Ovary roundish, woolly, 4-furrowed, the filaments resting in the furrows. Style 1, terminated by a 4-lobed stigma. Capsules 1-4, distinct, size of a field-bean, 1-celled, 2-valved, opening along the upper and inner margin, each containing 2 seeds.

Three-leaved Tooth-ache-tree. Shrub 4 feet.

† *The flowers of the following species being unknown, it is therefore doubtful to which of the sections they may belong. The leaves of all are impari-pinnate, and the flowers of most of them are probably dioecious.*

41 Z. RI'GIDUM (Humb. in Willd. spec. 4. p. 756. and H. B. et Kunth, nov. gen. amer. 6. p. 4.) prickly; leaflets 4 pairs, elliptical, quite entire, emarginate, mucronate, hairy on the veins beneath, with the middle rib and petioles prickly. ♄. S. Native of South America.

Stiff Tooth-ache-tree. Tree or shrub.

42 Z. JUGLANDIFÒLIUM (Willd. spec. 4. p. 756.) armed; leaflets oblong, acuminated, obsoletely serrated, unequal at the base, a little dotted; petioles prickly; panicles terminal. ♄. S. Native of St. Domingo.—Pluk. t. 239. f. 6. Leaflets stalked, alternate.

Var. β, Berteriànum (D. C. prod. 1. p. 727.) leaflets sessile, usually opposite; racemes and petioles pubescent. ♄. S.

Juglans-leaved Tooth-ache-tree. Tree.

43 Z. LANCEOLA'TUM (Poir. suppl. 2. p. 293.) armed; leaflets 6-7 pairs, elliptical-lanceolate, membranaceous, without dots, hairy beneath; petioles prickly; panicles terminal. ♄. S. Native of Porto Rico, where it is called *Cenizo*, and of Guadaloupe.

Lanceolate-leafletted Tooth-ache-tree. Tree?

44 Z. CLA'VA-HE'RCULIS (Lin. spec. 1455. exclusive of the synonyms) armed; leaflets 4 pairs, ovate, repandly-toothed, unequal at the base, quite smooth, sessile, full of pellucid dots; panicles terminal. ♄. S. Native of the Caribbee Islands.

Z. Caribæ'um, Lam. but not of Gært. Z. Caroliniànum, Gært. —Pluk. t. 239. f. 4.

Hercules'-club Tooth-ache-tree. Clt. 1739. Tree 50 feet.

45 Z. AROMA'TICUM (Willd. spec. 4. p. 755.) armed; leaflets 6 pairs, ovate-lanceolate, serrated, stalked, unequal at the base, smooth, full of pellucid dots; panicles terminal and axillary. ♄. S. Native of St. Domingo. Jacq. fil. eclog. 1. p. 103. t. 70. There is a variety with unarmed petioles.

Aromatic Tooth-ache-tree. Clt. 1824. Shrub.

46 Z. OBTUSIFÒLIUM (Poir. suppl. 2. p. 293.) prickly; leaflets usually 4-pairs, coriaceous, obversely subovate, rounded at apex, smooth, prickly beneath as well as the petioles; panicle terminal, dense. ♄. S. Native of the East Indies?

Obtuse-leaved Tooth-ache-tree. Shrub.

47 Z. ARMA'TUM (Roxb. hort. beng. p. 72.) armed with straight, spreading prickles; leaflets 2 pairs, oblong, acuminated at both ends, entire; petioles unarmed; panicles terminal or subaxillary. ♄. S. Native of the East Indies. Flowers dioecious.

Armed Tooth-ache-tree. Clt. 1816. Shrub 10 feet.

48 Z. ACANTHOPÒDIUM (D. C. prod. 1. p. 727.) armed with straight, spreading prickles; leaflets 4 pairs, oblong, acuminated at both ends; middle rib and petioles armed with strong spines; corymbs axillary, very short. ♄. S. Native of Nipaul. Habit of the preceding species.

Prickly-foot-stalked Tooth-ache-tree. Shrub.

49 Z. HÓRRIDUM (D. C. prod. 1. p. 728.) leaves alternate; leaflets ovate, crenate; branches spiny. ♄. G. Native of Japan. Fagàra hórrida, Thunb. in Lin. trans. 2. p. 329. Flowers and fruit unknown.

Horrid Tooth-ache-tree. Shrub.

50 Z. SPÍNIFEX (D. C. prod. 1. p. 728.) leaves alternate, in fascicles, impari-pinnate; petioles winged a little; leaflets elliptical, entire, somewhat emarginate; branches spiny. ♄. S. Native of Caraccas. Fagàra spínifex, Jacq. fragm. p. 10. t. 6. f. 2. Flowers unknown.

Spiny Tooth-ache-tree. Shrub.

51 Z. CRIBRÒSUM (Spreng. syst. 1. p. 946.) unarmed; leaflets 3-pairs, oblong, blunt, coriaceous, crenate, full of pellucid dots; petioles rough. ♄. S. Native of Hispaniola.

Sieve-leaved Tooth-ache-tree. Tree.

52 Z. SELLÓI (Spreng. syst. 1. p. 946.) unarmed; leaves abruptly-pinnate, with 4 pairs of ovate-oblong, blunt, shining, reticulated leaflets, full of pellucid dots; petioles pubescent. ♄. S. Native of Brazil.

Sello's Tooth-ache-tree. Tree.

Cult. The species of *Zanthóxylum* will grow freely in sandy loam; and cuttings will root, if planted in a pot of sand, and placed under a hand-glass; those of the stove species in heat. The hardy species, or those native of North America, will thrive in any common garden-soil; they are well adapted for ornamenting small shrubberies. Ripened cuttings of these will root, if planted under a hand-glass, or they may be increased by slips of the roots; if planted in pots and placed in a hot-bed, they will grow up to young plants.

XLIII. BO'YMIA (in honour of Michael Boym, who wrote on Chinese plants and animals, in 1650). Andr. Juss. in mem. mus. 12. p. 507. t. 25. no. 39.

LIN. SYST. *Dioècia.* Flowers of distinct sexes. Male ones unknown. Female flowers. Calyx short, 5-cleft. Petals 5, longer than the calyx. Ovaries 5, seated round the base of a 5-scaled gynophore, connected together at the base, and appearing like one, each divided lengthwise by a simple furrow, containing 2 ovulæ. Styles 5, joined in one, short, crowned by a simple 5-furrowed, peltate, broader stigma, deciduous. Capsules 5, connected at the base, but spreading at the apex, convex outside, but angular, and opening inwardly, each containing a solitary, globose, smooth seed. Shrubs with impari-pinnate leaves.

1 B. RUTÆCA'RPA (Juss. in mem. mus. 12. t. 25. no. 39.). ♄. G. Native of China, where it is called *Ou-tchou-yu.* The fruit, when infused in cold water, exhales a scent like *Ptelea.*

Rue-fruited Boymia. Shrub.

2 B. MARTINICE'NSIS; leaves impari-pinnate, prickly; leaflets alternate, oblong, quite entire; stigma peltate; flowers pentandrous. ♄. S. Native of Martinique. Zanthóxylum Martinicénse, D. C. prod. 1. p. 726. Fagàra Martinicénsis, Lam. ill. no. 1659.

Martinique Boymia. Shrub.

Cult. See *Zanthóxylum* for cultivation and propagation.

XLIV. TODDA'LIA (*Kaka-Toddali* is the Malabar name of *T. aculeàta*). Juss. gen. 371. Kunth, gen. tereb. p. 24. D. C. prod. 2. p. 83. Andr. Juss. in mem. mus. 12. p. 508. t. 26. no. 40.—Scopòlia, Smith, in Rees' cycl.—Cránzia, Schreb. no. 362. Vèpris, spec. Comm.

LIN. SYST. *Monœ'cia, Pentándria.* Flowers of separate sexes. Calyx short, 5-toothed. Petals 5, longer than the calyx, spreading much. Male flowers. Stamens 5, longer than the petals, inserted round about the base of the gynophore, bearing a prismatical 5-sided rudiment of a pistil. Female flowers. Filaments 5, very short, sterile. Ovary seated on a gland-like, short, 5-furrowed gynophore, simple, egg-shaped, fleshy, 5-celled, each cell containing 2 ovulæ. Stigma almost sessile, peltate, 5-lobed. Fruit fleshy, dotted, 5-furrowed, 5-celled, each cell containing 1 angular, kidney-shaped seed. Embryo arched.—Dwarf shrubs, with alternate, trifoliate leaves, full of pellucid dots. Panicles of flowers axillary, usually solitary, rarely twin; pedicels furnished with bracteas. Male and female flowers on different branches, never on separate trees. Branches, petioles, and peduncles, usually prickly. Number of parts of flowers sometimes in fours. Petals in bud convolute.

1 T. ACULEA'TA (Pers. ench. 249.) prickles on branches recurved; leaflets ovate-oblong. ♄. S. Native of the Mauritius and of the Indian archipelago. Paullínia Asiática, Lin. spec. 524. Scopòlia aculeàta, Smith, ined. 2. p. 34. T. Asiática, Lam. Flowers white, strong-scented.

Var. α, acanthophýlla (D. C. prod. 2. p. 83.) racemes shorter than the leaves; leaves prickly; leaflets ovate-lanceolate. ♄. S. Native of Malabar.—Rheed. mal. 5. t. 41.

Var. β, nítida (Lam. ill. t. 139. f. 1.) racemes longer than the leaves; leaflets ovate, unarmed. ♄. S. Native of Ceylon. Burm. zeyl. p. 28. t. 24.

Var. γ, rubricaúlis (Willd. in Rœm. et Schult. 5. p. 323.) branches pubescent; leaves unarmed; leaflets obovate, acuminated. ♄. S. Native of the East Indies.

Prickly Toddalia. Clt. 1790. Shrub 6 feet.

2 T. ANGUSTIFÒLIA (Lam. ill. no. 2759.) branches unarmed, pubescent; leaflets linear-lanceolate, shining, veined beneath; racemes lateral, shorter than the leaves. ♄. S. Native of the Mauritius and the East Indies. Rubéntia angustifòlia? Boj. Scopòlia angustifòlia, Spreng. syst. 1. p. 779. Flowers white.

Narrow-leaved Toddalia. Clt. 1824. Shrub 6 feet.

3 T. MEGAPOTA'MICA; unarmed; leaflets lanceolate, abruptly acuminated, quite entire, opaque, smooth; panicles axillary, divaricating. ♄. S. Native of Brazil, at Rio Grande. Scopòlia Megapotámica, Spreng. syst. app. p. 91. Flowers white.

Rio Grande Toddalia. Shrub 6 feet.

4 T. VENÒSA; leaflets spatulately-lanceolate, mucronate, quite smooth, shining above, veined beneath; branches warted;

branchlets smooth; racemes axillary. ♄. S. Native of Brazil, at Rio Grande. Scopòlia venòsa, Spreng. syst. app. p. 91.

Veiny-leaved Toddalia. Shrub 6 feet.

Cult. These shrubs thrive best in a mixture of loam, sand, and peat; and cuttings, planted in a pot of sand, will strike root readily, if placed under a hand-glass, in heat.

XLV. VE'PRIS (from *vepres*, a briar or bramble). Andr. Juss. in mem. mus. 12. p. 509. t. 26. no. 41. Toddàlia and Scopòlia, species of authors.

LIN. SYST. *Monœ'cia, Octándria.* Flowers of separate sexes. Calyx short, 4-parted. Petals 4, longer than the calyx, spreading much. Male flowers. Stamens 8, 4 of which are opposite the petals, and are shorter than the others, inserted around the base of the gynophore, which bears the rudiments of 4 ovaries. Female flowers. Ovary seated on a very short, gland-like, 8-lobed gynophore, surrounded by 8 very minute scales, simple, globose, fleshy, 4-celled, each cell containing 2 ovulæ. Stigma sessile, broad, convex, peltate, 4-lobed. Fruit fleshy, dotted, 4-furrowed, 4-celled; cells 1-seeded. Seed egg-shaped, 2-celled, one of which is abortive. Embryo a little arched.—Small trees, with alternate, trifoliate leaves; leaflets entire, quite smooth, reticulated, and full of pellucid dots. Flowers panicled, terminal, male and female on different branches, but not on different plants? Petals in the bud convolute.

1 V. LANCEOLA'TA; leaflets lanceolate, acuminated, shining; panicles terminal. ♄. S. Native of the Mauritius. Toddàlia lanceolàta, Lam. ill. no. 2760. Scopòlia lanceolàta, Spreng. syst. 1. p. 779. Flowers white.

Lanceolate-leaved Vepris. Shrub 6 feet.

2 V. OBOVA'TA; leaflets obovate, bluntish; petioles margined; panicle terminal, corymbose. ♄. S. Native of the Mauritius. Toddàlia paniculàta, Lam. ill. t. 139. f. 2. Scopòlia inérmis, Smith, icon. ined. 2. p. 34. Scop. paniculàta, Spreng. syst. 1. p. 779. V. inérme, Andr. Juss. l. c. t. 26. no. 41. Flowers white.

Obovate-leaved Vepris. Clt. 1824. Shrub 10 feet.

Cult. See *Toddàlia* for cultivation and propagation.

XLVI. PTE'LEA (πτελεα, *ptelea*, the Greek name of the elm, from πταω, *ptao*, to fly; in allusion to the winged fruit). Lin. gen. no. 152. Lam. ill. t. 84. Gært. fruct. 1. t. 40. Kunth, gen. tereb. p. 23. D. C. prod. 2. p. 82. Andr. Juss. in mem. mus. 12. p. 500. t. 26. no. 42. Bellùcia, Adans.

LIN. SYST. *Monoècia, Tetra-Pentándria.* Flowers of separate sexes. Calyx short, 4-5-parted. Petals 4-5, longer than the calyx, spreading much. Male flowers. Stamens 4-5, longer than the petals; filaments thickened below and hairy, inserted around the base of the gynophore, bearing an abortive pistil, much shorter than the stamens. Female flowers. Stamens 4-5, very short, bearing barren anthers. Ovary seated on a convex gynophore, compressed, 2-3-celled, each cell containing 2 ovulæ. Style short, terminated by a 2-3-lobed stigma. Fruit compressed, indehiscent, samara-like, turgid, 2-3-celled, each cell containing 1 seed expanded around into a membranous netted orbicular wing. Seeds oblong. Embryo straight.—Shrubs with alternate, simple, ternate, or quinate leaves, full of pellucid dots; lateral leaflets unequal-sided. Flowers greenish-white, corymbose; cormybs compound, in axillary or terminal panicles; pedicels furnished with bracteas. Male flowers sometimes with 6 or 7 anthers; stamens unequal. Female flowers sometimes with a 3-celled ovary and a 3-lobed stigma.

* *Leaves trifoliate.*

1 P. TRIFOLIA'TA (Lin. spec. 173.) leaflets ovate, acute, middle one tapering much to the base; flowers in corymbs, usually tetrandrous. ♄. H. Native of North America, from New York to Carolina in shady moist hedges, and on the edges of woods among rocks. Flowers small, greenish-white in corymbose clusters.

Var. β, pentaphy'lla (D. C. prod. 2. p. 83.) leaflets 5.

Var. γ, pubéscens (Pursh, fl. amer. sept. 1. p. 107.) leaves pubescent. ♄. H. Native of Pennsylvania.

Shrubby *Trefoil.* Fl. June, July. Clt. 1704. Shrub 10 to 15 feet.

2 P. PENTA'NDRA (Moc. et Sesse, fl. mex. icon. ined. D. C. prod. 2. p. 83.) leaflets oval, on short stalks, tapering to both ends; flowers panicled, pentandrous. ♄. G. Native of Mexico. Flowers greenish-white.

Pentandrous Shrubby Trefoil. Shrub 6 to 10 feet.

3 P. PODOCA'RPA (D. C. prod. 2. p. 83.) leaflets ovate, blunt at the base, sessile; corymbs few-flowered; fruit elliptical, on pedicels. ♄. G. Native of Mexico. Pt. trifoliàta, Moc. et Sesse. fl. mex. icon. ined. Flowers greenish-white.

Foot-fruited Shrubby Trefoil. Shrub 10 feet.

* * *Leaves simple.*

4 P. OVA'TA (Lour. fl. coch. 82.) leaves ovate; racemes short, scattered. ♄. G. Native of Cochin-china. Seríngia ovàta, Spreng. syst. 1. p. 441. Stigma simple. Flowers dioecious, the male only having been seen, therefore the genus is very doubtful.

Ovate-leaved Ptelea. Shrub 4 feet.

5? P. MONOPHY'LLA (Lam. dict. vol. 5.) leaves ovate-lanceolate, nearly sessile; flowers racemose; fruit 3-winged. ♄. H. Native of Carolina.

One-leaved Ptelea. Shrub 4 feet.

Cult. The hardy species of *Ptèlea* will grow in any common soil; they are well adapted for shrubberies, and they are generally increased by seeds, which should be sown in a light soil in April, they may also be increased by layers. The greenhouse kinds will thrive well in a mixture of loam and peat; and ripened cuttings will strike root, if planted in a pot of sand, with a hand-glass placed over them.

XLVII. BLACKBU'RNIA (in honour of John Blackburn, an English naturalist). Forst. gen. t. 6. D. C. prod. 2. p. 83. —Blackboúrnea, Kunth, gen. tereb. p. 24.

LIN. SYST. *Dioècia, Tetrándria.* Flowers of separate sexes. Calyx 4-toothed; teeth acute, horizontal. Petals 4, elliptical, hypogynous and valvate when in bud (Kunth). Stamens 4. Ovary conical, 1-seeded. Style filiform. Stigma simple. Berry? 1-seeded.—Treés, with simple or abruptly pinnate leaves. Flowers in axillary racemes or panicles.

1 B. PINNA'TA (Forst. gen. t. 6.) leaves pinnate; leaflets oblong, blunt, unequal at the base; panicles small, axillary. ♄. G. Native of Norfolk Island. Ptèlea pinnàta, Lin. fil. suppl. 126. Samàra Blackbúrnia, Spreng. syst. 1. p. 441. Leaves quite smooth, with 2 or 3 pairs of leaflets. Flowers yellow.

Pinnate-leaved Blackburnia. Tree 20 feet.

2 B. MONADE'LPHA (Roxb. fl. ind. 1. p. 435.) leaves alternate, lanceolate; filaments united at the base; nectary a staminiferous ring surrounding the base of the ovary; berry superior, 1-seeded; seed arillate. ♄. S. Native of the East Indies on the mountainous parts of the Circars. A large, erect, timber-tree; the wood is white, close-grained, and durable; and in the country of its natural growth is employed by the natives for a variety of purposes. Flowers small, yellow, disposed in an axillary, frequently compound raceme. Berry about the size of a cherry; when ripe it has a deep-purple bloom, which makes it very inviting to the eye. Seed of a lively purple colour.

Bark yellowish-green outside, but of a deep red on the inside, tinging the spittle with that colour. It is a strong astringent.

Monadelphous Blackburnia. Tree 60 feet.

Cult. These trees will do well in a mixture of loam, peat, and a little sand; and ripened cuttings will strike root if planted in a pot of sand, with a hand-glass placed over them, in a moderate heat.

XLVIII. AILA'NTUS (*Ailanto* is the name of *A. glandulòsa* in the Moluccas). Desf. in act. acad. par. 1786. p. 263. t. 8. Kunth, gen. tereb. p. 26. D. C. prod. 2. p. 88. Andr. Juss. in mem. mus. 12. p. 511. Pongèlion, Rheed.

Lin. syst. *Polygàmia, Monoècia.* Flowers polygamous. Male ones. Calyx 5-cleft. Petals 5, longer than the calyx, spreading. Stamens 10, the 5 opposite the petals shortest. Disk central, bearing the petals and stamens around its sides, drawn out above into a 5-plicate ring, with 5 minute, distinct ovaries, or fewer, immersed between the plaits of the disk. Hermaphrodite or female flowers, with the calyx, petals, and disk as in the male, but with fewer stamens. Ovaries 3-5, distinct, compressed, each rising from the inner notch of the style, terminated by a spreading stigma. Samaræ 3-5, oblong, tongue-shaped, compressed, membranous, netted, tumid in the middle, and 1-celled; cell 1-seeded; seed compressed. Albumen wanting. Embryo straight, with a short, superior radicle, and leafy cotyledons.—Tall trees, with abruptly or impari-pinnate leaves; leaflets opposite, unequal-sided, entire, or toothed, without dots. Flowers whitish-green or yellowish, disposed in large branched, terminal, fascicled panicles; pedicels furnished with bracteas. Petals twisted in the bud at the apex, the rest convolutely-valvate.

1 A. glandulòsa (Desf. l. c. Lher. stirp. t. 84.) leaves impari-pinnate; leaflets coarsely toothed at the base, furnished with glands beneath the teeth. ♄. H. Native of China and the Moluccas, where it is called *Ailanto.* Ailántus prócera, Sal. prod. 271. Rhus. hypsotodéndron, Mœnch. Rhus. cacodéndron, Ehrh. beitr. 2. p. 111. Rhus. Sinénse, l. c. Ellis. in phil. trans. 49. p. 870. t. 25. f. 5. and vol. 50. p. 446. t. 17. Flowers whitish-green, exhaling a disagreeable odour. Leaves 3 feet long. The tree grows very fast in England, and being handsome, is proper for ornamental plantations. If the bark be wounded, a resinous juice flows out, which hardens in a few days. The wood is hard, heavy, glossy like satin, and is susceptible of a very fine polish. With us the tree has hitherto produced only male flowers; at Paris and Leyden it has borne female flowers and fruit, but the fruit has not ripened. Some years it bears only male flowers, but about twice in ten years it bears both male and female flowers in France. Mr. Miller supposed this to be the *Fasi-no-ki* or spurious varnish-tree of the Japanese, but it is clear he was mistaken, because the leaves of that tree are entire.

Glandular-leaved or Chinese Ailanto. Fl. Aug. Clt. 1751. Tree 60 feet.

2 A. excélsa (Roxb. cor. 1. t. 23.) leaves abruptly pinnate; leaflets coarsely toothed at the base, without glands. ♄. S. Native of the East Indies, on the mountainous parts of the Circars. Flowers whitish-yellow. Leaves 3 feet long, having 10-14 pairs of leaflets. The wood is white and light, but it soon perishes; it is chiefly used to make cattamarans (rafts for fishermen to go a fishing on).

Tall Ailanto. Clt. 1800. Tree 66 feet.

3 A. Molucca'na (D. C. prod. 2. p. 89.) leaves abruptly pinnate; leaflets entire; samaræ acute at both ends, free from each other. ♄. S. Native of the Moluccas. A. integrifòlia var *a*, Lam. dict. 3. p. 417.

Molucca Ailanto. Tree 50 feet.

4 A. Malaba'rica (D. C. prod. 2. p. 89.) leaves abruptly pinnate; leaflets entire; samaræ blunt at both ends, connected together at the base. ♄. S. Native of Malabar. Pongèlion or Perimàrum, Rheed. mal. 6. t. 15. Tree 12 feet in diameter. The wood is made into sheaths for spears, &c. The bruised leaves give an elegant tinge to water. The fruit triturated with mango, and mixed with rice in decoction makes a good injection for *ophthalmia* and *aphalalgia.* There is a resinous juice flows from the bark when wounded.

Malabar Ailanto. Tree 50 feet.

Cult. The *A. glandulòsa* is a very desirable tree for plantations, or to stand singly on lawns; it is easily increased by slips of the roots. The others are stove trees; these will grow freely in a mixture of loam and peat; and the best way to increase these is by pieces of the roots, planted in a pot with their points above the ground, and placed in a hot-bed frame, where they will soon make fine plants.

† *The following genera are allied to Rutàceæ, but they are not sufficiently known to be placed in any particular situation.*

XLIX. POLE'MBRYUM (from πολυ, *poly*, many, and εμβρυον, *embryon*, an embryo; embryos numerous). Andr. Juss. in mem. mus. 12. p. 519. t. 28. no. 49.

Lin. syst. unknown. Fruit almost sessile, echinated, of 5 carpels, connected together by the sides, but at last becoming free. Endocarp cartilaginous, woody, with 2 elastic valves 1-seeded, sometimes probably 2-seeded, separable from the sarcocarp. Seed bluntly ovate or ovate-conical, each marked at the base by a large very black spot under a very thin testaceous integument, embracing the embryos, which are usually 3 in a whorl, inverted, unequal. Cotyledons fleshy, very thick, unequal, dotted, with the radicle hardly exserted. The rest unknown. This genus will probably come near to *Calodéndron*, with which it is commonly called *Wild Chesnut* by the natives of the Cape of Good Hope.

1 P. castaneæca'rpon (St. Hil. in mem. mus. 12. t. 28. no. 49.) ♄. G. Native of the Cape of Good Hope.

Chesnut-fruited Polembryum. Tree?

Cult. See *Calodéndron* for cultivation and propagation.

L. PSEUDIO'SMA (from ψευδης, *pseudes*, false; false Diósma). Andr. Juss. in mem. mus. 12. p. 519.

Lin. syst. *Pentándria, Monogýnia.* Calyx 5-parted. Petals 5, longer than the calyx. Anthers 5, sessile, connivent. Ovary 5-lobed, girded by a crown-like nectary. Style and stigma simple. Carpels 5, each seated on a separate stipe, somewhat kidney-shaped, each containing a solitary seed, but not calyptrate.—A little tree, with simple, lanceolate, quite entire, smooth, alternate leaves. Flowers yellow, disposed in almost terminal compound racemes.

1 P. Asia'tica. ♄. G. Native of Cochin-china, on mount Hon-chen. Diósma Asiática, Lour. fl. coch. 161.

Asiatic Pseudiosma. Shrub 6 feet.

Cult. This shrub will grow very well in a mixture of loam and peat; and young cuttings will root in a pot of sand under a hand-glass.

LI. THYSA'NUS (from θυσανος, *thysanos*, a fringe; in allusion to the red fringed coat of the seed). Lour. fl. coch. 281. D. C. prod. 2. p. 91. Andr. Juss. in mem. mus. 12. p. 521.

Lin. syst. *Decándria, Tetragýnia.* Calyx of 5 permanent sepals. Petals 5, oblong, equal in length to the calyx, spreading. Stamens 10, short, with reflexed filaments, and roundish erect anthers. Ovary tetragonal. Styles 4, filiform, inserted

in the 4 sides of the ovary, each terminated by a bifid stigma. Drupes 4, oblong, gibbous, recurved at the apex, opening on the side, clothed with wool, each containing a solitary, oblong-ovate, smooth nucleus, enwrapped in a fringed, red, fleshy coat.—An unarmed shrub, with pinnate leaves, and lateral, many-flowered peduncles. Flowers with a reddish calyx, and white petals.

1 T. COCHINCHINE'NSIS (D. C. prod. 1. p. 91.) ♄. G. Native of Cochin-china, in woods. T. Palàta, Lour. l. c. exclusive of the synonyme of Rumph. and therefore of the specific name. Leaflets 10 pairs, oblong, quite entire. The genus is probably allied to *Ailántus*.

Cochin-china Thysanus. Shrub 6 feet.

Cult. See *Ailántus* for cultivation and propagation.

LII. TETRA'DIUM (from τετραδιον, *tetradion*, quaternary; parts of flowers and fruit in fours). Lour. fl. cochin. p. 91. D. C. 2. p. 88. Andr. Juss. in mem. mus. 12. p. 529.

LIN. SYST. *Tetrándria, Tetragýnia*. Flowers hermaphrodite. Calyx short, 4-parted. Petals 4, longer than the calyx. Stamens 4, equal in length to the calyx; filaments thick, awl-shaped, hairy. Ovary 4-lobed. Style wanting. Stigmas 4, awl-shaped, erect. Capsules 4, roundish, opening at the apex. Seeds shining, arillate.—A tree, with impari-pinnate smooth leaves. Flowers whitish, disposed in large, subterminal, trichotomous panicles. This genus will probably come near to *Zanthóxylum*.

1 T. TRICHO'TOMUM (Lour. l. c.) ♄. G. Native of the mountains of Cochin-china. Brùcea trichótoma, Spreng. syst. 1. p. 441. Leaflets quite entire.

Trichotomous-racemed Tetradium. Fl. April, May. Clt. 1822. Tree 20 feet.

Cult. See *Brùcea* for cultivation and propagation.

LIII. PHILAGO'NIA (meaning unknown). Blume, ex Nees in flora, 1825. p. 125. D. C. prod. 2. p. 90. Andr. Juss. in mem. mus. 12. p. 521.

LIN. SYST. *Dioècia, Tetrándria*. Flowers dioecious. Calyx small, 4-toothed. Petals 4, 3 times longer than the calyx, spreading, inserted under the disk, valvate in the bud. Male flowers. Stamens 4, hypogynous, shorter than the petals. Disk annular, obsolete. Female flowers. Filaments 4, without anthers. Ovary depressed, globose, 4-celled, each cell containing 2 ovulæ. Style short, terminated by a large peltate stigma. Fruit capsular tetragonal, 4-furrowed, 4-celled, 8-seeded. Seeds angular.—A tree, with impari-pinnate leaves without dots. Bark and fruit aromatic. This genus will probably come near to *Toddàlia* and *Zanthóxylum*.

1 P. PRO'CERA (Blume, l. c.) ♄. S. Native of Java.

Lofty Philagonia. Tree 60 feet.

Cult. See *Toddàlia* for cultivation and propagation.

LIV. ASAPHE'S (from ασαφης, *asaphes*, obscure; the genus is not well known). D. C. prod. 2. p. 90. Bóscia, Thunb. nov. gen. ups. 1798. but not of Lam. Andr. Juss. in mem. mus. 12. p. 521.

LIN. SYST. *Tetra-Pentándria, Trigýnia*. Calyx very short, 4-5-toothed. Petals 4-5, linear. Stamens 4-5, hypogynous, shorter than the petals. Ovary free. Styles and stigmas 3. Capsules pea-shaped, umbilicate, 4-furrowed, 4-celled, 4-valved, 4-seeded.—A shrub, with the appearance of a Rhus. Leaves alternate, stalked, ternate, rarely binate, but more rarely with the lower ones simple, full of parallel nerves. Flowers panicled, terminal, very minute. This genus will probably come near to *Vèpris*.

1 B. UNDULA'TA (Thunb. fl. cap. 1. p. 576.) ♄. G. Native of the Cape of Good Hope.

Waved-leaved Asaphes. Shrub.

Cult. See *Toddàlia* for cultivation and propagation.

LV. BARRALDE'IA (meaning unknown.) Pet. Th. nov. gen. mad. p. 24. D. C. prod. 1. p. 732.—Baráultia, Steud. nom.

LIN. SYST. *Decándria, Monogýnia*. Calyx urceolar, 5-cleft. Petals 5, small, bifid, unguiculate, inserted in the segments of the calyx. Stamens 10; filaments dilated at the base, 5 of which are opposite the petals, and longer than them, with a glandular circle on the outside of the pistil. Ovary adhering to the tube of the calyx, or immersed in it. Style 1, longer than the stamens. Fruit unknown.—A shrub, with opposite jointed branches. Leaves opposite, smooth, full of pellucid dots, a little toothed. Peduncles short, bifid or trifid. Flowers small, globular, when in the bud abounding in resin. This genus probably comes near to *Calodéndron*.

1 B. MADAGASCARIE'NSIS (Pet. Th. l. c.) ♄. S. Native of Madagascar.

Madagascar Barraldeia. Shrub 6 feet.

Cult. A mixture of loam, peat, and sand will suit this shrub, and ripened cuttings will root in sand under a hand-glass, in heat.

ORDER LX. SIMARU'BEÆ (plants agreeing with *Simaruba* in important characters). Rich. anal. fru. p. 21. D. C. diss. ochn. in ann. mus. 17. p. 423. D. C. prod. 1. p. 733.—Rutàceæ, Tribe Simarùbeæ, Andr. Juss. in mem. mus. 12. p. 512.

Flowers hermaphrodite, rarely of separate sexes from abortion, regular. Calyx of 4 or 5 permanent sepals, hardly connected at the base. Petals 4 or 5, longer than the calyx, spreading, but sometimes conniving into a tube, twisted in the bud, alternating with the sepals, caducous. Stamens double the number of the petals, sometimes longer, at other times shorter, than them; filaments each rising from the back of a hairy hypogynous scale. Anthers birimose. Ovaries 4-5, seated on the gynophore, which bears the stamens at the base, each ovary containing only a single ovula. Styles 4-5, emanating from the tops of the ovaries, connected in one, terminated by a single 4-5-lobed stigma, with the lobes distinct or connate. Drupes 4-5, or fewer from abortion, disposed in a whorl on a common receptacle, indehiscent. Seeds pendulous with a membranous integument. Embryo without albumen, and with a short superior radicle retracted between the cotyledons. Trees or shrubs. Leaves without stipulas, alternate for the most part, pinnate, very rarely simple; leaflets alternate or opposite, without dots. Peduncles axillary or terminal; panicles racemose or umbellate; pedicels furnished with bracteas. Flowers white, greenish, or purplish. This order differs from *Rutàceæ* in the seeds being destitute of perisperm, with a membranous covering instead, and in the radicle being as if it were retracted between the thick cotyledons, and in each ovary containing only a single ovula. It differs from *Ochnàceæ* in having more styles than one, rising from the tops of the ovaries, and in the ovula being suspended, not erect from the base of the cell, as well as in the anthers opening by 2 chinks, not by 2 pores at the apex. All the plants belonging to this order have an intensely bitter bark, a milky juice, and pinnate leaves. The *Simarùba officinàlis* is well known as the most powerful bitter hitherto discovered, the

same property exists, but in a milder degree, in the rest of the order.

Synopsis of the genera.

1 QUA'SSIA. Flowers hermaphrodite. Petals 5, conniving into a tube. Stamens 10. Ovaries 5.

2 SIMARU'BA. Flowers monoecious. Petals 5, spreading. Stamens 5-10. Ovaries 5.

3 SIMA'BA. Flowers hermaphrodite. Petals 4-5, spreading. Stamens 8-10. Ovaries 4-5.

4 SAMADE'RA. Flowers hermaphrodite. Petals 4. Stamens 8. Ovaries 4, seated on a stipe-formed torus.

† *Genera allied to Simarùbeæ.*

5 NÌMA. Flowers hermaphrodite. Petals 5. Stamens 5. Ovaries 5, joined.

6 HARRISÒNIA. Flowers hermaphrodite. Petals 4. Stamens 8. Ovary simple, tapering to the base.

I. QUA'SSIA (Quassi, the name of a negro slave who first used the bark of *Q. amàra* as a febrifuge). D. C. diss. ochn. in ann. mus. 17. p. 423. prod. 1. p. 733. Andr. Juss. in mem. mus. 12. p. 513. t. 27. no. 44. Quássia, spec. Lin. Juss. Gært. Rich.

LIN. SYST. *Decándria, Pentagýnia.* Flowers hermaphrodite. Calyx small, short, 5-parted. Petals 5, much longer than the calyx, connected into a tube. Stamens 10, longer than the petals. Ovaries 5, seated on a broader gynophore. Styles 5, rather distinct at the base, but connected in one towards the top, very long, terminated by a 5-furrowed stigma. Fruit 5, drupaceous.—A tree with alternate, impari-pinnate, smooth leaves, quite entire, opposite leaflets, and winged petioles. Flowers large, scarlet, disposed in simple or branched terminal racemes; pedicels jointed a little under the apex, each bearing 2 bracteas.

1 Q. AMA'RA (Lin. fil. suppl. 235. Lodd. bot. cab. 172. Curt. bot. mag. t. 497. Woodv. med. bot. t. 77. Lin. amœn. acad. 6. p. 421. t. 429.) ♄. S. Native of Surinam, Guiana, Cayenne, Antilles, and the island of Trinidad, in woods. Petioles of leaves reddish. Flowers about an inch long. The bitter *Quássia* is the produce of this tree, whose wood is more powerful than any of the other genera belonging to this order; but being very rare and of small bulk, its place is usually supplied by *Simarùba excélsa*. The wood, bark, and root are all comprehended in the catalogues of the Materia Medica; and it is observed that the leaves, flowers, &c. possess similar qualities. The roots, being perfectly ligneous, may be considered medicinally in the same light with the wood, which is now most generally employed, and seems to differ from the bark in being less intensely bitter, so that the latter is thought to be a more powerful medicine. *Quássia* has no sensible odour; its taste is that of pure bitter, more intense and durable than that of any other substance, and imparts its virtues more completely to watery than to spirituous menstrua, and its infusions are not blackened by the addition of partial vitriol. When the infusion is evaporated to dryness, it leaves a brownish-yellow, somewhat transparent, brittle extract, which has been regarded as a vegetable constituent *sui generis*, and named the bitter principle. (Edinb. phil. trans. 3. p. 207.)

Quássia derived its name, as has been already observed, from a negro named Quassi (by Termin written Coissi, and by Rolander Quass) who employed the wood with uncommon success as a secret remedy in the malignant, endemic fevers, which frequently prevailed at Surinam. In consequence of a valuable consideration, this secret was disclosed to Daniel Rolander, a Swede, who brought specimens of the Quassia-wood to Stockholm in the year 1756; and since that time the effects of this drug have been very generally tried in Europe, and numerous testimonies of its efficacy published by many respectable authors. Its antiseptic powers have been submitted to various trials, from which it has been concluded that it has considerable influence in retarding the tendency to putrefaction; which, in Professor Murray's opinion, cannot be attributed to its sensible qualities, as it possesses no astringency whatever, nor to its bitterness, as Gentian is much more bitter, but less antiseptic. The medicinal virtues ascribed to *Quássia* are those of a tonic, stomachic, antiseptic, and febrifuge; it has been found very effectual in restoring the tone of the stomach, producing appetite for food, assisting digestion, expelling flatulency, and removing habitual costiveness, produced from debility of the intestines, common to a sedentary life. Dr. Lettsom observes, that in hysterical atomy, to which the female sex is so prone, the *Quássia* affords more vigour and relief to the system than the Peruvian bark, especially when united with the *vitriolum album*, and still more with the aid of some absorbent. In dyspepsia, arising from hard drinking, and also in diarrhœas, he exhibited the *Quássia* with great success. Although he does not concur in opinion with Linnæus, who says, "*me quidem judice chinchinam longé* superat," yet he has met with several instances of low remittent and nervous fevers, the symptoms of which the bark uniformly aggravated, though administered in intermissions the most favourable to its success, in which *Quássia* or Snake-root was successfully substituted. Dr. Cullen says (Mat. med. vol. 2. p. 174.) "I believe *Quássia* to be an excellent bitter, and that it will do all that any pure and simple bitter can do; but our experience of it in this country does not lead us to think that it will do more; and the extraordinary commendations given are to be ascribed to the partiality so often shewn to new medicines." It is said to have been given, combined with nitric acid, with evident benefit in typhus, and also in fluor-albus. It may be given in infusion or decoction, which is the best form of administering it; or in pills, made from the watery extract. The infusion is prepared by macerating for two hours, in a lightly covered vessel, a scruple of quassia-wood, chipped, in half a pint of boiling water, and straining it. In hysteria this may be combined with purgatives and tincture of valerian; in atonic gout, with aromatics; and in dyspeptic affections with chalybeates, sulphate of zinc, or mineral acids. The dose is from f. ʒj. to f. ʒiij.. given twice or thrice a-day. The tincture is prepared by digesting for seven days an ounce of chips of quassia-wood in two pints of proof spirit, and then straining. This may be used in the same cases as the infusion. It is asserted that the brewers have, of late years, used quassia-wood instead of hops. Beer made with it certainly does not keep, says Thompson, but soon becomes muddy and flat, has a mawkish taste, and runs into the acetous fermentation. It is consequently less nutritious and wholesome than that which is properly hopped. Woodv. mat. med. Thompson's lond. disp. It subjects those brewers who employ it to a heavy penalty. Quassia-wood evidently has a narcotic power, from its being used to poison flies.

Bitter Quassia. Fl. June, July. Clt. 1790. Tree 20 feet.

Cult. Loam and sand is the best mixture for this tree, and ripened cuttings, with the leaves not shortened, will root in sand, under a hand-glass, in heat.

II. SIMARU'BA (*Simarouba* is the Caribbean name of *S. officinàlis*). Aubl. guian. 2. p. 856. D. C. prod. 1. p. 733. Andr. Juss. in mem. mus. 12. p. 514. t. 27. no. 44.

LIN. SYST. *Monoècia, Octo-Decándria.* Flowers of separate

sexes. Calyx small, cup-shaped, 5-toothed. Petals 5, spreading. Male flowers. Stamens 10, rarely 8, equal in length to the petals, inserted around the base of a very minute gynophore. Female flowers. Ovaries 5, seated on an equal 5-lobed gynophore, which is surrounded at the base by short hairy scales, or abortive stamens. Styles 5, short, distinct at the base, but connected in one at the top, crowned by a single 5-lobed stigma. Fruit 5, drupaceous.—Trees with alternate, pinnate leaves, and alternate, quite entire leaflets, which are shining above. Racemules furnished each with a bractea-like leaf, disposed in axillary and terminal panicles; pedicels furnished with bracteas. Flowers small, hoary, or greenish, with their edges sometimes purple. Leaves, wood, bark, and root intensely bitter.

1 S. officina'lis (D. C. in annal. mus. 17. p. 424. no. 1.) flowers monoecious; male ones decandrous; stigma 5-lobed; leaves abruptly pinnate; leaflets on short petioles, pubescent beneath. ♄. S. Native of South America, particularly in Guiana, Cayenne, and some of the West India islands, in sandy places. Quássia Simarùba, Lin. suppl. 234. Woodv. med. bot. t. 76. Lam. ill. t. 343. f. 2. Simarùba amàra, Aubl. guian. t. 331. Flowers small, yellowish-white, monoecious, but some authors say dioecious. The tree is known in Jamaica by the names of *Bitter Damson*, *Mountain Damson*, and *Slave-wood*. Simarouba or Simaruba, in Materia Medica, is the bark of the roots of this tree; it was first imported into Europe in 1713. This bark, according to Dr. Wright's account of it, is rough, scaly, and warted, the inside, when fresh, is a full yellow, but when dry paler; it has but little smell; the taste is bitter, but not disagreeable. Macerated in water, or rectified spirits, it quickly impregnates both menstrua with its bitterness, and with a yellow tincture. It seems to give out its virtue more perfectly to cold than to boiling water; the cold infusion being rather stronger in taste than the decoction, which last is of a transparent yellow colour whilst hot, grows turbid and of a reddish-brown as it cools. The milky appearance, which Jussieu says it communicates to boiling water, Dr. Wright has not observed in the decoction of any of the specimens he has examined.

The bark was first sent from Guiana to France in 1713, to the Count de Pornchartrain, then secretary of state, as a remedy of great efficacy in dysentery. In the years 1718 and 1723, an epidemic flux prevailed very generally in France, which resisted all the medicines usually employed in such cases; small doses of ipecacuanha, mild purgatives, and all astringents, were found to aggravate, rather than to relieve, the disease; under these circumstances, recourse was had to the *cortex-simaruba*, which proved remarkably successful, and first established its medical character in Europe. Dr. Wright says, " most authors, who have written on the *Simarùba* agree, that in fluxes it restores the lost tone of the intestines, allays their spasmodic motions, promotes the secretions by urine and perspiration, removes the lowness of the spirits attending dysenteries, and disposes the patient to sleep; the gripes and tenesmus are taken off. In a moderate dose it occasions no disturbance or uneasiness, but in large doses it produces sickness at the stomach, and vomiting."

Modern physicians have found from experience, that this medicine is only successful in the third stage of dysentery, where there is no fever, where too the stomach is no way hurt, and where the gripes and tenesmus are only continued by a weakness of the bowels. In such cases Dr. Munro gave two or three drops of laudanum, and found it a very useful remedy. The late Sir J. Pringle, Dr. Huck Saunders, and many others prescribed the *Cortex-simaruba* in old and obstinate dysenteries and diarrhœas, especially those brought from warm climates. Fluxes of this sort, which were brought home from the siege of Martinique and the Havannah, were completely and speedily cured by this bark. Dr. James Lind, at Haslar Hospital, says that the *Cortex-simaruba* produced these effects sooner and more certainly than when given in such quantity as to nauseate the stomach. Dr. Huck Saunders remarks, that if the *Simarùba* did not give relief in three days, he expected little benefit from its further use; but others have found it efficacious in fluxes, after a continued use for several weeks. Sir James Smith's own experience convinces him of the efficacy of this medicine, and he hopes that the *Simarùba-bark* will soon be more generally used than it is.

Dr. Wright recommends two drachms of the bark to be boiled in twenty-four ounces of water to twelve; the decoction is then to be strained, and divided into three equal parts, the whole of which is to be taken in twenty-four hours, and when the stomach is reconciled to this medicine, the quantity of the bark may be increased to three drachms. To this decoction some join aromatics, others a few drops of laudanum to each dose.—Dr. Cullen says, that the virtues ascribed to *Simarùba* have not been ascertained by his own experience, or that of the practitioners of Scotland. Woodv. med. bot. It is given in powder, in doses of half a drachm or a whole drachm; but it is too bulky and very difficultly pulverizable. It is best exhibited in decoction. Two drachms of the bark may be boiled in two pounds of water to one, and the decoction drunk in cup-fulls in the course of the day. (Duncan, edin. disp. p. 452.)

Officinal Simaruba. Clt. 1789. Tree 60 feet.

2 S. glau'ca (D. C. in ann. mus. 17. p. 324. no. 2.) flowers monoecious; male ones decandrous; stigma 5-parted; leaves abruptly-pinnate; leaflets on short petioles, smooth, glaucous. ♄. S. Native of the Island of Cuba, by the sea-side. H. B. et Kunth, nov. gen. amer. 6. p. 16. This species is usually confused with the preceding. The glutinous juice of the bark is exhibited in cutaneous diseases.

Glaucous-leaved Simaruba. Tree 40 feet.

3 S. exce'lsa (D. C. in ann. mus. 17. p. 424. no. 3.) flowers polygamous, pentandrous, panicled; stigma trifid; leaves impari-pinnate; leaflets opposite, stalked. ♄. S. Native of Jamaica, in woods on the lower mountains, and of other West India islands. Quássia excélsa, Swartz in act. holm. 1788. p. 302. t. 8. Quássia polýgama, Wright in edinb. phil. trans. vol. 3. According to the specific character, this plant will probably constitute a distinct genus. The tree is lofty, with a very straight trunk; the wood whitish, moderately close-grained, very bitter, frequently sold by the druggists for the *Quássia amàra*, and found useful in intermittent fevers, debility of the stomach, worms, dropsy, and chlorosis. The wood is also used for making cabinets, for preserving insects, or other natural curiosities; being supposed inaccessible to insects and worms. Clusters panicled, bearing numerous small pale-flowers, some male, the rest hermaphrodite.

Lofty Simaruba. Clt. 1818. Tree 60 feet.

4 S. versi'color (St. Hil: pl. usu. bras. no. 5. and fl. bras. 1. p. 70.) flowers dioecious, decandrous, in loose terminal panicles; leaflets elliptical-oblong, very blunt, retuse, with the mid-rib pubescent. ♄. S. Native of Brazil, in the province of Minas Geraes, where it is called *Paraiba*. Quássia versícolor, Spreng. syst. app. p. 163. Petals greenish-yellow, with purple edges. The inhabitants of the Rio St. Francisco regard the bark as very bitter. It is employed with great success in curing the bites of serpents. It is also used to cure pediculous diseases, both in men and horses.

Party-coloured-flowered Simaruba. Tree 30 feet.

Cult. See *Quássia* for culture and propagation, p. 810.

III. SIMA'BA (the name of *S. Guianénsis* in Guiana). St. Hil. bull. phil. 1823. p. 129. D. C. prod. 1. p. 733. Andr. Juss. in mem. mus. 12. p. 515. t. 27. no. 45. Simàba et Arùba,

Aubl. guian. 1. p. 400 and 293. Zwingèra, Schreb. gen. no. 1752. Phyllostémma, Neck.—Quássia species, Rich.

Lin. syst. *Octo-Decándria, Monogýnia.* Flowers hermaphrodite. Calyx small, 4-5-parted, cleft or toothed. Petals 4-5, broad at the base, spreading, much longer than the calyx. Stamens 8-10, a little shorter than the petals. Ovaries equal in number to the petals, rarely fewer, seated on an equal or broader gynophore. Styles 4-5, distinct at the base, but connected at the top, terminated by a single 4-5-lobed, toothed, or furrowed stigma. Fruit 4-5, drupaceous; drupes usually dry, 1-seeded. —Trees or shrubs, with alternate, ternate, abruptly or impari-pinnate leaves, sometimes, but seldom, simple, on the same branch; leaflets opposite, rarely subalternate, quite entire, for the most part coriaceous, shining, seldom pubescent. Flowers whitish, greenish, or somewhat yellowish flesh-coloured, axillary, but usually terminal, racemose or panicled; pedicels furnished with bracteas. Bark, leaves, and fruit bitter.

1 S. Guiane'nsis (Aubl. guian. 1. p. 400. t. 153.) leaves impari-pinnate, with 1 or 2 pairs of oval-oblong leaflets, taper-pointed at both ends, and emarginate at the apex; racemes axillary. ♄. S. Native of Guiana, in woods. Zwingèra amàra, Willd. spec. 2. p. 569. Flowers white, usually 4-cleft. The bark of this tree is bitter, and most probably possesses the same medicinal qualities as *Quássia amàra*, and *Simarùba excélsa*.

Guiana Simaba. Fl. June. Clt. 1826. Shrub 8 feet.

2 S. Orinoce'nsis (H. B. et Kunth, nov. gen. amer. 6. p. 18. t. 514. *a* et b.) leaves sometimes trifoliate, with the leaflets rising sometimes from the top of the petiole, sometimes abruptly pinnate, with 1-3 pairs of oblong obtuse leaflets; racemes terminal. ♄. S. Native on the banks of the Orinoco, near Carichana.

Orinoco Simaba. Clt. 1818. Tree 20 feet.

3 S. floribu'nda (St. Hil. bull. phil. 1823. p. 129. pl. rem. bras. 1. p. 126. t. 10.) leaves impari-pinnate; leaflets lanceolate-elliptical, oblong, bluntish, smooth; panicle large, compound. ♄. S. Native of Brazil, in the province of Minas Novas.

Bundle-flowered Simaba. Shrub.

4 S. suave'olens (St. Hil. in bull. philom. p. 12. pl. rem. bras. 1. p. 128. t. 11. A.) leaves abruptly-pinnate, upper ones sometimes trifoliate and simple; leaflets elliptical or roundish-elliptical, smooth; flowers terminal, racemose; racemes compound. ♄. S. Native of Brazil, in the province of Minas Geraes.

Sweet-scented Simaba. Fl. March. Shrub.

5 S. ferrugi'nea (St. Hil. l. c. and pl. rem. bras. 1. p. 127. fl. bras. 1. p. 72. t. 14.) leaves impari-pinnate; leaflets elliptical, pubescent, nerved beneath; panicle compound, almost sessile, shorter than the leaves. ♄. S. Native of Brazil, in the province of Minas Geraes. Branches and leaves clothed with rusty pubescence.

Rusty Simaba. Fl. Sept. Tree 20 feet.

6 S. trichilioìdes (St. Hil. l. c. and pl. rem. bras. 1. p. 129. t. 11. B.) leaves impari-pinnate or abruptly pinnate; leaflets elliptical, very blunt, mucronulate at the apex, nerved, pubescent above, and somewhat tomentose beneath; panicle simple, much longer than the leaves, clothed with rufous down. ♄. S. Native of Brazil, in the province of Minas Geraes.

Trichilia-like Simaba. Fl. May. Shrub 8 feet.

7 S. Aru'ba (St. Hil. mss.) leaves trifoliate; leaflets lanceolate, acuminated; racemes terminal. ♄. S. Native of French Guiana. Arùba Guianénsis, Aubl. guian. 1. p. 293. t. 115. Flowers greenish, of 5 or 6 petals. Calyx 5-6-parted. Ovaries 3-6. Stamens 5-8.

Aruba Simaba. Fl. July. Shrub 6 feet.

Cult. The species of this genus are only worth cultivating on account of their medical properties; a mixture of light turfy loam and peat suits them well, and ripened cuttings will root if planted in a pot of sand with a hand-glass placed over them, in heat.

IV. SAMADE'RA (meaning unknown). Gært. fruct. 2. p. 352. t. 156. Andr. Juss. in mem. mus. 12. p. 516. t. 27. no. 46.—Samandùra, Lin. fl. zeyl.—Locándra, Adans.—Vittmánnia, Vahl. symb. 3. p. 51. t. 62.—Niòta, Lam. ill. t. 299. D. C. prod. 1. p. 592. but not of Adans. Biporèia, Pet. Th. gen. mad. p. 14.—Mauduíta, Comm. mss.

Lin. syst. *Octándria, Monogýnia.* Flowers hermaphrodite. Calyx short, 4-parted. Petals 4, much longer than the calyx. Stamens 8, shorter than the petals. Ovaries 4, seated on a narrower, short, stipe-like gynophore. Styles 4, distinct at the base, but connected in one at the apex, much longer than the petals, ending in a single acute stigma. Fruit 4, connected into one drupe.—Trees, with alternate, simple, veiny leaves. Peduncles axillary or terminal, pendulous, terminating in a 5-12-flowered umbel, involucrated, with minute bracteas at the base. Flowers largish, white outside, and blood-coloured on the inside. Divers parts bitter. A fifth part is sometimes added to the flower.

1 S. tetrape'tala; flowers 4-petalled, octandrous; leaves oblong, obtuse, somewhat coriaceous; pericarp compressed, capsule-like; peduncles few-flowered. ♄. S. Native of Madagascar. Niòta tetrapétala, Lam. ill. t. 299. S. Madagascariénsis, Andr. Juss. l. c. Mauduíta penduliflòra, Comm. ined. Vittmánnia ellíptica, Vahl. symb. 3. p. 51. t. 62. Peduncles lateral, bearing at the apex 5 or 6 1-flowered pedicels, disposed in an umbel.

Four-petalled Samadera. Shrub 10 feet.

2 S. pentape'tala; flowers 3-5-petalled, but usually 4-petalled, with an equal number of stamens; peduncles many-flowered, umbellate; pericarp very thick, drupe-like. ♄. S. Native of the East Indies, particularly of Malabar. Niòta pentapétala, Poir. dict. 4. p. 490.—Karin-njotti, Rheed. mal. 6. t. 18. Fruit intensely bitter, as well as the bark.

Five-petalled Samadera. Tree 40 feet.

Cult. See *Simàba* for culture and propagation.

V. NI'MA (the name of the tree in Nipaul). Hamilt. mss. in D. Don, prod. fl. nep. p. 248. Andr. Juss. in mem. mus. 12. p. 516. Simàba spec. D. Don, l. c.

Lin. syst. *Pentándria, Pentagýnia.* Flowers hermaphrodite. Calyx 5-parted, permanent. Petals 5, oblong. Stamens 5; filaments dilated at the base. Ovaries 5, connected together, pilose, seated on the thick disk beneath the petals. Styles 5, connected at the base, but distinct and revolute at the apex, each terminated by a stigma. Capsules 5, or fewer from abortion, roundish, 1-seeded. Embryo large, without albumen.—A tree, with alternate impari-pinnate leaves, having 4 pairs of serrated leaflets. Flowers disposed in panicled corymbs.

1 N. quassioìdes (Hamilt. mss.) ♄. G. Native of Nipaul, in a valley near the town called Thankot. Leaflets elliptical-oblong, acuminated, serrated. Corymbs trichotomous. Simàba quassioìdes, D. Don, prod. fl. nep. p. 248.

Quassia-like Nima. Fl. April. Tree.

Cult. See *Simàba* for cultivation and propagation.

VI. HARRISO'NIA (named after some botanist of the name of Harrison). R. Br. mss. Andr. Juss. in mem. mus. 12. p. 517. no. 47.

Lin. syst. *Octándria, Monogýnia.* Flowers hermaphrodite. Calyx short, 4-cleft. Petals 4, much longer than the calyx. Stamens 8; filaments each inserted on the back of a bifid, fringed scale. Ovary simple, tapering to the base into a stipe, 4-lobed

at the apex, 4-celled, each cell containing 1-ovula. Style rising from between the lobes of the ovary, divided in 4 at the base, but at length simple, terminated by a blunt stigma, which is obscurely 4-furrowed. Fruit baccate, globose, 4-lobed, 4-celled; each cell containing one seed, sometimes sterile. Seed subglobose, pendulous from the apex of the cell, having a double integument, marked at the hilum. Embryo green, with twisted cotyledons, without albumen.—A shrub, with alternate leaves, those at the top of the branches are simple, the rest are ternate; leaflets toothed at the base, lateral ones smallest, and unequal. Peduncles axillary, solitary, simple at the base, but divided at the top into a corymb; pedicels furnished with twin bracteas. Prickles scattered on the branches, rarely twin at the base of the petioles.

1 H. BRÓWNII (Andr. Juss. in mem. mus. 12. t. 28. no. 47.) ♄. S. Native of the island of Timor.

Brown's Harrisonia. Shrub 10 feet.

Cult. See *Simàba* for culture and propagation.

ORDER LXI. DIPTEROCA'RPEÆ (plants agreeing in character with *Dipterocárpus*). Blum. fl. jav. vol. 1. p. 1.—Guttiferàrum sectio Colebr. in asiat. res. 12.—Tiliàceæ, Spreng.

Calyx of 5 leaflets or segments, for the most part concrete at the base (f. 125. *a.*), rarely free, valvate or imbricate in æstivation. Petals 5 (f. 125. *b.*), hypogynous, joined into a subrotate corolla, twisted in æstivation (f. 125. *d.*). Stamens usually indefinite (f. 125. *c.*), hypogynous, free or connected a little at the base, sometimes irregularly polyadelphous; filaments dilated at the base; anthers erect, elongated (f. 125. *c.*), awl-shaped, 2-celled, bursting at the apex by 2 pores. Ovary one, free, few-celled; cells 2-ovulate. Ovulæ pendulous, fixed to the inner angle of the cells. Style 1, undivided, crowned by a simple stigma. Fruit girded by a thick corticate pericarp (f. 125. *e.*), and by a more or less extended calyx (f. 125. *f.*), 1-celled and 1-seeded from abortion, 3-valved, indehiscent. Seeds without albumen, umbilicate at the base. Embryo with chrysalis-like contortuplicate, or unequally and obliquely incumbent cotyledons, and an inferior or superior radicle.—Elegant trees, full of resinous turbid juice. Leaves stalked, alternate, entire, feather-nerved, articulately inserted, involute before expansion. Stipulas oblong, deciduous, convolute, as in *Ficus*, and therefore the branches are terminated by a conical acumen, which at length divides and falls off. Peduncles racemose, axillary, near the tops of the branches, or constituting a terminal racemose panicle. Flowers yellow or white, mixed with red. This order agrees with *Ochnàceæ* in the anthers being terminated by a beak, and opening by two pores, by their unilocular fruit, by the absence of albumen, and lastly by their alternate leaves, furnished with membranous caducous stipulas. The order is remarkable for containing the camphor tree of Sumatra, and many others of the species produce camphor, although of an inferior quality.

Synopsis of the Genera.

§ 1. *Radicle superior.*

1 DIPTEROCA'RPUS. Calyx 5-cleft (f. 125. *a.*), 2 of the segments are very large, long, and opposite (f. 125. *f.*). Petals 5 (f. 125. *b.*). Stamens numerous (f. 125. *c.*). Anthers long, linear (f. 125. *c.*). Fruit 1-seeded (f. 125. *e.*).

2 SHÒREA. Calyx of 5 sepals, all of which are extended into wings. Petals 5. Stamens 25-30. Anthers short. Fruit 1-seeded.

3 DRYOBA'LANOPS. Calyx 5-cleft, all the segments growing into broad reflexed wings. Petals 5. Anthers? Fruit 1-seeded.

4 HÒPEA. Calyx of 5 sepals, 2 of them lengthened into wings. Corolla 5-cleft. Stamens 10, inserted in the tube of the corolla, alternate ones bearing 2 anthers each. Anthers short. Capsule 1-seeded.

5 VATE'RIA. Calyx 5-cleft. Petals 5. Stamens 40-50. Anthers long, linear. Capsule 1-seeded.

§ 2. *Radicle inferior.*

6 LOPHÌRA. Calyx of 5 sepals, 3 small, and one very long, large, and strap-shaped, the one opposite this is 3 times smaller. Petals 5. Stamens numerous. Anthers linear? Fruit 1-seeded.

§ 1. *Dipterocárpæ. Radicle superior.*

I. DIPTEROCA'RPUS (from δις, *dis*, twice, and πτερυξ, *pteryx*, a wing, and καρπος, *karpos*, a fruit; in allusion to two of the segments of the calyx being extended into long wings (f. 125. *f.*). Gært. fruct. suppl. p. 50 and 52. Roxb. cor. 3. p. 10. Blum. fl. jav. vol. 1. Pterýgium, Corr. in ann. mus. 8. p. 397 and 398.

LIN. SYST. *Polyándria, Monogýnia.* Calyx irregularly 5-cleft (f. 125. *a.*), 2 of the segments are extended into long and ligulate wings (f. 125. *f.*). Petals 5 (f. 125. *b.*), convolute in æstivation (f. 125. *d.*). Anthers long, linear (f. 125. *c.*). Fruit rather woody (f. 125 *e.*), 1-celled, 1-seeded from abortion. Cotyledons leafy, contortuplicate. Large trees, containing resinous juice. Flowers shewy white, mixed with red.

1 D. TRINE'RVIS (Blum. fl. jav. 1. p. 11. t. 1. bijdr. 223.) leaves oval, acutish, rounded at the base, and are, as well as the linear attenuated buds, smooth; the two largest segments of the calyx very long, oblong-lanceolate, and obtuse. ♄. S. Native of Java.

Var. β, élegans (Blum. l. c.) leaves subcordate at the base, longer than the buds.

Var. γ, canéscens (Blum. l. c.) leaves smaller, hoary on the rib beneath; racemes elongated.

Three-nerved-leaved Dipterocarpus. Tree 150 to 200 feet.

2 D. RETU'SUS (Blum. fl. java, 1. p. 4. t. 2. bijdr. 223.) leaves oval, acute, pubescent on the rib beneath, as well as the petioles and branches; buds conically-subulate, villous; the 2 largest segments of the calyx oblong and retuse. ♄. S. Native of Java.

Retuse-winged Dipterocarpus. Tree 100 feet.

3 D. SPANO'GHEI (Blum. fl. jav. 1. p. 16. t. 3.) leaves ovate, bluntish, rounded at the base, pubescent on the ribs beneath, as well as the petioles and branches; buds conical, attenuated, villous; the 2 longest segments of the calyx oblong and obtuse. ♄. S. Native of Java.

Spanoghe's Dipterocarpus. Tree 100 feet.

4 D. LITTORA'LIS (Blum. fl. jav. 1. p. 17. t. 4. bijdr. 224.) leaves oval, acute, subcordate at the base, pubescent on the ribs; buds conically-oblong, silky-villous; the 2 longest segments of the calyx lanceolate and obtuse. ♄. S. Native of Java.

Shore Dipterocarpus. Tree 80 feet.

5 D. GRA'CILIS (Blum. fl. jav. 1. p. 20. t. 5. bijdr. 224.) leaves oval-oblong, acute, obtuse at the base, covered with stel-

late pubescence beneath; buds linear, tomentose; the 2 longest segments of the calyx obtuse. ♄. S. Native of Java.

Slender-budded Dipterocarpus. Tree 100 to 150 feet.

6 D. TURBINA'TUS (Roxb. cor. 3. p. 10. t. 213.) leaves ovate-oblong, entire or serrated, smooth and shining, acute, but rounded at the base; buds conically-lanceolate, downy; the 2 longest segments of the calyx lanceolate, obtuse. ♄. S. Native of Chittagong, Tepperah, and Pegu, and the countries northward of Bengal. Flowers white. This tree is famous over the eastern parts of India and the Malay islands, on account of its yielding a thin liquid balsam, commonly called *Wood-oil*, which is much used for painting ships and houses in India. A large notch is cut into the trunk of the tree near the earth, where a fire is kept until the wound is charred, soon after which the liquid begins to ooze out. A small gutter is cut in the wood to conduct the fluid into a vessel placed to receive it. These operations are performed during the months of November, December, January, and February; and should any of the trees appear sickly the following season, one or more years' respite is given them.

FIG. 125.

Turbinate Dipterocarpus. Tree 100 to 150 feet.

7 D. ALA'TUS (Roxb. hort. beng. 42.) leaves ovate-elliptic, tapering to both ends, pubescent on both surfaces as well as the branches and petioles; the 2 large segments of calyx lanceolate and obtuse. ♄. S. Native of Pegu.

Winged Dipterocarpus. Tree 100 feet.

† *Species only known by name from Roxburgh's hortus bengalensis, p. 42. and p. 93.*

8 D. COSTA'TUS (Roxb. l. c. p. 42.) ♄. S. Native of Chittagong.

9 D. INCA'NUS (Roxb. l. c.) ♄. S. Native of Chittagong.

10 D. TUBERCULA'TUS (Roxb. l. c. p. 93.) ♄. S. Native of Chittagong.

11 D. PILÒSUS (Roxb. l. c. p. 93.) ♄. S. Native of Mascal Island.

Cult. A mixture of loam, peat, and sand will suit these fine trees; and ripened cuttings will root if planted in a pot of sand with a hand-glass placed over them, in heat.

II. SHO'REA (named in honour of the Right Hon. Lord Teignmouth, late governor of Bengal). Gært. fruct. 3. p. 48. t. 186. Roxb. cor. 3. p. 10. t. 212.

LIN. SYST. *Polyándria, Monogýnia.* Calyx of 5 sepals, enlarging into 5 long wings. Petals 5, twisted in the bud, rather silky on the outside. Stamens 25-30, lower half broad and membranous. Anthers short. Fruit 1-celled, 3-valved, 1-seeded. Cotyledons fleshy, stalked, obliquely incumbent.—A large tree, with panicles of yellow flowers.

1 S. ROBU'STA (Roxb. l. c.) leaves cordate, oblong, entire, smooth, on short petioles; calyx pubescent, as well as the branches of the panicle. ♄. S. Native of the skirts of the northern mountains of India. The wood of this tree is in very general use near Bengal for beams, rafters, and various economical purposes; it is of an uniform light-brown colour, close grained, and heavy, but at the same time it does not appear to be very durable, and on that account greatly inferior to teak, but in strength it certainly surpasses it, and deserves to be considered the second timber tree of India, as the teak is considered the first. This tree yields large quantities of a resin commonly called *Dammer* in India, which is very generally used as a substitute for pitch in the marine yard. The best pieces are commonly used instead of the common incense (Benzoin) in the temples of the Hindoos.

Robust Shorea. Tree 100 to 150 feet.

2 S. ROXBU'RGHII; smooth; leaves coriaceous, oval, rather emarginate at the point; calyx smooth, as well as branches of panicle. ♄. S. Native of the East Indies. Differs from *S. robústa* in being smooth.

Roxburgh's Shorea. Tree 100 feet.

† *Species the names of which are only known from Roxburgh's hortus bengalensis.*

3 S. TUMBUGGA'IA (Roxb.) from Coromandel.

4 S. LONGISPE'RMA (Roxb.) from Prince of Wales Island.

5 S. TALU'RA (Roxb.) from Ballaghat?

Cult. See *Dipterocárpus* for culture and propagation.

III. DRYOBA'LANOPS (δρυον, *dryon*, a forest, and βαλανος, from βαλλω, *ballo*, to let grow, incense; the resin is used as incense). Gært. fruct.—Coleb. in asiat. res. 12. p. 535. with a figure.

LIN. SYST. *Polyándria, Monogýnia.* Calyx 5-cleft, all the segments growing into broad reflexed wings. Petals 5, convolute in the bud. Anthers? Fruit 3-valved, 1-celled, 1-seeded. Cotyledons fleshy, contortuplicate.—A large tree, with panicles of yellow flowers, and elliptic, obtusely acuminated, entire, coriaceous, shining leaves, lower ones opposite, on short stalks. Stipulas awl-shaped.

1 D. CA'MPHORA (Colebr. in asiat. res. l. c.) ♄. S. Native of Sumatra and Borneo. D. aromàtica, Gært. Shòrea camphorífera, Roxb. Camphor is extracted from the *Laúrus Cámphora*, with the aid of heat, but the natural camphor, in substance and of the greatest value, is furnished by this tree. Some of the trees are 6 or 7 feet in diameter, but it will produce camphor at a much earlier period, when the tree does not exceed 2 or $2\frac{1}{2}$ feet in diameter. The same tree which yields oil would have produced camphor if unmolested, the former being supposed to be the first stage of the latter forming, and is consequently found in younger trees. The natives have no certain means of ascertaining the tree which produces either the one or the other, although there are some men, styled Toongoo Nyr Cappoor, who pretend to that knowledge, but they cannot give any reason for their judgment, beyond favourable dreams which superstition has rendered infallible; but it must be admitted that this description of people succeed better than others who go in search of camphor. Both oil and camphor are found in the heart of the tree, occupying a vacuum, which in others is frequently filled with pitch; but it does not extend to the whole length, on the contrary they are found in small portions of a foot and a foot and a half long at certain distances. The method of extracting the oil is merely by making a deep incision with a Malay axe in the tree about 18 inches from the ground till near the heart, where a deeper incision is made, with a small aperture, and the oil, if any, in the tree gushes out, and is received in bamboos or any other utensil; in this manner a party proceeds through the woods wounding the camphor trees, till they attain their object. The camphor is pretty nearly obtained in the same way. The trees are cut to the heart about the same height from the ground, as in the former instance, till the camphor is seen; hundreds may be thus mutilated before the sought for tree is discovered. When attained, it is felled, and cut into junks of a fathom long, which are again split, and the camphor is found in the heart, occupying a space in circumference of the thickness of a man's

arm. The produce of a middle-sized tree is about 11 pounds, and of a large one double that quantity. The camphor thus found is called Se Tantong. It is often the case that the trees which have been thus cut, and left standing in that state, in 7 or 8 years after will again produce camphor, which is distinguished by the name of Oogar, but is inferior in appearance to the first, though of the same quality. The sorts of camphor called belly and foot are the scrapings of the wood which surrounds it. The camphor obtained from this tree is much more pure than that obtained from any other plant. Camphor is also obtained from the roots of the *Cinnamon*, *Alpìnia*, *Galánga*, *Amòmum Zedoària*, and several other plants; but as the *Laúrus Cámphora* furnishes nearly all the camphor of the shops, we shall give the qualities and uses of camphor more particularly under that head.

Sumatra *Camphor*-tree. Tree 100 feet.

Cult. See *Dipterocárpus* for culture and propagation.

IV. HO'PEA (in honour of John Hope, M.D. once professor of botany at Edinburgh, who died in 1786; he was one of the earliest lecturers on vegetable physiology, as well as a profound practical botanist). Roxb. cor. 3. p. 9. t. 210.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 5 sepals, 2 of which are extended into wings. Corolla 5-cleft, convolute in æstivation. Stamens 10, inserted in the throat of the corolla, alternate ones bearing each 2 anthers. Anthers short. Fruit of a tender texture, 1-celled, 1-seeded.—A large tree, with terminal panicles of small, fragrant, yellow flowers.

1 H. odora'ta (Roxb. l. c.) ♄. S. Native of Chittagong. Leaves on short stalks, ovate-oblong, shining, bifarious, waved, smooth, of a deep green. Flowers secund along the ramifications of the panicle.

Sweet-scented Hopea. Tree 80 feet.

† *Species only known by name from Roxb. hort. beng. p. 42. and 93.*

2 H. Sca'phula (Roxb. hort. beng. p. 93.) ♄. S. Native of Mascal Island.

3 H. eglandulòsa (Roxb. l. c. p. 42.) ♄. S. Native of Tipperah.

Cult. See *Dipterocárpus* for propagation and cultivation.

V. VATE'RIA (in honour of Abraham Vater, once professor of medicine at Wirtemberg, author of some botanical dissertations on the balsam of Mecca; he died in 1751). Lin. gen. 269. Roxb. cor. 3. p. 86. t. 288.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx 5-cleft; segments at length reflexed. Petals 5, oval, emarginate, twisted in the bud. Stamens 40-50, short, inserted between the petals and the base of the germ. Anthers long, linear. Capsule 3-valved, 1-celled, and 1-seeded. Cotyledons stalked.—Large trees, with entire, smooth, coriaceous leaves, and terminal panicles of white flowers. Anthers yellow.

1 V. I'ndica (Lin. spec. 734. Roxb. cor. l. c.) leaves oblong; flowers rather remote on the ramifications of the panicle; stipulas oblong. ♄. S. Native of Malabar. Elæocárpus copallíferus, Retz, obs. fasc. 4. p. 27.—Rheed. mal. 4. p. 33. t. 15. In the Bidinose country this tree is called *Dammer-tree*. When wounded it discharges a clear, pellucid, fragrant resin, acrid and bitter to the taste, at length becoming yellow and brittle like glass. This, according to König, is one kind of copal. Persons experienced in the use of this gum, so useful for varnishing anatomical preparations, know that there are several different things imported under the same name, which are not all equally soluble even in oil of lavender. The true gum copal is not from this tree, but it generally goes under that name in India; the best specimens of the gum are employed as ornaments under the name of amber (Kahroba), to which it bears exterior resemblance. In its recent and fluid state it is used as a varnish in the south of India, and dissolved by heat in closed vessels it is employed for the same purpose in other parts of India.

Indian Copal-tree. Tree 80 feet.

2 V. lanceæfòlia (Colebr. asiat. res. 12. p. 538.) leaves lanceolate. ♄. S. Native of the East Indies. This tree affords a resin, from which, as from other resins, the Indians prepare one of the materials of their religious oblations.

Lance-leaved Copal-tree. Tree 60 feet.

Cult. See *Dipterocárpus* for cultivation and propagation.

§ 2. *Lophìræ. Radicle inferior.*

VI. LOPHI'RA (from λοφος, *lophos*, a crest; in allusion to one of the sepals being extended out into a ligulate wing or crest). Gært. fruct. 3. p. 52 and 53. t. 188. Pers. ench. 2. p. 80.

Lin. syst. *Polyándria*, *Monogýnia*. Calyx of 5 sepals, 3 of which are very small, one very large, and ligulate with the one opposite it, 3 times smaller than it. Corolla of 5 petals. Stamens numerous. Anthers short? Fruit 1-celled, 1-seeded, indehiscent, fleshy, soft.—Shrubs and trees, with long leathery pale-green leaves, resembling those of *Theophrásta*, with terminal and axillary short racemes of white flowers.

1 L. Africa'na (Gært. l. c.) leaves long-lanceolate, emarginate. ♄. S. Native of Sierra Leone, very common in dry places near Freetown, where it is called *Scurby* or *Scruby oak*. A small branching tree.

African Scruby-oak. Fl. Feb. Clt. 1822. Tree 10 to 15 ft.

2 L. si'mplex; leaves long, lanceolate, obtuse at the apex. ♄. S. Native of Sierra Leone, on the mountains. This tree grows with a tall, straight, slender trunk, without branches, but with a tuft of leaves at the apex.

Simple-stemmed Scruby-oak. Tree 30 feet.

Cult. A mixture of loam and sand will suit these fine trees. The species have got tap roots, therefore they should be planted in as deep pots as possible, in order to give room to the roots to descend, or they will not live; at the same time they require to be kept rather dry. Ripe cuttings will probably root in sand under a hand-glass, in heat.

Cohort IV. *Fruit gynabasic, inserted in a fleshy receptacle, with which the style is continuous.*

Order LXII. OCHNA'CEÆ (plants agreeing with *Ochna* in important characters). D. C. ann. mus. 17. p. 398. rec. mem. 1813. no. 5. D. C. prod. 1. p. 735.

Calyx of 5 sepals, which are hardly connected at the base, permanent (f. 126. *b.*), imbricate in the bud. Petals 5, hypogynous (f. 126. *d.*), caducous alternating with the sepals, rarely 10, spreading, imbricate in the bud. Stamens 5, alternating with the petals, or 10, or indefinite (f. 126. *c.*), inserted in the hypogynous disk, usually permanent; anthers bilocular, inserted by the base. Ovaries equal in number to the petals. Style 1, filiform, permanent, widened at base, bearing the ovaries on the subglobose fleshy disk (f. 126. *e.*) called a gynobase. Carpels 1-seeded, indehiscent, inserted round the base of the style in a whorl (f. 126. *b.*), somewhat drupaceous. Seeds without albumen. Embryo straight, with a short radicle, and 2 thick cotyledons.—Tropical smooth trees and shrubs abounding in a watery juice. Leaves alternate, simple, feather-nerved, entire, or toothed, with 2 caducous stipulas at the base of each. Flowers

racemose, for the most part yellow; pedicels jointed in the middle or beneath the middle, rarely solitary. The roots and leaves of *Walkèra serràta* are used in Malabar in decoction, either in milk or water, as a tonic, stimulant, stomachic, and anti-emetic.

Synopsis of the genera.

1 O'chna. Petals 5-10. Stamens numerous; filaments filiform; anthers linear or ovate, bursting lengthwise by 2 chinks.

2 Go'mphia. Petals 5. Stamens 10; filaments almost wanting; anthers long, erect, bursting by 2 pores at the apex.

3 Walke'ra. Petals 5. Stamens 5. Anthers ovate.

4 Elva'sia. Sepals and petals 4. Stamens 8; filaments longish; anthers opening by 2 pores at the apex.

5 Caste'la. Calyx 4-toothed. Petals 4. Stamens 8. Anthers inverted.

I. O'CHNA (from *οχνη, ochne*, the Greek name for the wild pear; the present genus has some resemblance to a pear in foliage). Schreb. gen. no. 354. D. C. in mem. mus. 17. p. 410. prod. 1. p. 735.—O'chna, spec. Lin.

Lin. syst. *Polyándria, Monogýnia.* Petals 5-10. Stamens numerous; filaments filiform, permanent; anthers linear or ovate, opening from the base to the top by a double chink.—Buds scaly. Flowers all yellow, rising in racemes from below the leaves from the wood of the preceding year.

* *Stigmas capitate.*

1 O. obtusa'ta (D. C. in ann. mus. 17. p. 411. t. 1.) petals 8-10; leaves obovate, very blunt, serrated. ♄. S. Native of the East Indies. O'chna squarròsa, Lin. spec. 731.? Roxb. cor. t. 89. This tree is called *Bokaerae* in Ceylon, and *Yerrajuvre* by the Telingas. Flowers large, inodorous.

Obtuse-leaved Ochna. Fl. July, Aug. Clt. 1790. Tr. 12 ft.

2 O. lu'cida (D. C. l. c. no. 2.) petals 7-10; leaves obovate or oblong-ovate, acute, serrated. ♄. S. Native of the East Indies.

Var. α; leaves obovate. O. lùcida, Lam. ill. t. 472. f. 1.

Var. β; leaves oblong-ovate. O. squarròsa, Rottb. in act. dan. 2. p. 445. t. 6. exclusive of the synonyms.

Shining-leaved Ochna. Fl. July, Aug. Clt. 1819. Sh. 6 ft.

3 O. nítida (Thunb. prod. 67.) petals 5; leaves oblong, acute, serrated; racemes short, crowded. ♄. S. Native of the East Indies. D. C. l. c. no. 3. t. 2. Petals scarcely longer than the calyx.

Nitid-leaved Ochna. Clt. 1816. Shrub 6 feet.

4 O. multiflòra (D. C. l. c. no. 4. t. 3.) petals 5; leaves oval-oblong, acuminated, almost entire; racemes and pedicels very long. ♄. S. Native of Sierra Leone, in bushy places near the river-side, about Freetown.

Many-flowered Ochna. Fl. Feb. May. Clt. 1823. Sh. 6 ft.

5 O. cilia'ta (Lam. dict. 4. p. 511.) stigma a little lobed; petals 5; leaves oval-oblong, serrately-fringed; racemes short, few-flowered. ♄. S. Native of Madagascar.

Fringed-leaved Ochna. Shrub 6 feet.

6 O. atropurpu'rea (D. C. l. c. no. 5.) pedicels solitary, 1-flowered; petals 5? leaves ovate, acutely toothletted; lobes of calyx ovate. ♄. S. Native of the Cape of Good Hope.—Pluk. alm. t. 263. f. 1 and 2. Burch. cat. no. 4126. Calyx purple. Petals yellow.

Dark-purple-calyxed Ochna. Clt. 1816. Shrub 4 feet.

7 O. parvifòlia (Vahl. symb. 1. p. 33.) pedicels solitary, 1-flowered; leaves ovate, serrulated; petals 5? lobes of calyx oval-oblong. ♄. S. Native of Arabia Felix. D. C. l. c. no. 9. t. 19. Euónymus inérmis, Forsk. ægyp. t. 204.

Small-leaved Ochna. Shrub 5 feet.

8 O. lanceola'ta (Spreng. syst. 2. p. 597.) leaves lanceolate, crenated; peduncles usually solitary, shorter than the leaves. ♄. S. Native of Malabar.

Lanceolate-leaved Ochna. Shrub 6 feet.

9 O. pu'mila (Hamilt. in D. Don, prod. fl. nep. 224.) stigma capitate? flowers subumbellate, terminal; pedicels much longer than the peduncle, furnished with numerous bractea-like scales; stem simple, erect. ♄. G. Native of Nipaul, in a wood called Terriany.

Dwarf Ochna. Fl. Mar. Shrub 1 foot.

** *Stigmas many-parted.*

10 O. Mauritia'na (Lam. dict. 4. p. 522.) petals 5-6; leaves oblong-oval, acute, toothletted; petals 3-times longer than the calyx. ♄. S. Native of the Mauritius, where it is called *Bois de Jasmin.* D. C. l. c. no. 8. t. 5. Racemes short; pedicels long. An elegant shrub, with whitish flowers, resembling those of jasmine.

FIG. 126.

Mauritian Ochna. Clt. 1822. Shrub 6 feet.

11 O. Madagascarie'nsis (D. C. l. c. no. 7.) petals 5; leaves oblong, shining, a little serrated; petals equal in length to the calyx. ♄. S. Native of Madagascar. Racemes simple, many-flowered.

Madagascar Ochna. Shrub 6 feet.

12 O. arbo'rea (Burch. cat. ined. no. 4012. D. C. prod. 1. p. 736.) flowers solitary, or 2 or 3 in a raceme; petals 5; anthers linear, with 2 pores at the apex; leaves oval-oblong, almost entire. ♄. G. Native of the Cape of Good Hope.

Tree Ochna. Clt. 1823. Tree 20 feet.

Cult. Fine shrubs, bearing beautiful leaves and flowers, therefore the species are worth cultivating in every collection of stove plants. They will thrive well in a mixture of loam and peat; and cuttings will strike root if planted in a pot of sand, with a hand-glass placed over them, in a moderate heat.

II. GO'MPHIA (from *γομφος, gomphos*, a club; shape of fruit). Schreb. gen. p. 291. D. C. in mem. mus. 17. p. 414. prod. 1. p. 736.—Ochna species, Lin.

Lin. syst. *Decándria, Monogýnia.* Petals 5. Stamens 10; filaments almost wanting; anthers long, pyramidal, erect, opening at the apex by 2 pores.—Racemes simple or compound, terminal. Flowers of all yellow.

* *Leaves quite entire.*

1 G. grandiflòra (D. C. l. c. no. 19. t. 17.) leaves ovate-lanceolate, blunt at the base, long-acuminated; petals large, rather orbicular, a little longer than the calyx; racemes panicled. ♄. S. Native of Brazil at Rio Negro.

Great-flowered Gomphia. Shrub 4 feet.

2 G. aqua'tica (H. B. et Kunth, nov. gen. amer. 6. p. 14.) leaves oblong, acutish, rounded at the base, obsoletely veined; racemes elongated, almost simple; petals a little longer than the calyx. ♄. S. Native of South America, on the banks of the river Orinoco, near Javita. Cittorhynchus Javitènsis, Willd. herb.

Aquatic Gomphia. Tree 20 feet.

3 G. cassinefòlia (D. C. l. c. no. 21. t. 18.) leaves ovate,

somewhat cordate at the base, obtuse at the apex; racemes simple. ♄. S. Native of Brazil. Flowers yellow.

Cassine-leaved Gomphia. Shrub 6 feet.

4 G. laurifòlia (Swartz, fl. ind. occ. 2. p. 741.) leaves oblong, taper-pointed at both ends, shining. ♄. S. Native of Jamaica, on the mountains, and of Cayenne. Racemes panicled.

Laurel-leaved Gomphia. Clt. 1823. Shrub 8 feet.

5 G. oleæfòlia (St. Hil. bull. philom. 1823. p. 129.) leaves oblong-lanceolate, bluntish, pubescent, with revolute edges; flowers panicled; petals a little longer than the calyx. ♄. S. Native of Brazil. St. Hil. pl. rem. bras. 1. p. 124. t. 9.

Olive-leaved Gomphia. Shrub 10 feet.

6 G. longifòlia (D. C. l. c. no. 8. t. 10.) leaves lanceolate, acute, cordate at the base, very long, a little toothed at the apex; carpels globose; flowers crowded, panicled. ♄. S. Native of Guadaloupe. O'chna longifòlia, Lam. dict. 4. p. 511.

Long-leaved Gomphia. Shrub 6 feet.

7 G. Guiane'nsis (Rich. act. soc. nat. par. 1. p. 168.) leaves oblong, broad, blunt at both ends; carpels globose; racemes panicled; flowers crowded. ♄. S. Native of Guiana and Brazil. D. C. l. c. no. 7. t. 9. Ouratèa Guianénsis, Aubl. guian. 1. t. 152? Leaves a little serrated.

Guiana Gomphia. Shrub 6 feet.

8 G. obtusifòlia (D. C. l. c. no. 4. t. 8.) leaves lanceolate, very blunt, or emarginate at the apex, tapering to the base; stipulas intra-axillary, permanent; racemes panicled, with short somewhat angular branches. ♄. S. Native of Madagascar. O'chna lævigàta, Vahl. symb. 2. p. 49. O'chna obtusifòlia, Lam. dict. 4. p. 510.

Obtuse-leaved Gomphia. Shrub 6 feet.

9 G. parviflòra (D. C. l. c. no. 18. t. 16.) quite smooth; leaves oblong-lanceolate, acuminated, acute at both ends; panicle slender, rather loose, few-flowered; flowers small; petals oblong, a little longer than the calyx. ♄. S. Native of Brazil. Racemes panicled.

Small-flowered Gomphia. Shrub 6 feet.

* * *Leaves almost quite entire.*

10 G. parvifòlia (St. Hil. fl. bras. 1. p. 65.) leaves nearly sessile, small, ovate, very blunt at the base, hardly serrated at the apex, pubescent beneath as well as the branches and panicles; flowers crowded, bracteate; petals obovately orbicular. ♄. S. Native of Brazil, in the province of Minas Geraes.

Small-leaved Gomphia. Shrub 4 feet.

11 G. floribu'nda (St. Hil. fl. bras. 1. p. 64.) quite smooth; leaves crowded, imbricate, oblong, acutish at both ends, obsoletely serrated; racemes panicled, bracteate; flowers crowded; petals obovately-orbicular. ♄. S. Native of Brazil, in the province of Minas Geraes.

Var. β, màjor (St. Hil. l. c.) leaves longer and broader, less acute; flowers less numerous.

Bundle-flowered Gomphia. Shrub 3 to 4 feet.

12 G. suave'olens (St. Hil. fl. bras. 1. p. 63.) quite smooth; leaves oblong, acuminated, almost quite entire, nearly veinless; panicle terminal, compact; flowers very numerous, small; petals about the length of the calyx; anthers smooth. ♄. S. Native of Brazil. Flowers small, sweet-scented.

Sweet-scented Gomphia. Fl. March. Shrub 6 feet.

13 G. cuspida'ta (St. Hil. fl. bras. 1. p. 67.) quite smooth; leaves large, oblong, blunt, cuspidate, obsoletely serrated, lower ones quite entire; racemes terminal; anthers wrinkled transversely. ♄. S. Native of Brazil, in the province of Rio Janeiro.

Pointed-leaved Gomphia. Fl. Oct. Shrub 10 feet.

* * * *Leaves subserrated, serrated, toothed, and toothletted.*

14 G. Zeyla'nica (D. C. l. c. no. 1.) leaves oblong, acuminated at both ends, a little toothletted; racemes elongated; carpels globose. ♄. S. Native of Ceylon.—Burm. zeyl. 123. t. 26. O'chna Zeylánica, Lam. dict. 4. p. 612. In Ceylon this shrub is called *Bokæræ*.

Ceylon Gomphia. Clt. 1823. Shrub 5 feet.

15 G. depe'ndens (D. C. l. c. no. 2. t. 6.) leaves oblong-lanceolate, a little toothed, acuminated at both ends; stipulas intra-axillary, permanent; racemes very long, simple, dependent. ♄. S. Native of Madagascar.

Dependent-racemed Gomphia. Shrub 6 feet.

16 G. angula'ta (D. C. l. c. no. 3. t. 7.) leaves oblong, somewhat cuneated, narrow at the base, and a little cordate, distantly serrated, on very short stalks; stipulas intra-axillary, permanent; racemes panicled; branches angular. ♄. S. Native of Madagascar.

Angular-branched Gomphia. Shrub 6 feet.

17 G. Malaba'rica (D. C. l. c. no. 5.) leaves oval-oblong, acute at both ends, toothletted, nerveless, shining; racemes panicled. ♄. S. Native of Malabar, on rocks about Kandenate.—Rheed. mal. 5. t. 52.

Malabar Gomphia. Shrub.

18 G. Sumatra'na (Jack, mss. Hook. bot. misc. 4th part. p. 77.) leaves lanceolate, or oblong-oval, acuminated, obtusely denticulated, shining, somewhat 5-nerved; stipulas intra-petiolar, deciduous; panicle terminal. ♄. S. Native of Sumatra.

Sumatra Gomphia. Shrub 8 feet.

19 G. angustifòlia (Vahl. symb. 2. p. 49.) leaves lanceolate, almost sessile, serrated at the apex, acute at both ends; petals longer than the calyx; lobes of calyx roundish. ♄. S. Native of the East Indies.

Narrow-leaved Gomphia. Shrub 4 feet.

20 G. castaneæfòlia (D. C. l. c. no. 9. t. 11.) leaves large, oblong, acuminated, coriaceous, shining, regularly and sharply serrated; racemes panicled; flowers crowded; petals a little longer than the calyx. ♄. S. Native of Brazil.

Chesnut-leaved Gomphia. Shrub 10 feet.

21 G. ilicifòlia (D. C. l. c. no. 10.) leaves oval-oblong, bearing on their edges a few large, spiny teeth; racemes panicled. ♄. S. Native of St. Domingo.

Holly-leaved Gomphia. Shrub.

22 G. Jabota'pita (Swartz, fl. ind. occ. 2. p. 740.) leaves ovate-lanceolate, tapering to both ends, serrated from the base to the top; petals 3-times longer than the calyx; carpels with their base immersed in the receptacle. ♄. S. Native of the Caribbee Islands. O'chna Jabotápita, Lin. spec. 731. Lam. ill. 472. f. 2.—Plum. amer. 42. icon. 153. Flowers very sweet, abundant on certain branchlets. Piso says the carpels of this shrub are astringent, and are not only eaten crude, but that an oil is expressed from them, which is used in salads.

Jabotapita Gomphia. Clt. 1820. Shrub 6 feet.

23 G. squamòsa (D. C. l. c. no. 12. t. 12.) leaves oval-lanceolate, tapering to both ends, a little serrated; stipulas broad at the base, awnedly-acute, permanent; petals somewhat orbicular, length of calyx; berries rather globose. ♄. S. Native of Tobago. Racemes panicled, simple, or forked.

Scaly Gomphia. Shrub 6 feet.

24 G. nítida (Swartz, fl. ind. occ. 2. p. 739.) leaves oval-lanceolate, acuminated, serrated at the apex; calyxes equal in length to the corolla; berries ovate. ♄. S. Native of Jamaica and St. Thomas, in woods. Racemes panicled. D. C. l. c. no. 13. t. 13. Panicle racemose.

Nitid-leaved Gomphia. Clt. 1803. Shrub 8 feet.

25 G. acumina'ta (D. C. l. c. no. 14. t. 14.) leaves oval-oblong, abruptly acuminated, serrated from the middle to the apex; petals about the length of the corolla. ♄. S. Native of Brazil. Racemes panicled.

Acuminated-leaved Gomphia. Shrub.

26 G. RETICULA'TA (Beauv. fl. d'ow. 2. p. 22. t. 722.) leaves lanceolate, serrated, acute, reticulately nerved; racemes panicled. ♄. S. Native of Guinea; very common among bushes.

Netted-leaved Gomphia. Fl. Feb. June. Shrub 3 to 4 feet

27 G. MEXICA'NA (Humb. et Bonpl. pl. equin. 2. p. 21. t. 74.) leaves oval-lanceolate, serrated, tapering to the base and apex; racemes short, crowded with flowers; petals orbicular, unguiculate, length of calyx. ♄. S. Native of Mexico, between Acapulco and Chilpancingo. H. B. et Kunth, nov. gen. amer. 6. p. 13.

Mexican Gomphia. Shrub 4 feet.

28 G. GLABE'RRIMA (Beauv. fl. d'ow. 2. p. 22. t. 71.) leaves lanceolate-oblong, very acute, shining, almost nerveless, serrated from the middle to the apex; racemes simple. ♄. S. Native of Guinea, in low bushy places.

Very-smooth Gomphia. Shrub 4 feet.

29 G. HEXASPE'RMA (St. Hil. pl. usu. bras. no. 38. fl. bras. 1. p. 61.) leaves oblong-lanceolate, acuminated, obsoletely serrated, but entire at the base and apex, veinless beneath; panicles terminal; ovaries 6-7. ♄. S. Native of Brazil, in the province of Minas Geraes. Stem arboreous, with corky bark. The inhabitants of Brazil employ the bark of this tree to cure wounds in cattle, occasioned by the bites of insects.

Six-seeded Gomphia. Tree.

30 G. OLIVÆFÓRMIS (St. Hil. fl. bras. 1. p. 67.) quite smooth; leaves broad, elliptic-lanceolate, acuminated, obsoletely serrated, entire at the base; flowers racemose, terminal; anthers smoothish; receptacle fleshy, turbinate. ♄. S. Native of Brazil, in the province of Rio Janeiro.

Olive-formed Gomphia. Shrub 15 feet.

31 G. CURVA'TA (St. Hil. fl. bras. 1. p. 68.) quite smooth; leaves large, nearly sessile, oblong-obovate, cuspidate, entire at the base and somewhat cuneated, veiny, serrated at the apex, very coriaceous, racemes compact, incurved; pedicels tubercled; petals longer than the calyx. ♄. S. Native of Brazil.

Curved-racemed Gomphia. Shrub 8 feet.

32 G. LU'CENS (H. B. et Kunth, nov. gen. amer. 7. p. 246.) leaves scattered, stalked, oblong-lanceolate, tapering to the base, remotely serrated, obsoletely veined, membranous, shining; racemes compound. ♄. S. Native of New Granada.

Shining-leaved Gomphia. Shrub 10 to 12 feet.

33 G. GLAUCE'SCENS (St. Hil. fl. bras. 1. p. 68. t. 13.) quite smooth; leaves nearly sessile, a little imbricate, subcordate, ovate or oblong-ovate, mucronate, hardly serrated at the apex, rather glaucous; racemes terminal, nearly simple; petals large, obovate, exceeding the calyx; anthers wrinkled transversely. ♄. S. Native of Brazil, in the province of Minas Geraes.

Glaucous Gomphia. Fl. Sept. Shrub 8 feet.

34 G. SEMISERRA'TA (Mart. in act. bonn. 12. p. 41.) leaves elliptical, serrated in front, coriaceous; flowers panicled; petals orbicular, length of calyx. ♄. S. Native of Brazil.

Half-serrated-leaved Gomphia. Shrub 5 to 6 feet.

35 G. PERSÍSTENS (St. Hil. fl. bras. 1. p. 62.) quite smooth; leaves oblong, acuminated, serrated, coriaceous, nearly veinless beneath; flowers panicled; calyx permanent; petals obovate, about the length of the calyx: anthers smooth. ♄. S. Native of Brazil, in the province of Minas Geraes.

Permanent-calyxed Gomphia. Shrub 5 to 6 feet.

36 G. NERVÒSA (St. Hil. l. c.) leaves elliptic-lanceolate, acuminate, serrulated, veiny beneath; racemes panicled; anthers transversely wrinkled. ♄. S. Native of Brazil, in the province of Goyaz. G. venòsa, Spreng. syst. app. p. 163.

Nerved-leaved Gomphia. Shrub.

37 G. HU'MILIS (St. Hil. l. c.) suffruticose, quite smooth; lower leaves ovate-oblong, obtuse at the base, upper ones oblong, acute at both ends, somewhat serrated; racemes panicled; petals obovate, emarginate, exceeding the calyx in length; anthers undulately wrinkled. ♄. S. Native of Brazil, in the province of Minas Geraes, and in the southern part of the province of Goyaz. Stems simple.

Humble Gomphia. Shrub 1 to 2 feet.

38 G. NA'NA (St. Hil. fl. bras. 1. p. 66. t. 12.) suffruticose, pubescent; leaves ovate-oblong, very blunt at the base, subcuspidate, serrated; stipulas permanent, nearly linear, acuminated; flowers axillary, racemose, and in terminal, panicled racemes; petals a little longer than the calyx; anthers wrinkled undulately. ♄. S. Native of Brazil, in the province of Minas Geraes. Stems simple.

Dwarf Gomphia. Shrub 1 to 2 feet.

39 G. CARDIOSPE'RMA (D. C. l. c. no. 22. t. 19.) leaves oval, acute, finely serrated; berries obcordately 2-lobed. ♄. S. Native of Guiana, in marshes. Ochna cardiospérma, Lam. dict. 4. p. 511. Flowers panicled.

Heart-seeded Gomphia. Shrub 4 feet.

Cult. *Gómphia* is a genus of most beautiful shrubs, which deserve to be cultivated in every collection of stove plants, for the elegance of their foliage and flowers; they will thrive well in a mixture of loam, peat, and sand; and ripened cuttings will strike root, if planted in a pot of sand, with a hand-glass placed over them, in a moist heat.

III. WALKE'RA (in honour of Richard Walker, D.D., founder of the Botanical Garden at Cambridge). Schreb. gen. p. 150. D. C. prod. 1. p. 737. in ann. mus. 17. p. 421. Meèsia, Gært. fruct. 1. p. 344. but not of Hedw.

LIN. SYST. *Pentándria*, *Monogýnia*. Petals 5. Stamens 5; anthers ovate. Drupe (ex Gært.) obovately kidney-shaped. Embryo inverted, with a hooked beak.

1 W. SERRA'TA (Willd. spec. 1. p. 1145.) leaves serrately crenate; racemes somewhat corymbose; lobes of calyx lanceolate. ♄. S. Native of Malabar and Ceylon. Meèsia serràta, Gært. fruct. 1. p. 344. t. 70. Tsjocatti, Rheed. mal. 5. t. 48. Flowers small, yellow. Drupes reddish. The roots and leaves are bitter, a decoction of them, either in water or milk, is used in Malabar as tonic, stomachic, and antiemetic.

Serrated-leaved Walkera. Clt. 1824. Shrub 12 feet.

2 W. INTEGRIFÒLIA (D. C. prod. 1. p. 737.) leaves entire; racemes simple, elongated; lobes of calyx very short. ♄. S. Native of French Guiana. Petals yellow, coriaceous. Berries 2-3, often abortive.

Entire-leaved Walkera. Shrub 8 feet.

Cult. See *Gómphia* for cultivation and propagation.

IV. ELVA'SIA (in honour of Francis Manoel d'Elvas, a Portuguese, who first illustrated the natural history of Brazil). D. C. in ann. mus. 17. p. 422. prod. 1. p. 738.

LIN. SYST. *Octándria*, *Monogýnia*. Calyx 4-parted. Petals 4. Stamens 8, 4 of which are opposite the petals, with longish filaments, and ovate, adnate anthers, which burst by 2 pores at the apex. Ovary seated on the columnar receptacle, 4-lobed, 4-celled, the lobes are neither distinct nor profound; cells 1-seeded. Ovula suspended from the inner angle.

1 E. CALOPHY'LLA (D. C. l. c. no. 1. t. 20.). ♄. S. Native of Brazil. Leaves oblong, quite entire, with the veins parallel with the middle nerve. Panicles terminal. Flowers small, yellow. Ovary of 4 tubercles.

Beautiful-leaved Elvasia. Shrub 6 feet.

Cult. See *Gómphia* for cultivation and propagation.

V. CASTE'LA (named by Turpin after M. Castel, author of a poem upon plants). Turp. ann. mus. 7. p. 78. t. 5. D.C. prod. 1. p. 738.

LIN. SYST. *Dioècia, Monogýnia.* Calyx small, 4-cleft. Petals 4, alternating with the teeth of the calyx. Male flowers; stamens 8, inserted with the petals and equal in length to them. Anthers inverse. Pistil abortive, minute. Female with 8 abortive stamens. Ovary 4-lobed, seated on a circular disk. Lobes 4, distinct, drupaceous, 1-seeded, rising from a fleshy gynobase. Style 1, or hardly any, crowned by 4 recurved stigmas. Drupes 4, at length free. Seed inverted, with a superior radicle and 2 leafy cotyledons. Albumen sparing.—Small shrubs with alternate branches, which are spiny at the apex, alternate entire leaves, and small, axillary, yellow flowers.

1 C. DEPRE'SSA (Turp. l. c. p. 79. t. 5. A.) leaves oval-oblong, sessile, somewhat cordate at the base; spines axillary. ♄. S. Native of St. Domingo between Monte Christi and St. Yago. Flowers purplish.

Depressed Castela. Shrub 2 feet.

2 C. ERE'CTA (Turp. l. c. p. 80. t. 5. B.) leaves lanceolate, stalked; spines infra-axillary. ♄. S. Native of Antigua.

Erect Castela. Shrub 2 feet.

3 C. NICHOLSÒNI (Hook. bot. misc. 3d part, p. 271. t. 54.) leaves elliptical, mucronulate, silky and hoary beneath, as well as the branches; spines axillary; stamens hairy. ♄. S. Native of Antigua, where it is called *Goat-bush* by the Negroes. Flowers small, copper-coloured, dioecious. The whole plant is very bitter.

Nicholson's Castela. Shrub 4 feet.

Cult. See *Gómphia* for culture and propagation.

ORDER LXIII. CORIARIE'Æ (plants agreeing with *Coriària* in important characters). D. C. prod. 1. p. 739.

Flowers hermaphrodite, monoecious or dioecious. Calyx (or perigone) of one campanulate 10-cleft sepal, the 5 outer lobes are ovate, larger than the 5 inner ones, which are callose, alternating with each other. Petals wanting. Stamens 10, protruding from the torus, 5 of which are between the outer lobes of the calyx and angles of the ovary; and the other 5 between the inner or callose lobes of the calyx, and the furrows of the ovary. Filaments filiform. Anthers oblong, 2-celled. Ovary seated on a thickish torus, 5-celled, 5-angled. Style wanting. Stigmas 5, long, awl-shaped, rising from the top of the ovary. Carpels 5, when at maturity almost free, approximate, indehiscent, 1-seeded, surrounded by large glandular lobes. Seed pendulous. Albumen wanting. Embryo straight, with a superior radicle, and 2 fleshy cotyledons.—Shrubs, with somewhat tetragonal, opposite or tern branches. Leaves opposite, simple, 3-nerved, entire, ovate or cordate. Leaf bud scaly. Racemes of flowers terminating the branches and branchlets, leafy at the base, simple: pedicels opposite or alternate at the tops of the racemes, furnished with bracteas at their base, and usually with two in their middle. The proper place which this order should occupy in the natural system is very doubtful. It has been referred to *Terebinthàceæ* by old authors, but on account of the hypogynous insertion of the stamens and straight embryo, it cannot belong to it. By Jussieu it was referred to *Atriplices*, on account of its want of petals, but it has no other analogy with that order.

I. CORIA'RIA (from *corium*, a hide. *C. myrtifòlia* is considerably astringent, and is used not only in tanning leather, but in dying black colours). Niss. in act. par. 1711. t. 12. D. C. prod. 1. p. 739.

LIN. SYST. *Dioe'cia, Decándria.* Character the same as that of the order.

1 C. MYRTIFÒLIA (Lin. spec. 1467.) leaves ovate-lanceolate, acute, triple-nerved, on short petioles, smooth; racemes rather erect. ♄. H. Native of the south of Europe and north of Africa, in hedges and bushy places. Lam. ill. t. 822. Duham. arb. 1. t. 73. Wats, dend. brit. t. 103. Flowers hermaphrodite, monoecious or dioecious, greenish. This shrub sends up many stems from the root, and is therefore useful to fill up vacancies in shrubberies and plantations.

Myrtle-leaved Coriaria. Fl. May, Aug. Clt. 1629. Shrub 4 to 6 feet.

2 C. MICROPHY'LLA (Poir. dict. 6. p. 87.) leaves ovate, bluntish, 5-nerved, almost sessile; racemes nodding. ♄. G. Native of Peru. Flowers greenish.

Small-leaved Coriaria. Shrub 3 to 6 feet.

3 C. SARMENTÒSA (Forst. prod. p. 377.) sarmentose, diffuse; leaves cordate-ovate, acuminated, quite entire, 5-nerved, on very short stalks; racemes nodding. ♄. G. Native of New Zealand. Hook. bot. mag. t. 2470. Flowers brownish-green.

Sarmentose Coriaria. Fl. May, Aug. Clt. 1823. Shrub 3 to 6 feet.

4 C. RUSCIFÒLIA (Lin. spec. 1467.) leaves cordate-ovate, acute, sessile, many-nerved; racemes nodding, cylindrical. ♄. G. Native of Peru, and of Chili, at Conception.—Feuill. per. 3. p. 17. t. 12. Leaves usually tern on the branches, but opposite on the branchlets. Flowers hermaphrodite, greenish.

Butcher's-broom-leaved Coriaria. Shrub.

5 C. PHYLICIFÒLIA (Humb. in Willd. spec. 4. p. 819.) leaves subcordate, oblong, acute, stalked, 3-nerved, veiny; peduncles hispid. ♄. G. Native of Peru. Flowers greenish.

Phylica-leaved Coriaria. Shrub.

6 C. THYMIFÒLIA (Humb. in Willd. spec. 4. p. 819.) leaves oblong, acute, stalked, 3-nerved; petioles and peduncles hispid. ♄. G. Native of Peru. Hardly distinct from the preceding.

Thyme-leaved Coriaria. Shrub.

7 C. ATROPURPU'REA (Moc. et Sesse, fl. mex. ined. D. C. prod. 1. p. 740.) leaves cordate, ovate, acute, sessile, 3-nerved; racemes terminal, cylindrical, simple. ♄. G. Native of Mexico. Flowers with 5 petals and 5 styles, dark-purple.

Dark-purple-flowered Coriaria. Shrub.

Cult. The hardy species, *C. myrtifòlia*, will thrive in any common soil, and is readily increased by cuttings of the roots or by suckers. The other species will all require the protection of a green-house; they will thrive very well in a mixture of sand, loam, and peat; and cuttings planted in the same kind of soil will readily strike root under a hand-glass.

END OF VOL. I.

LONDON:

GILBERT & RIVINGTON, PRINTERS, ST. JOHN'S SQUARE.